Colorado School of Public Health

Awareness of Marijuana Law, and Attitudes towards Marijuana Use among two samples in Colorado, 2014

A report including plans for evaluation and findings from baseline surveys prior to implementation of educational campaigns.

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Table of Contents

Executive Summary 4

Program Background 10

Stakeholders and Primary Intended Users of the Evaluation 10

Evaluation Background 12

Evaluation Goals 12

Evaluation Deliverables 12

Evaluation Methodology 13

Evaluation Implementation - Goal 1 25

Evaluation Implementation - Goal 2 30

Pilot testing and community input on survey measures 33

Focus Group Methods 35

Evaluation Findings: Mixed-Mode Survey 35

Sample design 35

Instrument Development 36

Data Collection Procedures 37

Mail 37

Telephone 37

Weighting 37

Response Rate and Diagram 38

Evaluation Indicators 39

Media Reach 41

Accurate Knowledge of Retail Marijuana Laws 41

Accurate Knowledge of Risks Associated with Retail Marijuana 42

Results from Baseline, Mixed-Mode Survey 43

Sample Demographics 43

Media Awareness, Mixed-Mode Sample 45

Knowledge of Laws, Mixed-Mode Sample 45

Perceptions of Risk and Health Effects, Mixed-Mode Sample 55

Results from Baseline, Spanish Language Mixed-Mode Sample 56

Sample Demographics 56
Media Awareness, Spanish Language Mixed-Mode Sample 57
Knowledge of Laws, Spanish Language Mixed-Mode Sample 58
Perceptions of Risk and Health Effects, Spanish Language Mixed-Mode Sample 58
Evaluation Findings: Venue-Day-Time Community Survey and in-depth interviews 60
Sample Design 60
Analysis plan 63
Results from Baseline, Community Survey 64
Media Awareness, Community sample 65
Knowledge of Laws, Community sample 67
Evaluation Secondary Goals (Goal 2) 83
Goal 2 Evaluation Overview 83
CDPHE Regional Trainings 85
Methods 85
Evaluation Findings: Regional Trainings 86
Technical Assistance Program 91
Technical Assistance Program Methods 91
Technical Assistance Overview 91
Assessment Processes and Procedures 91
Evaluation Findings: Technical Assistance Program 92
Requestor Needs 97
Collaboration Activities 99
Collaboration Activities Methods 99
Objective 99
Collaboration Overview 100
Assessment Processes and Procedures 100
Evaluation Findings: Collaboration Activities 102
Agency Interview Data 104
Frequency and Type of Collaboration Activities 104
Next Steps and Recommendations 109

Messaging Efforts 109
Messaging Efforts Methods 109
Next Steps and Recommendations 114
Evaluation Findings: Secondary Data Sources 117
Appendices 117

Retail Marijuana Education and Prevention Campaign Evaluation Plan

Executive Summary

This evaluation project supports the Retail Marijuana Prevention and Education Program, including mass media campaigns. The Colorado Department of Public Health and Environment (CDPHE) was designated the lead for implementing public education efforts and aligning messaging across state agencies through Senate Bills 13-283 and 14-215. Statewide campaign messages will include resources from many state agencies, including the Colorado Department of Education (CDE), Colorado Department of Human Services (CDHS), Colorado Department of Revenue (DOR) and the Colorado Department of Transportation (CDOT). The state will benefit from this project by increasing accurate knowledge of the retail marijuana laws in the state. CDPHE is funded through the marijuana tax cash fund to educate Colorado residents and visitors about safe, legal, and responsible use of marijuana while mitigating negative public health consequences through implementation of the following activities:

1. An 18-month campaign directed at educating the public on the health effects of marijuana and legal parameters of use, including fact sheets and clinical guidelines for physicians

2. An ongoing education and prevention campaign that further educates a) the public on legal use of marijuana, b) retailers on the importance of preventing youth access, c) high risk populations on safe use (to include hash oil extraction at home, pregnant/ breastfeeding women, secondhand marijuana smoke exposure among children, accidental ingestion by children, and more), and d) the public to prevent the over-consumption of edibles.

3. Provision of regional trainings and technical assistance annually for local programs that are addressing marijuana prevention.

4. Maintenance of a website portal to all state agency information on marijuana and advertise the existence of the website to the public.

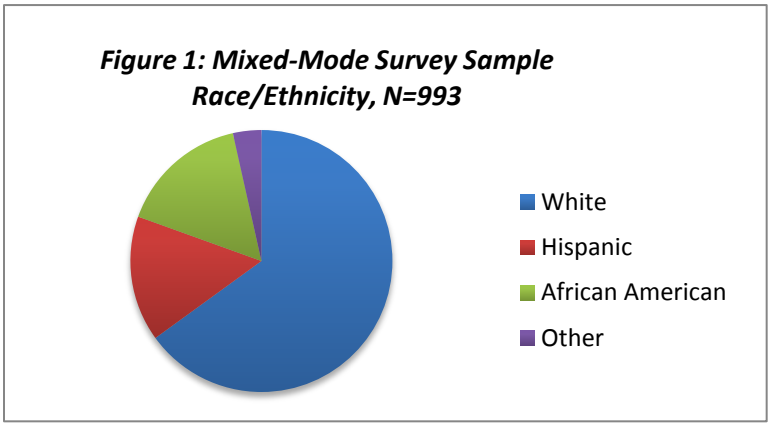
5. Alignment of messaging across state agencies and integrate their information into the above campaigns/website.

The evaluation will be conducted in accordance with the Centers for Disease Control and Prevention's Framework for Program Evaluation[1] over a 36 month period beginning September, 2014 and has two primary goals: To assess the effectiveness of CDPHE's marijuana prevention and education campaign and website; and to assess the effectiveness of regional trainings, technical assistance, system-level collaborations, and integration of campaign messaging across state agencies. During the evaluation, we will document changes in accurate knowledge of retail marijuana laws and the health impacts of marijuana use; changes in perceptions about problematic use of marijuana and awareness of specific and diverse marijuana campaigns statewide. Results are not generalizable to the population of Colorado.

[1] See: http://www.cdc.gov/eval/framework/index.htm

Goal 1 Executive Summary: Baseline Survey Findings

Mixed-Mode Survey

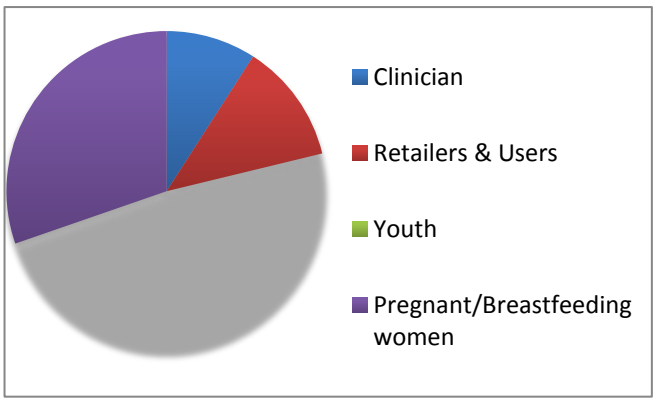


At baseline, more than half of respondents in the main sample reporting seeing or hearing any advertising about marijuana; the most commonly endorsed slogans were "Drive high, get a DUI", "Consume responsibly," and "Don't be a lab rat." Accurate knowledge of marijuana-related laws varied, with high proportions (~90%) reporting accurate knowledge of where marijuana can and cannot be used; that it is possible to get a DUI, and that it is not legal to take marijuana out of state. Three-quarters knew that the legal age to buy recreational marijuana is 21. Lower proportions knew that 1-ounce is the amount that may be legally be purchased by a Colorado resident (30%) and that a Colorado resident can grow six plants (23%). Endorsement of health effects or perceptions of risk of harm varied across 15 statements queried in the survey, from a low of 27% perceiving moderate risk or a lot of risk associated with an adult using marijuana once a week, to 88% endorsing there is moderate or a lot of risk associated with a teenager, with significant differences by gender, race/ethnicity, age, and current marijuana use.

Spanish-dominant and English-dominant Hispanic/Latinos (hereafter referred to as Hispanics) had relatively similar awareness of marijuana-related media campaign slogans. Compared to English-dominant respondents, Spanish-dominant respondents generally had lower rates of knowledge of the laws governing permitted use, but equal or higher knowledge of laws related to restrictions on use, and consistently higher knowledge of health effects and perceptions of harm.

Venue-Day-Time (VDT) Community Survey

Figure 2: Community Survey, Total Sample, N=501



The Community Survey is designed to produce rich information from specific population sub-groups, including clinicians, retail marijuana business owners and staff, retail marijuana users, youth, pregnant and breastfeeding women. By design, the information does not accurately represent these groups as a whole but does generate more detailed information than population surveys can provide. There were 501 participants in the venue-day-time community survey, comprising a probability sample of clinicians (9% of the sample), retailers and marijuana users (12%), youth (48%) and pregnant women (30%). Most of the sample was from Denver/Adams counties, followed by El Paso. The remaining sample was relatively equally split between Mesa, Eagle, San Luis Valley (Rio Grande and Alamosa Counties) and Weld County. Over a third (39%) of the sample self-identified as Latino. Over 40% indicated Spanish as their first language among clinicians, youth and pregnant women. Among retailers the proportion was much lower, at 15%. Just under one-fifth of the sample (18%) self-identified as African American. The largest proportion of African Americans was among the youth sample at 24%. Just under 60% of the sample was female; a higher proportion of females compared to males is to be expected given our explicit intention to survey pregnant and breastfeeding women.

We identified several key findings in this survey that were corroborated with in-depth qualitative interviews with 24 representatives across these groups:

- Knowledge about specific elements of the laws related to marijuana is incomplete and inconsistent across all groups surveyed.
- Retailers and users have more positive attitudes about use compared to other groups surveyed.
- Youth and retailers and adult users less frequently believe the risks associated with daily or weekly use for adults and youth compared to clinicians as well as pregnant women.
- There is consistent agreement that use among pregnant and breastfeeding women may be harmful.
- Familiarity with educational campaigns related to marijuana use is low across all groups. There is greater familiarity with advertisement promoting marijuana products.
- While clinicians are generally confident about initiating conversations about marijuana, they do not feel adequately trained to do so, and feel they lack education on harms related to marijuana use.

Awareness of laws regulating marijuana growth, transport and use

In general, groups surveyed in the both the mixed-mode and community VDT samples do not have complete information about the marijuana laws in Colorado, with some discrepancies in awareness across the groups surveyed. Spanish speakers generally had lower awareness of marijuana laws. Clinicians had the lowest awareness of where one can legally use marijuana (e.g. not in a business or public place, but in a private home).

Attitudes towards marijuana use

There is variability among respondents to the mixed-mode survey in attitudes towards marijuana use, with the overall perception that marijuana use is less harmful to adults compared to youth. There are distinct differences between marijuana retailers and users compared to other groups in the community VDT sample in terms of attitudes that marijuana use can cause depression or anxiety, that daily use among adults is addictive or will impair memory and that use during pregnancy can be harmful to cognitive development for children. In contrast, clinicians as a group had much higher proportions in agreement with these perspectives.

Awareness of risk related to marijuana use

Among those in the mixed-mode survey the overall perception is that occasional use of marijuana by adults carries relatively low-risk but that use of marijuana among youth confers greater risk. Among Spanish speakers perceptions of risk for use among any group was higher compared to English language survey respondents. Similar differences are seen in the community VDT sample when comparing responses to questions of whether there are risks associated with use. Retailers and Users much more frequently indicated there was no risk associated with weekly or daily use for adults. About 20% of both Retailers and Users and youth agreed there was no risk to teens from weekly or daily use of marijuana. Fewer than 20% of any group agreed there was no risk related to using weekly or daily for pregnant or breastfeeding women.

Awareness of campaigns related to marijuana use

Close to half of those in the mixed-mode survey were aware of a marijuana related educational campaign. By contrast, less than one-third (28%) of those surveyed in the community VDT sample indicated seeing any sort of advertisement about marijuana in the past month. The “Drive High, Get a DUI,” “Don’t be a Lab Rat,” and “Consume Responsibly” were the campaigns most familiar to participants.

In contrast to having less than one-third exposed to marijuana campaigns, close to half the community sample overall (48%) report seeing advertisement for marijuana products, with slightly higher proportions indicating this among Retailers and Users and youth.

Clinicians and education with patients/clients related to marijuana use

Among those clinicians who provide care to pregnant patients (66% of those surveyed), 74% rely on a nurse or non-primary care provider to communicate with women about marijuana—with the exception of primary care

providers, who rely on others to communicate about marijuana (23%). This is dissimilar for what occurs among those serving breastfeeding women; 34% indicate a nurse or non-primary care provider will communicate about marijuana and 47% indicate a primary care provider does. Although 45% indicate they are confident about initiating a conversation about marijuana, clinicians generally report not spending much time discussing marijuana and a lack of knowledge about and or feel inadequately trained to discuss marijuana risks with pregnant and breastfeeding women. When asked what would be useful to address these deficits, the most popular options were to offer clinical guidelines and in-person training on the effects of marijuana, and to develop effective patient education materials related to marijuana.

Considerations for future efforts: Recommendations for Education and Community Partnerships and Participation in Evaluation Efforts

Recommendations for educational efforts include efforts to educate the public about specific elements of the laws related to retail marijuana use, particularly to raise awareness that it is only legal to consume retail marijuana for those aged 21 and older; that marijuana may not be consumed outdoors; that marijuana cannot be transported out of state, and that persons can be cited for driving under the influence of marijuana.

Recommendations also include suggestions to emphasize educational efforts to raise awareness about the risks related to marijuana use, specifically for youth, pregnant and breastfeeding women. It is critical to consider tailoring educational campaigns for specific audiences, to ensure greater success. For example, educational campaigns for youth can focus more explicitly on risks associated with youth brain development; those for pregnant and breastfeeding women can focus more explicitly on risks for child development. We also recommend efforts to increase awareness that daily use can have negative effects; that care should be taken when consuming edibles to avoid over-consumption; and that use of child proof containers for any type of marijuana are critical. Finally, given the important role that clinicians play in interacting with the populace, we recommend clinician specific education to raise their awareness of laws and scientific evidence on risks associated with marijuana use for adults, youth, pregnant and breastfeeding women, and children.

The mixed-mode and VDT community surveys were successfully completed under challenging time constraints from the legislature, thanks in large part to longstanding relationships with partner organizations that represent diverse Colorado communities affected by marijuana. Our many previous projects with these organizations have adhered closely to principles of Community Based Participatory Research (CBPR).[2] We fully engage community partners in all aspects of the work, from conception of studies to design and data collection, to creation and dissemination of findings. The VDT community survey was less adherent to CBPR than is healthy for maintaining community partner trust, and we noted a number of partner concerns about the timeline and reduced opportunities for full participation and partnership. The evaluation team and CDPHE should consistently review

[2] See Israel, B.A., Schulz, A.J., Parker, E.A., & Becker, A.B. (1998). Review of community-based research: Assessing partnership approaches to improve public health. *Annual Review of Public Health,* 19, 173-202.

plans and timelines, and revise these as needed to ensure that ongoing evaluation activities with Colorado communities will maintain the full integrity of CBPR principles.

Goal 2 Executive Summary: System-Level Marijuana Education and Prevention Activities

The second goal is to evaluate system-level marijuana educational and prevention activities. The Colorado School of Public Health (CSPH) assessed four efforts: Colorado Department of Public Health and Environment Regional Trainings, Colorado Department of Public Health and Environment's Technical Assistance program, state-based collaboration activities, and state-based marijuana messaging efforts.

Regional Trainings. Preliminary findings suggest that the six Regional Trainings effectively delivered retail marijuana information and increased the public dissemination of training materials. Attendees' represented a variety of State and local agencies and the material suited to their professional needs. Participants reported high training and facilitator satisfaction, increased knowledge of retail marijuana resources, and stated that they were likely to incorporate the training information into their program. A four-month follow-up survey is planned to assess longer-term utilization of the training material.

Technical Assistance Program. From November 2014 through March 2015, the Technical Assistance program service received 68 unique requests. The most commonly requested areas were marijuana prevention and educational materials, media campaign resources, contact referrals, laws and regulation, and school-based materials. Requestors expressed high satisfaction and used, or intended to use, the information they received. Nearly three-quarters of requestors shared the information. The most requested materials were the youth prevention and education materials and social media tools.

Collaboration. State agencies collaborated in over 90 retail marijuana activities between October 2014 and early April 2015 for education, health, safety, or prevention efforts. Respondents agreed that the goal of collaboration was clear and opportunities for joint work were available. Few barriers were identified and agencies appeared similar in their views about how retail marijuana collaborative tasks should be carried out. We recommend expanding the collaboration evaluation to those outside Colorado and establishing policy recommendations for other states about how to develop relationships and engage retail marijuana voices into education and prevention conversations.

Message integration. Message integration through multiple state-based media campaigns and website information addressed the educational priorities established by the Governor's Office including health, laws, youth, edibles and safe storage. Media campaigns geared towards Spanish-speaking populations and the use of social media would ensure the distribution of information to a wider audience. Additional information may be needed for pregnant or breastfeeding women. We recommend a review of additional media campaign efforts produced by the Industry and other public health agencies.

Program Background

The Colorado Department of Public Health and Environment (CDPHE) was tasked in Senate Bills 13-283 (page 8) and 14-215 (pages 15-19, 26, 29-30) with implementing various aspects of the new retail marijuana system to monitor changes in use patterns, monitor and prevent negative health outcomes, educate the public, align messages across agencies, and more.

CDPHE's Prevention Services Division was funded beginning July 1, 2014 to create statewide campaigns to educate Colorado residents and visitors about safe, legal, and responsible use of marijuana. CDPHE's $5,683,608 appropriation through Senate Bill 14-215 includes funding for 3.7 FTE and operating expenses, surveillance/data collection (more information in the next section), evaluation of the campaigns, clinical prevention guidelines development, translation, educating school districts on marijuana laws for schools, creation of fact sheets and the development and execution of the program as outlined in statute.

CDPHE is contracting with the Colorado School of Public Health (CSPH) to evaluate the effectiveness of the Retail Marijuana Education Program. CSPH is a qualified evaluation partner that holds expertise, content knowledge, and demonstrated experience in the evaluation of both mass reach media campaigns to affect behavior and the evaluation of prevention programs on substance use or abuse.

Stakeholders and Primary Intended Users of the Evaluation

The stakeholders and primary users of this evaluation are listed below. Uses of this evaluation have the potential to be wide reaching, beyond that of traditional stakeholders such as groups and organizations involved directly with retail marijuana sales and use in Colorado. The evaluation may be beneficial to the community at large, as many community groups and individuals have an interest in improving the health and wellbeing of the Colorado population. The evaluation can also contribute to an evidence-base for the effectiveness of retail marijuana campaigns and inform parties outside of Colorado on the processes, strengths, and challenges for implementing a Retail Marijuana Education and Prevention Campaign at the state and local levels.

The evaluation stakeholders will be engaged throughout the development and implementation of the evaluation plan. The evaluation findings that will be communicated to the stakeholders include results specific to the evaluation goals, and progress made toward distal and proximal objectives. We will disseminate findings to those listed in as Stakeholders below, our Evaluation Advisory Workgroup, and post them to the CDPHE website. This is a final report on the baseline data.

Based on the interest of the stakeholders, the evaluation is designed to help decision makers with the following:

- Understand current level of knowledge, attitudes, and behaviors related to recreational marijuana use and whether and/or how it changes between 2014 and 2017.
- Understand the level of exposure statewide to marijuana education and prevention campaigns.
- Understand the relationship between marijuana education and prevention campaign exposure and changes in knowledge, attitudes, and behaviors related to retail marijuana use and whether and/or how

it changes between 2014 and 2017.
- Prioritize future social marketing education and prevention campaigns.
- Determine the most appropriate allocation of public health and social service resources to support appropriate and legal consumption of retail marijuana.

Stakeholders in the Evaluation

- Colorado General Assembly
- CDPHE - leadership and programs
- CDPHE – Office of Planning and Partnerships (OPP)
- Colorado Association of Public Health Officials (CALPHO)
- State Agencies: Colorado Department of Human Services (CDHS); Colorado Department of Health Care Policy & Financing; Colorado Department of Transportation; Colorado Department of Education; Colorado Attorney General's Substance Abuse Trend and Response Task Force
- Colorado Governor's Office
- Substance abuse professionals
- Retail and Medical Marijuana Grower Associations
- Local public health agencies (LPHAs)
- Places that interact and provide services to children like schools, childcare, community groups, etc.
- Parents and Families
- Other local and state governments or other organizations with an interest in
- Retail and Medical Marijuana Industry members
- Colorado County Attorney's Association
- Colorado District Attorney's Association
- CDHS grantees – Tony Grampas Youth Services Program; Access to Recovery; Prevention and Intervention Programs; federal mental health and substance abuse block grants
- American Civil Liberties Union (ACLU)
- National Association for the Advancement of Colorado People (NAACP)
- National Council of La Raza (NCLR)
- Cannabis Patients Alliance
- Mothers Advocating Medical Marijuana for Autism (MAMMA); Mothers for medical marijuana treatment for autism; Cannabis for Autism
- Drug Policy Alliance
- Colorado Cannabis Collective
- Local Chambers of Commerce
- State & local tourism associations
- Cleaning/maid services (tourism industry)
- Centers for Disease Control and Prevention
- Veterans Administration

Other Federal, State and Local Governments

Evaluation Background

Conducting evaluation to understand the impact of CDPHE's marijuana education and prevention campaign is a primary core activity of the Violence and Injury Prevention—Mental Health Promotion Branch of the Colorado Department of Public Health and Environment.

The focus of this evaluation project is to understand current and ongoing knowledge of, attitudes toward and behaviors related to retail marijuana, whether Coloradans are viewing education and prevention campaign materials, and whether there is a relationship between viewing the campaign and changes in retail marijuana knowledge, attitudes and behaviors.

The CDC evaluation framework was applied during the evaluation planning process and provided a guide for designing and conducting the evaluation. The following standards were applied throughout the development of the evaluation plan: utility (serve the information needs of intended users); feasibility (be realistic, prudent, diplomatic, and frugal); propriety (behave legally, ethically, and with regard for the welfare of those involved and those affected); and accuracy (reveal and convey technically accurate information). The CDC evaluation framework includes the following steps:

1. Engage stakeholders: Those persons involved in or affected by the program and primary users of the evaluation.
2. Describe the program: Need, expected effects, activities, resources, stage, context, logic model.
3. Focus the evaluation design: Purpose, users, uses, questions, methods, agreements.
4. Gather credible evidence: Indicators, sources, quality, quantity, and logistics.
5. Justify conclusions: Standards, analysis/synthesis, interpretation, judgment, recommendations.
6. Ensure use and share lessons learned: Design, preparation, feedback, follow-up, and dissemination.

Evaluation Goals

The goals of the evaluation are to (1) assess the effectiveness of CDPHE's marijuana prevention and education campaign and website; and (2) assess the effectiveness of regional trainings, technical assistance, system-level collaborations, and integration of campaign messaging across state agencies.

Evaluation Deliverables

Evaluation of CDPHE's marijuana education campaign will include but not be limited to the following deliverables:

1. Completed three-year evaluation plan developed with goals, objectives, timelines, and monitoring plan delivered to CDPHE.
2. Recommendations for the media-agency contractor on focus group recruitment, focus group methodology and guide, qualitative analysis, formative testing of messages, and best practices for reporting results for focus groups on message development and creative testing/response.
3. Development of evaluation tools that receive CDPHE approval prior to use.

4. Cognitive testing of surveillance questions related to marijuana use.
5. Completed baseline survey report of campaign recognition, knowledge and behavioral questions by December 31, 2014 (including recognition of CDOT, DOR, CBS, CDHS and Governor's Office Campaigns).
6. Completed annual evaluation reports on the reach (including the gross rating points from the media/ advertising agency) and effectiveness of the campaigns and other prevention efforts. Additionally, the contractor will help author two reports prepared for the general assembly due to CDPHE by February 1, 2015 and September 1, 2015.

Evaluation Methodology

Our evaluation plan includes an analysis of multiple quantitative surveys administered at four time points with a cohort/panel of respondents and with multiple cross-sectional probability samples of high-risk population groups; analyses of secondary data sets with information on marijuana education and prevention knowledge attitudes and behaviors at three time points; and an organizational assessment of the quality of technical assistance and collaboration among CDPHE supported organizations. Because this is a program evaluation with the goals of improving an educational campaign, it is not considered research and does not require review and approval by the Colorado Multiple Institutional Review Board.

The evaluation will address the following questions:

1. What is the knowledge of, attitudes towards and behaviors related to retail marijuana statewide?
2. How have these changed over time?
3. How has the retail marijuana education and prevention program contributed—if at all—to these changes?

A thorough review of all marijuana campaign evaluation action plans and logic models yielded a comprehensive list of all possible indicators for each of the evaluation questions within each of the project goals. Key stakeholders were invited to participate on an Evaluation Campaign Advisory Workgroup to critique the list of indicators for the evaluation, highlight any gaps, and prioritize the most meaningful and impactful. Following the selection of indicators, key stakeholders and evaluation staff participated in several discussions to determine the best and most feasible data sources, data collection instruments, and data analysis to collect data on the indicators.

Evaluation and Methods Design

The Retail Marijuana Education and Prevention Campaign Evaluation and Methods Design table summarizes the specific indicators that will be measured in order to answer evaluation questions including different indicators to measure the evaluation questions and different sources and methodologies to collect data on the indicators. The table also includes the known limitations, timeframe and responsibility for data collection, and evaluation stakeholders for the indicators. The overall evaluation design is a mixed-method approach that combines quantitative and qualitative approaches and methods to maximize the strengths of each approach and gather the best data to measure the evaluation indicators.

Table 1. Retail Marijuana Education and Prevention Campaign Evaluation Methods and Design

Evaluation questions *What you want to know.*	**Indicators** *What type of data you will need.*	**Data sources/participants/ target population** *Where and from whom you will get the data.*	**Data collection instruments** *How you will get the data.*	**Data analysis** *How you will make sense of the data.*	**Known limitations** *Limits of the collection or analytical approach.*	**Timeframe and responsibility** *When and who will collect the data.*
1. Participation and Representation						
Is there adequate representation from stakeholders/external partnerships to implement the RMEP Campaign? To what extent have partners fulfilled their goals?	Representation from diverse geographic areas, clinicians, public health professionals, youth serving professionals and retailers on advisory boards.	RMEP Campaign Evaluation Advisory Board	Quarterly meeting logs	Document participation from stakeholders in quarterly advisory board meetings	Not representative; contingent upon persons who can travel and meet when scheduled	Once in 2014 and quarterly in 2015; 2016; 2017
2. Awareness of the Colorado Retail Marijuana Education and Prevention (RMEP) Campaign						
To what extent has the population of Colorado been exposed to the RMEP Campaigns?	Campaign reach and market penetration Awareness of RMEP campaign elements Awareness of other non-RMEP campaigns	Post-campaign media data Sample of >900 Colorado adults aged 20 and older	Self-administered survey with telephone interviewer administered follow up	Calculate campaign reach across population and within subgroups (youth; pregnant women; African Americans; Latinos; clinicians; retailers). Develop indices to document overall awareness. Compare these data over time across multiple surveys. Compare findings among demographic groups as appropriate and other possible confounders and for exposure to other non-RMEP campaigns.	Potentially low return rates Not generalizable to entire population	2014, 2015, 2016, 2017; Levinson
To what extent have youth, pregnant women, clinicians, and retailers/growers been exposed	Campaign reach and market penetration	Venue-day time probability sample of >500 youth and adult	Self-administered tablet survey using Research Electronic Data	Develop indices to document overall awareness; for the baseline assessment this includes awareness of four laws: legal age and place of use;	Not generalizable to entire population	2014, 2015, 2016, 2017; Bull

to the RMEP Campaigns?	Awareness of RMEP Campaign elements Awareness of other non-RMEP campaigns	Coloradoans.	Capture (REDCap)	knowledge of laws prohibiting out of state transport and awareness that there are penalties for driving under the influence. Compare these data over time across multiple surveys; Compare findings among different demographic groups as appropriate and other possible confounders and for exposure to other non-RMEP campaigns.		
3. Knowledge of retail Marijuana-related laws						
To what extent does the RMEP campaign help to increase the general public's (age 21 and older) accurate knowledge of the retail marijuana laws in CO?	Responses to questions on the laws pertaining to age restrictions, locations where marijuana can be used, possession, plant growing, driving under the influence, transportation of marijuana out of state, importance of law. Awareness of RMEP Campaign elements	Sample of 900 Colorado Adults aged 21 and older	Self-administered survey with telephone interviewer administered follow up *(See items 7-12 on Mixed-Mode Survey)*	Calculate percent of correct answers to questions overall and by subgroups within sample (e.g. <age 25; marijuana users; African Americans; Latinos); develop indices to document overall awareness; Compare these data over time across multiple surveys; Compare findings among different demographic groups as appropriate and other possible confounders and for exposure to other non-RMEP campaigns.	Potentially low return rates Not generalizable to entire population	2014, 2015, 2016, 2017; Levinson

	Awareness of other non-RMEP campaigns					
To what extent does the RMEP campaign help to increase accurate knowledge of the retail marijuana laws in CO among youth, pregnant women, clinicians, and retailers/growers?	Responses to questions on the laws pertaining to age restrictions, locations where marijuana can be used, possession, plant growing, driving under the influence, transportation of marijuana out of state, importance of law. Awareness of RMEP Campaign elements	Venue-day time probability sample of 500 clinicians, retailers, pregnant women and youth.	Self-administered tablet survey using Research Electronic Data Capture (REDCap). (*see items 94-102 on survey for clinicians; items 106-114 on survey for retailers; items 96-104 for pregnant/BF women; items 45-48 for youth*).	Calculate percent of correct answers to questions overall and by subgroups within sample (youth, pregnant women, clinicians, and retailers/growers African Americans; Latinos); develop indices to document overall awareness; for the baseline assessment this includes awareness of four laws: legal age and place of use; knowledge of laws prohibiting out of state transport and awareness that there are penalties for driving under the influence. Compare these data over time across multiple surveys; Compare findings among different demographic groups as appropriate and other possible confounders and for exposure to other non-RMEP campaigns.	Not generalizable to entire population	2014, 2015, 2016, 2017; Bull

4. Knowledge of risks related to retail Marijuana use in Colorado						
To what extent does the RMEP campaign help to increase the general public's (age 21 and older) accurate knowledge of the risks associated with retail marijuana use?	Health risks associated with: a. weekly and daily marijuana use for adults; teens; b. Frequent or regular use among pregnant women; breastfeeding women c. extracting hash oil in the home; d. consumption of multiple servings of edible marijuana; and e. storage of marijuana in homes where there are children; Awareness of RMEP Campaign elements Awareness of other non-RMEP campaigns	Sample of >900 Colorado Adults aged 21 and older.	Self-administered survey with telephone interviewer administered follow up. (*See items 14-15 on the Mixed-Mode Survey*)	Calculate percent of answers to questions overall and by subgroups within sample (e.g. <age 25; marijuana users; African Americans; Latinos); develop indices to document overall awareness; for the baseline assessment this includes awareness of four laws: legal age and place of use; knowledge of laws prohibiting out of state transport and awareness that there are penalties for driving under the influence. Compare these data over time across multiple surveys; Compare findings among different demographic groups as appropriate and other possible confounders and for exposure to other non-RMEP campaigns..	Potentially low return rates Not generalizable to entire population	2014, 2015, 2016, 2017; Levinson
To what extent does the RMEP campaign help to increase the accurate knowledge of the risks associated with retail marijuana use among youth, pregnant women, clinicians, and	Health risks associated with: a. weekly and daily marijuana use for adults; teens;	Venue-day time probability sample of >500 clinicians, retailers, pregnant and/or breastfeeding women and youth.	Self-administered tablet survey using Research Electronic Data Capture (REDCap). (*See items 65-79 on survey for Clinicians; items 116-130 for retailers; items 62-76 for*	Calculate percent of answers to questions overall and by subgroups within sample (youth, pregnant women, clinicians, and retailers/growers; African Americans; Latinos); develop indices and scales to document overall awareness; for the baseline assessment this includes awareness of four laws: legal age and place of use; knowledge of laws	Not generalizable to entire population	2014, 2015, 2016, 2017; Bull

retailers/growers?	b. Frequent or regular use among pregnant women; breastfeeding women c. extracting hash oil in the home; d. consumption of multiple servings of edible marijuana; and e. storage of marijuana in homes where there are children; Awareness of RMEP Campaign elements; Awareness of other non-RMEP campaigns	*pregnant/BF women; and items 49-63 for youth*).	prohibiting out of state transport and awareness that there are penalties for driving under the influence. Compare these data over time across multiple surveys; Control for demographic characteristics and other possible confounders and for exposure to other non-RMEP campaigns.

To what extent do specific groups understand health risks associated with retail marijuana use?	Health risks associated with: a. “regular” marijuana use for adults; teens (note regular use is not consistently defined or agreed upon); b. Frequent or regular use among pregnant women; breastfeeding women c. extracting hash oil in the home; d. consumption of multiple servings of edible marijuana; and e. storage of marijuana in homes where there are children.	Data from multiple secondary sources, e.g. Pregnancy Risk Assessment and Monitoring Survey (PRAMS), Youth Risk Behavior Surveillance (YRBS), Behavioral Risk Factor Surveillance Survey.	Abstraction from publicly available data sets.	Calculate answers to questions overall and by subgroups within samples (youth, pregnant women, clinicians, and retailers/growers; African Americans; Latinos); develop indices and scales to document overall awareness; for the baseline assessment this includes awareness of four laws: legal age and place of use; knowledge of laws prohibiting out of state transport and awareness that there are penalties for driving under the influence. Compare these data over time across multiple surveys; Control for demographic characteristics and other possible confounders.	No data on exposure to RMEP campaigns, so cannot make causal inferences from data on relationships between exposure to RMEP campaign and change in understanding over time. Not generalizable to entire population	2014 (CDPHE) 2015; 2016; 2017
5. Marijuana behaviors						
What is the relationship between exposure to RMEP Campaign	Use of marijuana	Sample of >900 Colorado	Self-administered survey with telephone interviewer	Calculate use and frequency of use overall and by subgroups within sample (e.g. <age 25; marijuana	Potentially low return rates	2014, 2015, 2016, 2017; Levinson

elements and use of marijuana among the general population (age 21 and older) in Colorado?	Frequency of use in 30 days Awareness of RMEP Campaign elements; Awareness of other non-RMEP campaigns	Adults aged 21 and older.	administered follow up. (*Note: on the baseline survey we do not assess awareness of RMEP since it hasn't yet been implemented. We will explore use with items PU1-PU10 on the mixed-mode survey*).	users; African Americans; Latinos); develop indices and scales to document overall awareness; for the baseline assessment this includes awareness of four laws: legal age and place of use; knowledge of laws prohibiting out of state transport and awareness that there are penalties for driving under the influence. Compare these data over time across multiple surveys; Control for demographic characteristics and other possible confounders and for exposure to other non-RMEP campaigns;	Not generalizable to entire population	
What is the relationship between exposure to RMEP Campaign elements and use of marijuana among high-risk populations in Colorado?	Use of marijuana Frequency of use in 30 days.	Venue-day time probability sample of >500 clinicians, retailers, pregnant and/or breastfeeding women and youth.	Self-administered tablet survey using Research Electronic Data Capture (REDCap). *(Note: on the baseline survey we do not assess awareness of RMEP since it hasn't yet been implemented. We will explore use with items 10a-10h on the clinician survey; 25-27 on retailer survey; 21-27 and 31-35 pregnant/BF women survey; and 71-82 on youth survey).*	Calculate use and frequency of use overall and by subgroups within sample (youth, pregnant women, clinicians, and retailers/growers; African Americans; Latinos; clinicians; pregnant women); develop indices and scales to document overall awareness; for the baseline assessment this includes awareness of four laws: legal age and place of use; knowledge of laws prohibiting out of state transport and awareness that there are penalties for driving under the influence. Compare these data over time across multiple surveys; Control for demographic characteristics and other possible confounders.	Not generalizable to entire population.	2014, 2015, 2016, 2017; Bull
What is the relationship between exposure to RMEP Campaign elements and illegal marijuana behavior among high-risk populations in Colorado?	Underage use; Purchasing for marijuana for a minor; having more than the legal amount; smoking in public; transporting marijuana across state lines; limiting access to marijuana for those under 21;	Venue-day time probability sample of 500 youth and adult Coloradoans.	Self-administered tablet survey using Research Electronic Data Capture (REDCap). (*We will explore Youth behavior using items 71-83 from the youth survey; items 25-27 on retailer survey; 21-27 and 31-35 on the Pregnant/BF survey).*	Calculate percent who perform each behavior overall and by subgroups within sample (youth, pregnant women, clinicians, and retailers/growers; African Americans; Latinos; clinicians; pregnant women); develop indices and scales to document overall awareness; for the baseline assessment this includes awareness of four laws: legal age and place of use; knowledge of laws prohibiting out of state transport and awareness that there are	Not generalizable to entire population.	2014, 2015, 2016, 2017; Bull

				penalties for driving under the influence. Compare these data over time across multiple surveys; Control for demographic characteristics and other possible confounders;		
To what extent do specific groups use marijuana?	Use of marijuana Frequency of use in 30 days.	Data from multiple secondary sources, e.g. Pregnancy Risk Assessment and Monitoring Survey (PRAMS), Youth Risk Behavior Surveillance (YRBS), Behavioral Risk Factor Surveillance Survey.	Abstraction from publicly available data sets.	Calculate answers to questions overall and by subgroups within samples (youth, pregnant women, clinicians, and retailers/growers; African Americans; Latinos); develop indices and scales to document overall awareness; for the baseline assessment this includes awareness of four laws: legal age and place of use; knowledge of laws prohibiting out of state transport and awareness that there are penalties for driving under the influence. Compare these data over time across multiple surveys. Control for demographic characteristics and other possible confounders	No data on exposure to RMEP campaigns, so cannot make causal inferences from data on relationships between exposure to RMEP campaign and change in behavior over time. Not generalizable to entire population	2014 (CDPHE) 2015; 2016; 2017
To what extent do specific groups engage in illegal marijuana behavior?	Underage use	Data from multiple secondary sources, e.g. Pregnancy Risk Assessment and Monitoring Survey (PRAMS), Youth Risk Behavior Surveillance (YRBS), Behavioral Risk Factor Surveillance Survey.	Abstraction from publicly available data sets.	Calculate answers to questions overall and by subgroups within samples (youth, African Americans; Latinos); Compare these data over time across multiple surveys; Control for demographic characteristics and other ossible confounders.	No data on exposure to RMEP campaigns, so cannot make causal inferences from data on relationships between exposure to RMEP campaign and change in behavior over time. Not generalizable to entire population	2014 (CDPHE) 2015; 2016; 2017

6. Effectiveness of trainings						
To what extent did participating in CDPHE regional trainings increase attendees utilization of underage marijuana prevention strategies?	1. Training details (# of trainings, attendee affiliation, purpose of agency, participant needs). 2. Materials distributed; participant's satisfaction and perceived usefulness of training & materials, additional need for information. 3. Self-reported utilization/ implementation of training materials/information by participants after event.	Self-report data drawn from attendees of 5 regional trainings that are geared towards CO organizations working with at risk youth.	1. Regional Training Event Log; 2. Initial Training Questionnaire; 3. Post-Regional Training Survey.	1. Analysis from the *Regional Training Event Log* and *Initial Training Questionnaire* will be descriptive in nature and detail attendee characteristics; marijuana prevention education needs; current use of marijuana prevention activities; the material/information they received at the trainings; their satisfaction and perceived utility with the training information. -Means/percents from Likert-type questions will capture attendee satisfaction/utility. 2. Analysis of the *Post-Regional Training Survey* will be descriptive in nature and document how the training material/information was implemented. -Examine initial and post-training responses to determine the change in marijuana youth prevention activities after training.	Self-report data prone to multiple response biases. 3-4 trainings will be held in late Spring/early summer leaving little time to capture post-training data; this will limit participant's ability to incorporate training material into their program and the numbers of individuals with follow-up data. *Regional trainings are still being planned and this initial evaluation plan may need to be modified as necessary*.	1 & 2. Dates;Brooks). 4. 3-4 weeks post-training; Brooks

7. Effectiveness of technical assistance (TA)						
What marijuana education & prevention information is needed by TA requestors/users?	1. Requestors' affiliation information (agency, purpose of agency). 2. Requestors' needs at outset.	Self-report data drawn from user's of the CDPHE Technical Assistance service. The TA service is geared towards those working the public (e.g., public health agencies, educational setting, regulatory organizations) rather than individuals.	Baseline TA Questionnaire issued via the FreshDesk platform auto distribution or data collected by TA Lead for requests that come in-person or phone calls.	1. Descriptives of TA requestor and requestor needs pulled from Baseline TA Questionnaire.	Non-comparative, non-inferential design. Not generalizable to entire population.	Nov. 1, 2014 - ongoing (Elizabeth, Erin).
Were TA requestors satisfied with TA services and should other types of materials be developed by CDPHE for distribution?	1. Requestors satisfaction and perceived usefulness ratings. 2. Additional request for material/information.	Same as above	1. Initial FU TA Survey – issues via FreshDesk/SurveyMonkey.	1. Descriptives of TA information received. 2. Means/percents from Likert-type questions will capture attendee satisfaction/utility of information.	Potentially low return rates. Little time to implement the use of new information.	1. Nov 1, 2014 –ongoing (auto distribution). 2. Nov 1, 2014 – ongoing (Student/Eliz) .
To what extent did CDPHE's TA increase users' utilization of marijuana educational and prevention information?	Utilization/ implementation of TA information/resources by requestors after TA.	Same as above	1. Initial FU TA Survey - FreshDesk/SurveyMonkey. 2. 2-mth FU TA Survey - Survey Monkey.	1. Examine initial and FU survey responses to determine the change in marijuana education /prevention activities over time.	Potentially low return rates. May have low numbers of individuals eligible for 2-month FU.	1. Nov 1, 2014 –ongoing (auto distribution). 2. Nov 1, 2014 – ongoing (Student/Eliz).

8. Collaboration across state agencies						
To what extent are state agencies working together regarding marijuana education and prevention efforts?	Detailed list of collaboration activities and collaboration frequency.	1. Data collected on an ongoing basis by CDPHE's Substance Use Prevention Coordinator . 2. Self-report data by collaborating agencies (includes CO Dept. of Education CO Dept. of Human Services CO Dept. of Law CO Dept. of Public Safety CO Dept. of Revenue CO Dept. of Transportation Governor's Office CO Dept. of HCPF Others as requested).	1. Collaboration Event Log of recent activities; 2. Advisory Group Meetings Event Log; 3. Agency Interviews.	1. Descriptives of collaboration activities pulled from Monthly Event Log, Advisory Group Meetings Event Log, and Agency Interviews (what activities are occurring, frequency of occurrence, participation in meetings).	Non-comparative, non-analytical design; Not generalizable; Biases in data recall and responses.	1. Nov 1, 2014 –ongoing – (CDPHE/ Rebecca Hebner) 2. Nov 7 – ongoing – (Stephanie Cross)
What has been the nature of the collaboration relationship?	Agency reports of the benefits of, problems with, and ways to increase collaboration.	2. Self-report data by collaborating agencies (listed above).	Agency Interviews	2. Means/percents from Likert-type questions will capture agencies satisfaction/utility/benefit/problems associated with collaboration.	Same as above	Mar 1-Mar 15, 2015 – (Student/Eliz)

9. Message integration across state agencies						
What marijuana messaging efforts are being conducted by state agencies?	Detailed list of current marijuana messaging efforts.	Data collected from the CSPH using a structured data collection instrument on an ongoing basis. Data will be located by several means including, but not limited to, internet searches, requests to govt and community agencies, Governor's office.	1. Media Scan Data Collection Tool; 2. Agency Interviews; 3. Advisory Group Meetings Event Log.	1. Descriptives of messaging activities (tagline, focus area, message frequency, outlet, medium, call to action).	Non-comparative, non-analytical design; Not generalizable; Data not located in central location so some information may be missing.	1. Nov 1, 2014 - ongoing - (Student/Eliz). 2. Mar 1-Mar 15, 2015 – (Student/Eliz). 3. Nov 7 – ongoing - (Stephanie).
Are messaging efforts aligned among organizations?	Analysis of message alignment.	Same as above	Same as above	Degree of message alignment with the Office of Marijuana Coordination Communication Plan (results descriptive in nature). Overlap in messages b/w state agencies (results descriptive in nature).	Same as above	1. Nov 1, 2014 - ongoing - (Student/Eliz). 2. Mar 1-Mar 15, 2015 – (Student/Eliz). 3. Nov 7 – ongoing - (Stephanie).

Evaluation Implementation - Goal 1

The distal objectives for Goal 1, to assess the effectiveness of CDPHE's marijuana prevention and education campaign and website are listed here. We further identify the extent to which the objectives have been met (partially, completely, not yet achieved):

- **Distal Objective 1**: Demonstrate integration of multiple and diverse perspectives on the evaluation campaign activities by community leaders and government advisors. This objective has been met. We describe the process below of convening several focus group discussions and an Evaluation advisory board to review the evaluation plan and specifically offer feedback on survey instruments.
- **Distal Objective 2**: Provide documentation of knowledge of marijuana laws and health risks associated with use across a sample of adult Coloradoans in the fall of 2014 compared to changes in the same through annual assessments in 2015, 2016 and 2017. This objective has been partially met. We have designed and implemented a survey of a sample of adult Coloradans in the fall of 2014 to establish the baseline documentation of knowledge of marijuana laws and health risks associated with use. The analysis of these baseline data are included in this report, and repeat surveys to assess changes in knowledge over time in 2016 and 2017, contingent upon contract renewals.
- **Distal Objective 3**: Provide documentation of knowledge of marijuana laws and health risks associated with use across a probability sample of adult Coloradans representing key audience groups, marijuana retailers and growers in the fall of 2014 compared to changes in the same though annual assessments in 2015, 2016, and 2017. This is partially achieved. We have developed instruments and survey protocols and implemented a baseline assessment of knowledge of marijuana laws and health risks associated with use across a probability sample of adult Coloradoans representing key audience groups, marijuana retailers and growers in the fall of 2014. We report on these findings in this report. We will conduct ongoing assessments and analyses in 2015, 2016, and 2017 contingent upon contract renewals.
- **Distal Objective 4**: Provide documentation of attitudes and behaviors towards use among across a probability sample of adult Coloradoans representing at-risk groups, marijuana retailers and growers in the Fall of 2014 compared to changes in the same through annual assessments in 2015, 2016 and 2017. This is partially achieved. We have developed instruments and survey protocols and implemented a baseline assessment of knowledge of marijuana laws and health risks associated with use across a probability sample of adult Coloradoans representing key audiences, marijuana retailers and growers in the fall of 2014. We report on these findings in this report. We will conduct ongoing assessments and analyses in 2015, 2016, and 2017 contingent upon contract renewals.
- **Distal Objective 5**: Provide documentation of exposure to any marijuana campaign in Colorado among samples in 2014, 2015, 2016 and 2017. This is partially achieved. We have developed instruments and survey protocols and implemented a baseline assessment of knowledge of marijuana laws and health risks associated with use across both samples of adult Coloradoans as well as those representing key audience groups, marijuana retailers and growers in the fall of 2014. We report on the findings from the probability sample in this report. We will conduct ongoing assessments and analyses in 2015, 2016, and 2017 contingent upon contract renewals.
- **Distal Objective 6**: Provide documentation of any relationship between exposure to marijuana education and prevention campaigns and changes in knowledge, attitudes and practices across all samples over time. This objective is not yet met. We must have follow-up data to use to compare to

the baseline data from 2014 before this can be achieved.

- **Distal Objective 7**: Review data from multiple secondary sources to assess the relationship between knowledge of, attitudes towards and use of recreational marijuana. This analysis has been completed by Lisa Barker from CDPHE and is reported in the *Monitoring Health Concerns Related to Marijuana in Colorado: 2014* report for the baseline. We will conduct these analyses in 2015, 2016 and 2017 contingent upon contract renewals.

The proximal objectives for **Distal Objective 1**: To demonstrate integration of multiple and diverse perspectives on the evaluation campaign activities by community leaders and government advisors include:

- **Proximal Objective 1**: By September 30, 2014, invite potential members of a Retail Marijuana Education and Prevention Campaign Advisory Group to submit applications to be on the group. This objective has been met.
- **Proximal Objective 2**: By October 15, 2014, invite participation of the first members of a Retail Marijuana Education and Prevention Campaign Advisory Group to commit to a one-year term to meet quarterly to review evaluation progress, tasks and outcomes. This objective has been met.
- **Proximal Objective 3**: By October 31, 2014, hold the first meeting with Retail Marijuana Education and Prevention Campaign Advisory Group to review evaluation progress, tasks and outcomes. This objective has been met.
- **Proximal Objective 4**: Each quarter starting in January 2015 through June 2017, convene the Retail Marijuana Education and Prevention Campaign Advisory Group to review evaluation progress, tasks and outcomes. This objective is ongoing.
- **Proximal Objective 5**: Each year in 2015 and 2016, invite new members to participate in the Retail Marijuana Education and Prevention Campaign Advisory Group to review evaluation progress, tasks and outcomes. This objective is ongoing.

The proximal objectives for **Distal Objective 2**: Provide documentation of knowledge of marijuana laws and health risks associated with use across a sample of adult Coloradoans in the Fall of 2014 compared to changes in the same through annual assessments in 2015, 2016 and 2017 include:

- **Proximal Objective 1**: By October 1, 2014, create a survey with items to document knowledge of Colorado retail marijuana laws and knowledge of health risks associated with recreational marijuana use, including but not limited to the items identified here. This objective has been met. The survey instruments can be found in the appendix**:**
    - Perceptions and attitudes toward engaging in use of marijuana across the state, including:
        - Marijuana use during pregnancy or while breastfeeding;
        - Underage use of marijuana;
        - Overconsumption of marijuana-infused products (edibles);
        - Secondhand marijuana smoke exposure;
        - Unsafe storage of marijuana products in the home;
        - Public use of marijuana products; and
        - Dangerous hash oil extractions.

- **Proximal Objective 2**: By October 15, 2014, conduct cognitive assessments on survey measures. This objective has been met. We report on these assessments in the section entitled "pilot testing" below.
- **Proximal Objective 3**: By October 15, 2014 and again in April 2015, 2016 and 2017, complete a sampling frame of Coloradans. This objective has been met for the October 2014 deadline. The sample is described in the section below entitled "Evaluation findings: mixed-mode survey."
- **Proximal Objective 4**: By November 1, 2014, and again by April 30, 2015, 2016 and 2017 complete the first mailing of a survey to document knowledge of marijuana laws and health risks associated with use to a sample of adult Coloradoans. This objective has been met for the November 2014 deadline. The data collection is described in the section below entitled "Evaluation findings: mixed-mode survey."
- **Proximal Objective 5**: By November 14, 2014, and again by May 15, 2015, 2016 and 2017 complete the second mailing of a survey to document knowledge of marijuana laws and health risks associated with use to a sample of adult Coloradans. This objective has been met for the November 2014 deadline. The data collection is described in the section below entitled "Evaluation findings: mixed-mode survey."
- **Proximal Objective 6**: By December 31, 2014, and again by May 30, 2015, 2016 and 2017, complete the telephone follow-up of a survey to document knowledge of marijuana laws and health risks associated with use to a sample of adult Coloradans. This objective has been met for the October 2014 deadline. The data collection is described in the section below entitled "Evaluation findings: mixed-mode survey." We anticipate that the May 30, 2015 deadline for this objective will be revised to a July 2015 deadline based on when the educational campaigns are released.
- **Proximal Objective 7**: By January 15, 2015, and again by June 15, 2015, 2016 and 2017 complete analyses to document knowledge of marijuana laws and health risks associated with use to a sample of adult Coloradans. This objective has been partially met for the January 2015 deadline. The plans to weight data and complete analyses are described in section below entitled "Evaluation findings: mixed-mode survey."

The proximal objectives for **Distal Objective 3**: Provide documentation of knowledge of marijuana laws and health risks associated with use across a probability sample of adult Coloradans representing key audience groups, marijuana retailers and growers in the Fall of 2014 compared to changes in the same though annual assessments in 2015, 2016, and 2017 include:

- **Proximal Objective 1**: By October 1, 2014, create a survey with items to document knowledge of Colorado retail marijuana laws and knowledge of health risks associated with recreational marijuana use including but not limited to the items identified here. This objective has been met. The survey instruments can be found in the appendix**:**
    - Perceptions and attitudes toward engaging in use of marijuana across the state, including:
        - Marijuana use during pregnancy or while breastfeeding;
        - Underage use of marijuana;
        - Overconsumption of marijuana-infused products (edibles);
        - Secondhand marijuana smoke exposure;
        - Unsafe storage of marijuana products in the home;

- Public use of marijuana products; and
- Dangerous hash oil extractions.

- **Proximal Objective 2**: By October 15, 2014, conduct cognitive assessments on survey measures. This objective has been met. We report on these assessments in the section entitled "pilot testing" below.
- **Proximal Objective 3**: By October 15, 2014, and again by April 2015, 2016 and 2017 complete sampling frame of venue day time increments in geographically diverse regions of the state to generate a probability sample. This objective has been met for the October 2014 sample. We report on these assessments in the section entitled "Evaluation findings: Venue-day-time survey" below. We will repeat the sampling procedure for surveys in 2015, 2016 and 2017 pending contractual agreements. Dates will be revised based on changes in implementation of the educational campaigns targeting these populations.
- **Proximal Objective 4**: By December 31, 2014, and again by May 31 2015, 2016 and 2017 complete data collection among a probability sample of 500 adult Coloradans to document knowledge of marijuana laws and health risks associated with use. This objective has been met for the November 2014 deadline. We report on these assessments in the section entitled "Evaluation findings: Venue-day-time survey" below. We will repeat the data collection for surveys in 2015, 2016 and 2017 pending contractual agreements. Dates will be revised based on changes in implementation of the educational campaigns targeting these populations.
- **Proximal Objective 5**: By January 15, 2015, and again by June 15, 2015, 2016 and 2017 complete analyses to document knowledge of marijuana laws and health risks associated with use among a probability sample of 500 adult Coloradans. This objective has been met for the January 2015 deadline. We report on these assessments in the section entitled "Evaluation findings: Venue-day-time survey" below. We will repeat the data collection for surveys in 2015, 2016 and 2017 pending contractual agreements. Dates will be revised based on changes in implementation of the educational campaigns targeting these populations.

The proximal objectives for **Distal Objective 4**: Provide documentation of attitudes and behaviors towards use among across a probability sample of adult Coloradoans representing key audience groups, marijuana retailers and growers in the Fall of 2014 compared to changes in the same through annual assessments in 2015, 2016 and 2017 include:

- **Proximal Objective 1**: By October 1, 2014, create a survey with items to document knowledge of Colorado retail marijuana laws and knowledge of health risks associated with recreational marijuana use. This objective has been met. The survey instruments can be found in the appendix.
- **Proximal Objective 2**: By October 15, 2014, conduct cognitive assessments on survey measures. This objective has been met. We report on these assessments in the section entitled "pilot testing" below.
- **Proximal Objective 3**: By October 15, 2014, and again by April 2015, 2016 and 2017, complete sampling frame of venue-day-time increments in geographically diverse regions of the state to generate a probability sample. This objective has been met for the October 2014 sample. We report on these assessments in the section entitled "Evaluation findings: Venue-day-time survey" below.

We will repeat the sampling procedure for surveys in 2015, 2016 and 2017 pending contractual agreements. Dates will be revised based on changes in implementation of the educational campaigns targeting these populations.

- **Proximal Objective 4**: By December 31, 2014, and again by May 30, 2015, 2016 and 2017, complete data collection among a probability sample of 500 adult Coloradoans to document attitudes towards and use of retail marijuana. This objective has been met for the December 2014 deadline. We report on these assessments in the section entitled "Evaluation findings: Venue-day-time survey" below. We will repeat the data collection for surveys in 2015, 2016 and 2017 pending contractual agreements. Dates will be revised based on changes in implementation of the educational campaigns targeting these populations.
- **Proximal Objective 5**: By January 15, 2015, and again by June 15, 2015, 2016 and 2017 complete analyses to document attitudes towards and use of retail marijuana among a probability sample of 500 adult Coloradoans. This objective has been met for the January 2015 deadline. We report on these assessments in the section entitled "Evaluation findings: Venue-day-time survey" below. We will repeat the data collection for surveys in 2015, 2016 and 2017 pending contractual agreements. Dates will be revised based on changes in implementation of the educational campaigns targeting these populations.

The proximal objectives for **Distal Objective 5**: Provide documentation of exposure to any marijuana campaign in Colorado among samples in 2014, 2015, 2016 and 2017 include all those associated with Distal Objectives 2, 3 and 4. Additionally, they include:

- **Proximal Objective 1**: By October 1, 2014, create a survey with items to document awareness of Marijuana campaigns, including but not limited to those listed here. This objective has been met. The survey instruments can be found in the appendix:
    - CDPHE supported Retail Marijuana Education and Prevention Campaign;
    - Department of Transportation, "Drive High, Get a DUI" marijuana-impaired driving;
    - Governor's Office, CDPHE and CBS, "Did you Know" campaign promoting Colorado.gov/marijuana
    - Governor's Office of Marijuana Coordination, "Don't Be a Lab Rat" youth prevention;
    - Department of Human Services, "Speak Now" parent-focused campaign;
- **Proximal Objective 2**: By October 15, 2014, conduct cognitive assessments on survey measures. We report on these assessments in the section entitled "pilot testing" below.
- **Proximal Objective 3**: By November 30, 2014, and again by May 31 2015, 2016 and 2017 complete data collection among samples to document exposure to campaigns. This objective has been met for the December 2014 deadline. We report on these assessments in the section entitled "Evaluation findings: Mixed-mode and Venue-day-time surveys" below. We will repeat the data collection for surveys in 2015, 2016 and 2017 pending contractual agreements. Dates will be revised based on changes in implementation of the educational campaigns targeting these populations.
- **Proximal Objective 4**: By January 15, 2015, and again by June 15, 2015, 2016 and 2017 complete analyses to document associations between knowledge of marijuana laws and health risks associated with use and exposure to campaigns among samples. We report on these assessments in the section entitled "Evaluation findings: Mixed-mode and Venue-day-time surveys" below. We will

repeat the data collection for surveys in 2015, 2016 and 2017 pending contractual agreements. Dates will be revised based on changes in implementation of the educational campaigns targeting these populations.

The proximal objectives for **Distal Objective 6**: Provide documentation of any relationship between exposure to marijuana education and prevention campaigns and changes in knowledge, attitudes and practices across all samples over time include all those associated with Distal Objectives 2, 3, 4 and 5. Additionally they include:

- **Proximal Objective 1**: By December 15, 2014, June 15, 2015, 2016 and 2017 clean all survey data and store in an evaluation database. This objective has been met for the December 2014 deadline.
- **Proximal Objective 2**: By January 15, 2015, June 15, 2015, 2016 and 2017 complete all analyses to document knowledge, attitudes and behaviors among all survey participants. This objective has been met for the January deadline for the community VDT sample. Analyses are ongoing for the mixed-mode survey.
- **Proximal Objective 3**: By January 30, 2015, June 30, 2015, 2016 and 2017 produce reports documenting relationship between exposure to marijuana education and prevention campaigns and changes in knowledge, attitudes and practices across all samples. This objective is partially met. We cannot document changes in knowledge or attitudes until we have completed follow-up surveys.

The proximal objectives for **Distal Objective 7**: Review data from multiple secondary sources to assess the relationship between knowledge of, attitudes towards and use of recreational marijuana include the following. All initial secondary data reviews have been conducted by a third party at CDPHE. We have not yet seen these findings:

- **Proximal Objective 1**: By November 15, 2014, 2015 and 2016 identify appropriate data sources to use for secondary data analysis.
- **Proximal Objective 2**: By January 15, 2015, 2016 and 2017 finalize all analysis plans to document knowledge, attitudes and behaviors among participants in surveys included in secondary analysis.
- **Proximal Objective 3**: By May 15, 2015, 2016 and 2017 complete all analyses to document knowledge, attitudes and behaviors among participants in surveys included in secondary analysis.

Evaluation Implementation - Goal 2

The distal objectives related to Goal 2, to assess the effectiveness of regional trainings, technical assistance, system-level collaborations, and integration of campaign messaging across state agencies or stakeholders are to demonstrate the objectives listed here. Note that many of the activities planned for Goal 2 have not yet taken place. We document where we have completed distal and proximal objectives related to this goal:

- **Distal Objective 1**: Document the distribution of marijuana prevention and educational resources and information distributed via regional trainings and technical assistance to a variety of stakeholders in the State of Colorado in 2015, 2016 and 2017.
- **Distal Objective 2**: Assess the utility and implementation of prevention and educational resources and information distributed via regional trainings and technical assistance to a variety of

stakeholders in the State of Colorado in 2015, 2016 and 2017.

- **Distal Objective 3**: Document collaboration of marijuana prevention and education activities across state agencies on in 2015, 2016 and 2017.
- **Distal Objective 4**: Document the alignment of marijuana education and prevention campaign messaging across stage agencies in 2015, 2016 and 2017.

The strategies we will use to achieve Goal 2, to assess the effectiveness of regional trainings, technical assistance, system-level collaborations, and integration of campaign messaging across state agencies or stakeholders, include a combination of qualitative and quantitative interviews and surveys, reporting, and observations.

The proximal objectives to achieve **Distal Objective 1**: Document the distribution of marijuana prevention and educational resources and information distributed via regional trainings and technical assistance to a variety of stakeholders in the State of Colorado in 2015, 2016 and 2017 include:

- **Proximal Objective 1:** By Nov. 20, 2014, create a Regional Training Event Log to capture the training information (agenda, materials distributed) at each session. This has been created and is included in the appendix.
- **Proximal Objective 2:** By Oct. 31, 2014, create an online reporting system for CDPHE to identify all agency needs and background information for those requesting technical assistance related to the Retail Marijuana Education and Prevention Campaign (i.e., Baseline TA Questionnaire). This objective is complete.
- **Proximal Objective 3:** Document regional training attendees' information and material distribution at each of the 5 training events. The activities completed are reported in the section on Evaluation findings: Training and Technical Assistance in this report.
- **Proximal Objective 4:** By Nov. 1, 2014, begin data collection to document technical assistance requestors' background and needs. The activities completed are reported in the section on Evaluation findings: Training and Technical Assistance in this report.

The proximal objectives to achieve **Distal Objective 2**: Assess the utility and implementation of prevention and educational resources and information distributed via regional trainings and technical assistance to a variety of stakeholders in the State of Colorado in 2015, 2016 and 2017 include:

- **Proximal Objective 1:** By Nov. 20, 2014, create and have ready to distribute an *Initial Regional Training Questionnaire* to capture regional training attendee' information (professional affiliation, needs, and contact information) and impression of training usefulness at each session. All data collection instruments are included in the appendix to this report. The activities completed are reported in the section on Evaluation findings: Training and Technical Assistance in this report.
- **Proximal Objective 2**: By Nov. 20, 2014, create and have ready to distribute a *Post-Regional Training Survey* to assess the implementation of regional training information by attendees approximately 2 months post-trainings. All data collection instruments are included in the appendix to this report. The activities completed are reported in the section on Evaluation findings: Training and Technical Assistance in this report.
- **Proximal Objective 3**: By Oct. 31, 2014, create and have ready to distribute an *Initial Follow-Up*

Technical Assistance Survey to assess the utility, satisfaction, and implementation of technical assistance information by those who requested Retail Marijuana Education and Prevention Campaign services approximately 2-3 weeks post-TA. All data collection instruments are included in the appendix to this report. The activities completed are reported in the section on Evaluation findings: Training and Technical Assistance in this report.

- **Proximal Objective 4**: By Nov. 10, 2014, create a *2-Month Follow-Up Technical Assistance Survey* to assess the implementation of technical assistance information by those who requested Retail Marijuana Education and Prevention Campaign services approximately 2 months post-TA. All data collection instruments are included in the appendix to this report. The activities completed are reported in the section on Evaluation findings: Training and Technical Assistance in this report.
- **Proximal Objective 5**: Two-month post Regional training, survey attendee's use of training information (dates TBD). The activities completed are reported in the section on Evaluation findings: Training and Technical Assistance in this report.
- **Proximal Objective 6**: By Nov. 14, 2014, begin data collection of TA requestors' initial satisfaction and use of information; by Dec. 1, 2014, begin 2-month follow up of TA requestors' use of information. The activities completed are reported in the section on Evaluation findings: Training and Technical Assistance in this report.
- **Proximal Objective 7**: By Jan. 10, 2015, complete *Process Report* to document procedures used for regional trainings and technical assistance evaluation; by May 10 (2015, 2016, 2017) complete analysis and produce *Project Reports* summarizing findings from the regional trainings and technical assistance with an emphasis on describing the extent to which the distributed information was appropriate for and utilized by agencies. The activities completed are reported in the section on Evaluation findings: Training and Technical Assistance in this report.

The proximal objectives to achieve **Distal Objective 3**: Document collaboration of marijuana prevention and education activities across state agencies on in 2015, 2016 and 2017 include:

- **Proximal Objective 1**: By Oct. 31, 2014, create and have ready to distribute a *Collaboration Event Log* to capture weekly collaboration activities across state agencies during the period of Nov. 1, 2014 – Apr. 1, 2015. All data collection instruments are included in the appendix to this report. The activities completed are reported in the section on Evaluation findings: Training and Technical Assistance in this report.
- **Proximal Objective 2**: By Nov. 30, 2014, create and have ready to distribute an *Agency Interview* capturing collaborative activities, benefits of, problems with, and ideas to increase collaboration across state agencies during the period of Nov. 1, 2014 – Apr. 1, 2015. All data collection instruments are included in the appendix to this report. The activities completed are reported in the section on Evaluation findings: Training and Technical Assistance in this report.
- **Proximal Objective 3**: By Nov. 1, 2014, CDPHE begins weekly data collection to log collaborative activities across agencies; by Nov 10, 2014, begin logging collaboration activity at Advisory meetings; Mar. 1, 2015-Mar. 15, 2015 conduct interviews with state agencies to log collaborative activities and benefit/problem information. The activities completed are reported in the section on Evaluation findings: Training and Technical Assistance in this report.
- **Proximal Objective 4**: By Jan. 10, 2015, complete *Process Report* to document procedures used for

the collaboration effort evaluation; by May 10 (2015, 2016, 2017) complete analysis and produce *Project Reports* summarizing findings of the collaboration efforts with an emphasis on describing the extent to collaboration occurred across state agencies and benefits or problems that occurred as a result of collaborative activities. The activities completed are reported in the section on Evaluation findings: Training and Technical Assistance in this report.

The proximal objectives to achieve **Distal Objective 4**: Document the alignment of marijuana education and prevention campaign messaging across stage agencies in 2015, 2016 and 2017 include:

- **Proximal Objective 1**: By Oct. 31, 2014, develop *Media Scan Data Collection Tool*. All data collection instruments are included in the appendix to this report. The activities completed are reported in the section on Evaluation findings: Training and Technical Assistance in this report.
- **Proximal Objective 2**: By Nov. 1, 2014, begin media scan; Mar. 1, 2015-Mar 15, 2015 conduct interviews with state agencies to log additional media activities. The activities completed are reported in the section on Evaluation findings: Training and Technical Assistance in this report.
- **Proximal Objective 3**: By Jan. 10, 2015, complete *Project Report* that documents procedures used for media scan; by May 10 (2015, 2016, 2017) complete analysis an produce *Project Reports* summarizing findings from the media scan with an emphasis on describing the extent of alignment across education and prevention messages in the state of Colorado. The activities completed are reported in the section on Evaluation findings: Training and Technical Assistance in this report.

Measures/Instrument Development:

Baseline TA Questionnaire	Oct. 31, 2014
Initial Follow-Up TA Survey	Oct. 31, 2014
Collaboration Event Log	Oct. 31, 2014
Media Scan Data Collection Tool	Oct. 31, 2014
2-Month Follow-Up TA Survey	Nov. 10, 2014
Advisory Group Meetings Event Log	Nov. 10, 2014
Regional Training Event Log	Nov. 20, 2014
Initial Regional Training Questionnaire	Nov. 20, 2014
Post-Regional Training Survey	Nov. 20, 2014
Agency Interviews	Nov. 30, 2014

Pilot testing and community input on survey measures

Initial survey instruments were drafted using existing items from the Behavioral Risk Factor Surveillance System, the Youth Risk Behavioral Surveillance System, Monitoring the Future, and from surveys used in a research study by one of our project evaluators on medical marijuana funded by the National Institutes of Health. We held meetings with three groups to inform the further development of each of the evaluation instruments, including: (a) the general populations' survey, (b) the youth survey, (c) survey with pregnant and nursing women, and (d) the retailer/user questions. We tested proposed items by asking participants to read and answer the initial draft questionnaire. We talked through how participants determined their responses to help us identify confusing wording, unintended meanings, and gaps in questions. This testing resulted in several modifications to item wording and response options. It also led to the addition and

removal of questions. In summary, groups helped clarify questions, the wording of questions and the sequencing of questions. Following are some specific findings from these groups that led to adjustments in survey questions or inclusion of new items in the surveys.

Impaired driving: in the adult/user group we had a participant say 'sometimes you just have to drive [after smoking].' This led to inclusion of a specific question on surveys related to how long people felt they should wait after using marijuana to drive.

Storage: In the adult/user group there seemed to be a high level of sophistication about the laws around marijuana use and appreciation for the risks associated with some behaviors like edible dosing and hash oil. But one area where there seemed to be lack of concern was storage. This led to inclusion of specific questions on how and where storage occurs and to a specific question of whether participants live in homes with young children.

Pregnant or Breastfeeding women: We included questions on whether pregnant and breastfeeding women choose to or not to disclose past or ongoing marijuana use to their physician and if they use during pregnancy or while nursing, do they attempt any harm reduction (e.g., use less than normal, use in a different way, delay nursing and by how long). We also included a question on reasons for use other than recreation such as to reduce nausea related to morning sickness.

Youth: Findings from the youth focus groups led to inclusion of questions on how parents communicate about use and consequences for use. We also included questions about what consequences teens have faced related to marijuana use. We included the same items on perceptions of risk related to marijuana use for teens that we did for all other populations. Finally, we also included items to document how teens acquired marijuana.

Following this process, we met with CDPHE staff to finalize the multi-mode survey and VDT surveys prior to implementation in the field. We prioritized this activity prior to meeting with our Evaluation Advisory Board given the contracted timeline to collect data among a sample of adult Coloradans.

We held a one-day session with our Evaluation Advisory Workgroup, comprising Colorado Residents, clinicians, marijuana retailers, and representatives from state agencies. During this session we shared the draft evaluation instruments for each of the community surveys, i.e. the Clinician, Retailer/User, Pregnant/Breastfeeding women and Youth surveys. The Workgroup members offered further refinements to the evaluation process including suggestions for implementation to facilitate the development of trust between evaluators and participants. These included reinforcement of protocols to avoid collection of identifying information and securing data.

The primary domains covered in all the surveys include a) understanding of the laws related to marijuana in Colorado; b) perception of risks associated with marijuana use; c) exposure to and awareness of any educational campaigns related to marijuana use. The community VDT surveys further focused on specific domains including:

- Level of confidence in skills for counseling related to use (among clinicians);

- Whether and how retailers conveyed specific information about laws to clients (particularly those from out-of-state) and what safety practices they employed for hash oil extraction (among Retailers and Users);

- Whether and how they obtained information on marijuana use and risks from clinicians and whether they used marijuana during pregnancy or breastfeeding (among pregnant/breastfeeding women);

- Whether and how they obtained information on marijuana use and risks from parents, how they acquired marijuana and whether they used marijuana (among youth).

The final survey instruments are included in the appendix to this report. Specific items we will use for analysis in the realization of specific evaluation outcomes are listed in Table 2.

Focus Group Methods

Colorado School of Public Health Faculty has provided Cactus, the campaign contractor, with detailed technical assistance on Focus Group methodology. Specifically included in this technical assistance was detailed information on how to create a topic guide; how to effectively moderate a focus group discussion; and how to analyze focus group data using a content analysis methodology. Documents describing focus group methods and analysis are available in the appendix. We provided feedback to Cactus on their Focus Group Topic Guide in January 2015.

We also shared results from our own focus group discussions with members of the target audience for our community survey relevant for campaign development. These detailed findings are described in the section below on the methodology for development of the community venue-day-time survey.

Evaluation Findings: Mixed-Mode Survey

The evaluation included a mixed-mode survey on marijuana legal knowledge and attitudes/behaviors around marijuana access and use.

Sample design

Participants were a sample of respondents to The Attitudes and Behavior Survey (TABS) on Health, a periodic, population-level survey among Colorado adults. TABS on Health interviews adults (aged 18+) who are randomly selected from among all Colorado households with telephones, including cell-phone households since 2008). Households are selected for interview by sampling all Colorado telephone exchanges with at least one known residential telephone number. In 2012, TABS on Health respondents were invited to be available for future studies; 62% agreed (n=9267 of 14,998) and were enrolled in a survey research registry. Registry volunteers and decliners are similar in sex, prevalence of self-reported diabetes or high blood pressure, body mass index (BMI), and smoking status. Registry members are more likely than decliners to report high cholesterol (33.3% vs. 29.1%) or a mental illness diagnosis (13.2% vs. 8.9%); to be white (82.4% vs. 75.7%), aged 45-64 (43.3% vs. 35.2%), a college graduate (46.0% vs. 38.0%), or self-

identified gay, lesbian or bisexual (3.0% vs. 2.1%), and to have income at or above 200 percent of the federal poverty level (63.1% vs. 42.7%).

All currently active registry members at the time of sampling (n=8,670) were eligible for the mixed-mode marijuana survey. The selection process for the main sample oversampled certain population groups in order to obtain more precise information about them (age less than 35, racial and ethnic minority groups, and then-current marijuana users). The main sample consisted of 1,523 registry members. Participants were contacted first by mail and then by telephone to complete the survey.

After the main sample was drawn, all Registry members who preferred Spanish language contact were invited to participate via telephone in the same survey, translated into Spanish, except for media slogans that were read in English. A total of 186 were eligible to participate.

Instrument Development

In collaboration with CDPHE, the evaluation team created a survey with items measuring knowledge of Colorado retail marijuana laws and knowledge of health risks associated with recreational marijuana use.

Initial survey instruments were drafted using existing items from the Behavioral Risk Factor Surveillance System, the Youth Risk Behavioral Surveillance System, Monitoring the Future, and surveys used in a medical marijuana research study conducted by one of our project evaluators and funded by the National Institutes of Health. We cognitively tested all potential items among a diverse group of Colorado adults purposively composed of marijuana users and non-users; parents; a range of ages including young adults, adults in their middle years, and older adults; and diverse ethnicities. Participants read and answered the initial draft questionnaire, then described how they chose their responses, in order to identify confusing wording, unintended meanings, and gaps in questions. Items were revised, re-ordered, added and removed to address identified issues.

The final survey instrument (included in the Appendix) includes items in the following domains:

- Media Awareness
    - Exposure to ads or messages about marijuana
    - Recall of ads or messages about marijuana
    - Familiarity with marijuana-related slogans promoted in Colorado
- Knowledge of Marijuana Laws
    - Minimum age to buy recreational marijuana
    - Places where marijuana can be used
    - Limits of amount possessed for recreational marijuana
    - Limits of plants grown for recreational use
    - Liability to be ticketed for driving under the influence
    - Carrying or mailing marijuana out of state
- Perceptions of harm and attitudes toward use of marijuana, including:
    - Marijuana use during pregnancy or while breastfeeding;
    - Underage use of marijuana;
    - Over Consumption of marijuana-infused products (edibles);
    - Secondhand marijuana smoke exposure;

- Unsafe storage of marijuana products in the home;
- Public use of marijuana products; and
- Dangerous hash oil extractions.

Data Collection Procedures

Main sample participants included those with (n=1,371) and without (n=152) known mailing addresses. Advance postcards were sent to all with known addresses requesting updates to contact information via a toll free line or email address.

Mail

Participants with known mailing addresses were contacted first by mail in two waves during October-November 2014; each wave involved an initial mailed survey, cover letter, and an incentive of a $2 bill, followed 10 days later by a second mailed survey without an incentive to non-completers. Participants with a valid phone number who had not completed a survey by one week after the second mailed survey were contacted by telephone. The paper version of the survey is available in Appendix A.

Telephone

Telephone interviews were conducted between November 6th, 2014 and December 19th, 2014 using a Computer-Assisted Telephone Interview (CATI) system. The telephone script was programmed using Sawtooth Technologies, Inc.'s Sensus 6.0 software, and the same developer's WinCATI 6.0 software was used to manage the sample. Five interviewers attempted to contact participants during three calling periods (weekdays 9am – 4pm, weekdays 4pm – 8pm, and weekends 11am- 4pm), with an emphasis on evening and weekend times. Contact was attempted at least 8 times before a participant was classified as a non-responder. At least 2 attempts were made in each of the three calling periods, with the final 2 attempts occurring at any time. After completing the interviews, participants were mailed a $10 gift card to either Kroger or WalMart, according to respondents' preference.

Spanish-dominant participants were contacted using the same protocols from February 7th, 2015 to March 21st, 2015. The script was translated into Spanish using services provided by CDPHE. (Media slogans were read to participants in English). Two interviewers who are bilingual in Spanish and English attempted and completed the interviews. The English and Spanish scripts are included in the Appendix.

Weighting

Data were weighted in analysis to account for each participant's likelihood of being chosen for the marijuana survey (marijuana selection probability), with an adjustment for participants who were drawn into the sample but did not complete the survey (non-response adjustment), and standardization on sex, age, and ethnicity to resemble the Colorado 2012 population on these three characteristics. The final weights were calculated as

FINALWT = $W_{TABS} * W_{MJ\ SAMPLE} * W_{NONRESPONSE} * W_{STD}$, where

W_{TABS} = 1 / (TABS on Health selection probability)], adjusted for nonresponse and standardized on sex, age, ethnicity, education;

$W_{MJ\ SAMPLE}$ = 1/ marijuana selection probability,

$W_{NONRESPONSE}$ = 1/ marijuana survey response rate within sampling category,

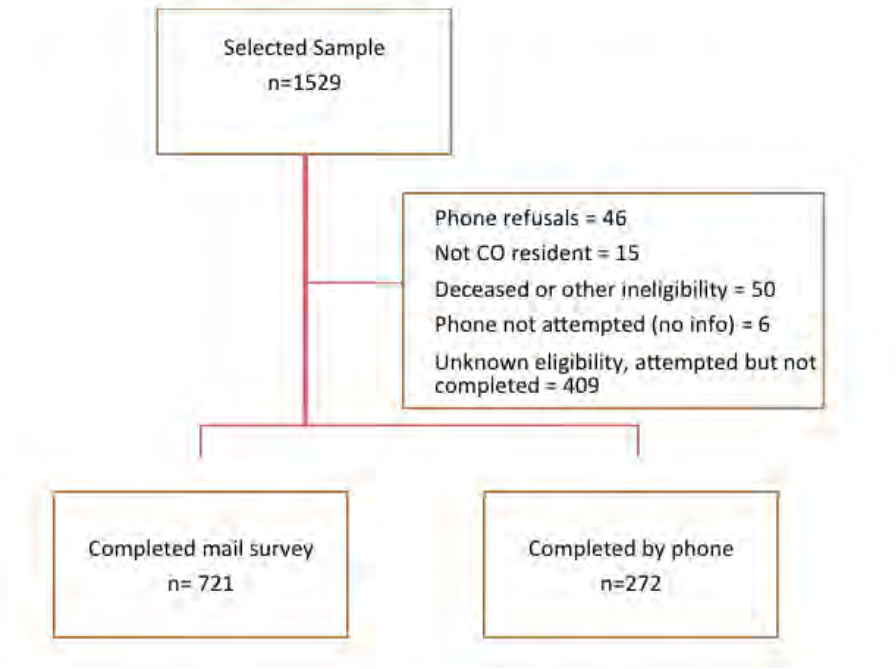
W_{STD} = adjustment on age, sex, race/ethnicity.

The W_{TABS} selection-probability component is a function of unequal stratified sampling from 1+ telephone exchanges; number of survey-eligible members in a selected household, and number of household landlines and participant's cell phones. The $W_{marijuanaSAMPLE}$ selection probability reflects two-stage sampling, because a previous survey (first stage) affected the chance of being chosen for the Mixed-Mode Survey (second stage). More specifically, anyone who completed the first-stage survey and reported current marijuana use at that time was chosen to participate in the second-stage Mixed-Mode survey (certainty selection). About two-thirds of mixed-mode survey participants completed the first-stage survey; the other third had unknown first-stage marijuana use status, and their likelihood of having been marijuana users at that time was estimated using rates of first-stage marijuana use among second-stage users and non-users. Total probability was computed separately for the four groups of survey participants—marijuana use at both stages, marijuana nonuse at both stages, and the two groups of mixed use-status across stages. The Spanish-language sample was not weighted.

Response Rate and Diagram

A total of 993 participants from the main sample completed surveys or interviews, adjusted for loss of eligibility (e.g., death since previous contact), for a response rate of 70% (Figure 3). A total of 47 participants from the Spanish language sample completed a telephone interview for a response rate of 51% (not shown).

Figure 3: Flow chart of main sample survey completes by mode and non-completes/ refusals



Data Analyses

All surveys returned by mail were visually checked for stray marks, notes in the margins, and other irregularities that affect scanning. Mail and telephone surveys were checked for duplicates, (e.g., two completed mail surveys or a completed mail and phone survey) and the earliest completed survey with complete or nearly complete data was retained. Next, the mail and telephone survey data were merged. Because of differences in the scanned and the telephone (CATI) datasets and minor differences in variable names, variables were modified for one or both of the datasets to make the datasets compatible. Data were checked for inconsistencies and out of range values; however, these values are retained in the final dataset. Decisions about handling inconsistencies and out of range values were made during analysis and are reflected in the reporting of methods and tables.

Evaluation Indicators

The public media campaign, known by the tagline "Good to Know," will be evaluated with two primary indicators: (1) media reach and (2) accurate knowledge of retail marijuana laws, and a secondary indicator, accurate knowledge of risks associated with retail marijuana. After data collection, data were cleaned using the following steps: first, we conducted a review of the completeness of data for each variable and identification of data that were out of range or missing in the database. Because data were entered from paper surveys or telephone interviews, where inconsistencies in data entry emerged we were able to go back and check paper records for accuracy and re-enter these data. Each indicator and the associated analysis plan are summarized in Table 2.

Table 2. Indicators for Evaluation Questions

Evaluation Questions	Indicators	Survey Item(s)	Data analysis
Media Reach			
1. To what extent has the population of Colorado been exposed to the RMEP Campaigns?	Awareness of RMEP Campaign elements, prompted and unprompted, and frequency	Q3-Q4, baseline paper survey; corresponding items on follow-up survey	% reporting awareness of slogan, prompted and unprompted; overall and by gender, age, race/ethnicity, and current marijuana use
Accurate knowledge of retail marijuana laws			
2. To what extent does the RMEP campaign help to increase the general public's (age 21 and older) accurate knowledge of the retail marijuana laws in CO?	Accurate knowledge of the laws (individual items and an index of accurate knowledge of laws)	Q7-Q12 baseline paper survey; corresponding items on follow-up survey Index of accurate knowledge of laws: (1) age to buy, (2) may not use outdoors, (3) can get cited for a DUI, and (4) cannot take out of state.	% change in accurate knowledge; overall and by gender, age, race/ethnicity, and current marijuana use for both individual items and composite index % change in accurate knowledge by prompted campaign recall (e.g., regression of awareness of laws on familiarity with campaign)
Accurate knowledge of risks associated with retail marijuana			
3. To what extent does the RMEP campaign help to increase the general public's (age 21 and older) accurate knowledge of the risks associated with retail marijuana use?	Agreement with and perception of health risks associated with marijuana use (individual items and indices)	Q14a-e, Q15 a-j on baseline paper survey; corresponding items on follow-up survey Indices: 1. Youth use: perceived risk for a teenager using once a week and 2. perceived risk for a teenager using daily 2. Use around children: child exposure to smoke, storing marijuana in open containers 3. High Risk Use: hash oil, edibles, wait to drive 4. Use during pregnancy: perceived risk of use during pregnancy, use during pregnancy can lead to problems in child	% change in knowledge of health effects and perceptions of risk (specific and summary items); overall and by gender, age, race/ethnicity, and current marijuana use for individual items and composite indices % change in indices by prompted campaign recall (e.g., regression of change in perception of risky on familiarity with campaign)

Media Reach

Media reach will be measured during June 2015, approximately six months after the launch of the "Good to Know" campaign. Using items from the mail and telephone surveys, we will calculate:

1. **Unprompted recall**: The proportion of the main sample who recall hearing or seeing the campaign's slogan, unprompted (Q3 on the baseline survey)
2. **Prompted recall**: The proportion of the main sample who recall hearing or seeing the campaign's slogan "Good to Know*" at least* once or twice during the past six months
    a. **Prompted recall, adjusted for false recall:** The proportion of the main sample who recall hearing or seeing the campaign's slogan "Good to Know" at least once or twice during the past six months, after subtracting an average recall of the two fictitious slogans
3. **Frequency of message recall**: The proportion of the main sample who recall hearing or seeing the campaign's slogan "Good to Know" none, once or twice, and more than twice during the past six months

Collectively, the proportions described above will describe the campaign's reach among the sample of survey participants designed to reflect the Colorado adult population. These proportions will be evaluated for the overall sample as well as by demographic characteristics (gender, age category, and race/ethnicity).

In the absence of an *a priori* target for campaign reach, the prompted recall proportions will be descriptively compared to other marijuana-related slogans queried in the survey. The campaign slogans will be described by the overall budget and the timing of paid media purchases of respective campaigns.

Measures of Accurate Knowledge of Retail Marijuana Laws

Knowledge of marijuana laws was measured with six items. Of the six items, four are mostly likely to have been affected by campaign exposure because of the inclusion in campaign materials and messages. We will examine the change in accurate knowledge of all items, with a focus on the four most likely to have changed (bolded below). We will also create an index of these four items to look at the change in a composite of the most relevant laws. We will calculate the percent change in accurate knowledge from the baseline in 2014 to the follow-up in 2015 reflect the proportion of the sample that have accurate knowledge of the laws. Those participants who report inaccurate knowledge or answer "don't know" or "not sure" are grouped together. The six items measured are shown below, and the most relevant items to the campaign are bolded.

1. Must be at least age 21 to buy
2. Places where marijuana can be used
    a. May use in a private home
    b. May <u>not</u> use in a business
    c. May <u>not</u> use in outdoor place
3. May purchase 1 oz.
4. May grow 6 plants
5. Can get cited for DUI
6. May <u>not</u> take out of state

7. Composite index of most relevant laws to the campaign: (1) age 21 to buy, (2) may not use outdoors, (3) can get cited for DUI, (4) cannot take out of state.

The percent change in each of these items will be evaluated for the overall sample as well as among demographic groupings (gender, age category, race/ethnicity, and current marijuana use). A key priority in the evaluation is to ascertain if there is an association between higher awareness of any of the laws and exposure to the Marijuana Education and Prevention Campaigns. Thus, in the follow up evaluation, we will be reviewing if there is an association between exposure to the educational campaign and increased awareness of laws using statistical techniques such as regression modeling.

Measures of Accurate Knowledge of Risks Associated with Retail Marijuana

The main content of the general public media campaign is related to legal use of retail marijuana. However, some messaging relates to risks associated with use, specifically around the harm to the developing brain of children and adolescents, risks to children, high risk use, and use during pregnancy. We will create four composite indices for each of these four areas that have been addressed by the campaign. We will examine changes to these composites indices, as well as all individual items. We expect that the composite indices may significantly change from baseline to after campaign exposure and that items not included in campaign materials and messages will not change from baseline to after campaign exposure. Thus, because not every health effect or statement of risk is incorporated into campaign messaging, there is an opportunity to compare changes in perceptions of risk for those statements that may be affected by campaign messaging with those that out that likely will not be affected by the campaign. In this way, those health statements that are not part of campaign messaging may serve as controls for health statements that align with campaign messaging. Specifically, we will calculate the following composite indices:

1. Youth use: perceived risk for a teenager using once a week and 2. perceived risk for a teenager using daily
2. Use around children: child exposure to smoke, storing marijuana in open containers
3. High Risk Use: hash oil, edibles, wait to drive
4. Use during pregnancy: perceived risk of use during pregnancy, use during pregnancy can lead to problems in child

The entire list of items assessed in the multimode survey is listed below:

5. Knowledge of health effects:
    a. Regular use of marijuana can cause depression or anxiety
    b. A person should wait at least six hours after using marijuana before driving.
    c. Daily or near daily use of recreational marijuana can lead to addiction.
    d. Using marijuana during pregnancy can lead to attention problems and lower IQ in the child.
    e. Daily or near daily use of recreational marijuana can lead to lasting impaired memory.
6. Perceptions of risk:
    a. An adult using marijuana once a week
    b. An adult using marijuana daily or almost daily
    c. A teenager using marijuana about once a week
    d. A teenager using marijuana daily or almost daily
    e. A woman using marijuana often during pregnancy

f. A mother using marijuana while breastfeeding
g. Extracting 'hash oil' in a home
h. Children being exposed to someone else's marijuana smoke
i. Consuming more than one serving of edible marijuana
j. Storing marijuana in open containers in a home with children

The percent change in each of these items/indices will be evaluated for the overall sample as well as among demographic groups (gender, age category, race/ethnicity, and current marijuana use). To further examine the extent to which the campaign can be attributed to increases in these domains, we will examine the percent change in each composite index by the frequency of prompted recall (none, once or twice, more than twice). A relationship between frequency of prompted recall and greater accurate knowledge of health effects or perceptions of risk of messages incorporated into the campaigns will provide evidence that the change in these outcomes may be attributable to the campaign. We will apply other analytic approaches as appropriate, such as hierarchical linear regression analysis, to further explore the relationship between media awareness on change in perceptions of risks and knowledge of health effects, controlling for demographic characteristics and marijuana use. The greater part of campaign messaging is related to knowledge of marijuana laws. Therefore, the analysis related to knowledge of health effects and perceptions of risk will be considered secondary to the two analyses described above: media reach and accurate knowledge of marijuana laws.

Results from Baseline, Mixed-Mode Survey

Sample Demographics

A total of 993 adults completed the baseline survey in the fall of 2014 (Table 3).

Table 3. Unweighted Demographic Characteristics, Marijuana Media Evaluation Mixed-Mode Sample, Nov.-Dec. 2014 (n=993)

		Gender	
	Total % (95% CI)	Male % (95% CI)	Female % (95% CI)
Total		**40.6 (37.5, 43.6)**	**59.4 (56.4, 62.5)**
Age			
20-34	17.4 (15.1, 19.8)	16.4 (12.8, 20.0)	18.1 (15.0, 21.3)
35-54	26.4 (23.6, 29.1)	24.6 (20.4, 28.8)	27.6 (24.0, 31.2)

Table 3. Unweighted Demographic Characteristics, Marijuana Media Evaluation Mixed-Mode Sample, Nov.-Dec. 2014 (n=993)

55+	56.2 (53.1, 59.3)	59.1 (54.2, 63.9)	54.2 (50.2, 58.3)
Race/Ethnicity*			
White	65.0 (62.0, 67.9)	**70.5 (66.0, 74.9)**	**61.2 (57.2, 65.1)**
Hispanic	15.5 (13.3, 17.8)	13.4 (10.1, 16.7)	16.9 (13.9, 20.0)
African American	16.0 (13.7, 18.3)	12.7 (9.4, 15.9)	18.3 (15.2, 21.4)
Other	3.5 (2.4, 4.7)	3.5 (1.7, 5.3)	3.6 (2.1, 5.1)
Current marijuana use*[a]			
Yes	25.5 (22.8, 28.2)	**32.7 (28.1, 37.4)**	**20.5 (17.3, 23.8)**
No	74.5 (71.8, 77.2)	**67.3 (62.6, 71.9)**	**79.5 (76.2, 82.7)**

Note. Bolded results indicate significant differences in race/ethnicity by gender and marijuana use by gender, p<.05.
[a]Weighted prevalence of current marijuana use among this panel is 17.7%. This is not generalizable to the population of Colorado.

More than half of participants were female (59%), aged 55 or older (54%), and white (62%). There was a significant difference in race/ethnicity by gender, with 71% of males and 61% of females describing their race/ethnicity as white. More males than females reported marijuana use in the past month.

Table 4. List of slogans included in the baseline questionnaire

Drive high, get a DUI
Marijuana and you[a]
Don't be a lab rat
Speak now
First time five

Table 4. List of slogans included in the baseline questionnaire
Start low, go slow Consume responsibly Home OK, in the park no way![a] Did you know?
[a]fictitious slogan

Media Awareness, Mixed-Mode Sample

More than half (weighted 56%) of respondents reporting seeing or hearing any advertising or messaging about marijuana in the past 30 days and slightly less than half (45%) reported seeing promotional advertising for marijuana in the past 30 days. When provided with a list of slogans

(Table 4), the slogan with the highest proportion reporting seeing at least once or twice in the past six month were, “Drive high, get a DUI”, “Consume responsibly,” and “Don’t be a lab rat” (Table 6). A total of 6% and 14% of respondents said they recalled two slogans that were actually fictitious. Males were significantly more likely than females to recall the slogan “Speak now.” There were significant racial/ethnicity differences in the proportion having seen/heard “Marijuana and you” (fictitious), “Speak now,” “First time five,” and “Did you know?” Current marijuana users were more likely to have heard or seen the slogans “Drive High, get a DUI,” “Consume responsible,” and the fictitious slogan “Home OK, in the park no way!” There were significant age differences in “Start low, go slow”, with the oldest category of 5 and up reporting the highest recall (13%) and the middle age category of 35-54 reporting the lowest (4%). There was also a significant age difference in the proportion who recalled the slogan “Consume responsibly,” with the youngest age category (20-34) reporting the highest recall (66%).

Knowledge of Laws, Mixed-Mode Sample

Accurate knowledge of the laws varied between 23% reporting accurate knowledge that a Colorado resident can grow up to six plans in their home for personal recreational use, to 95% who reported that it is not legal to take marijuana out of state (Table 6). Similarly high proportions accurately reported it is legal to use marijuana in a private home (93%), it is not legal to use in an outdoor public place (93%), and it is possible to get cited for a DUI related to marijuana use (93%).

There was a pattern of significantly more men than women having accurate knowledge of the laws and younger ages reporting more accurate knowledge (Table 6). There were also significant differences in knowledge of the laws by racial/ethnicity group with a high proportion of Hispanics reporting it is illegal to use in an outdoor place (98%) and a high proportion of whites reporting it is possible to get cited for a DUI (95%) and it is illegal to take out of state (96%). Current marijuana users were more likely to have accurate knowledge than non-users about legal age to purchase, that it can be used in a private home and not outdoors, the amount that can be purchased and the number of plants that can be grown.

Table 5. Media Awareness (weighted percent) before the marijuana media campaign among an evaluation panel of English speaking Colorado adults

		Gender		Race/Ethnicity			
	Total % (95% CI)	Male % (95% CI)	Female %(95% CI)	White %(95% CI)	Hispanic/ Latino % (95% CI)	Black % (95% CI)	Other % (95% CI)
Seen/heard ads about marijuana in past 30 days	56.4 (49.9, 63.0)	51.1 (41.5, 60.7)	61.6 (53.0, 70.3)	58.2 (50.6, 65.9)	46.6 (31.1, 62.0)	74.4 (62.9, 85.9)	49.0 (21.6, 76.4)
Seen/heard ads for products in last 30 days (once or more)	45.4 (39.0, 51.9)	44.9 (35.5, 54.3)	45.9 (37.2, 54.7)	46.3 (38.7, 54.0)	39.8 (25.1, 54.5)	51.0 (35.0, 67.0)	47.0 (19.7, 74.3)
Slogans (seen once or more)							
Drive high, get a DUI	54.3 (47.8, 60.9)	61.0 (51.4, 70.6)	47.8 (38.9, 56.7)	53.2 (45.5, 61.0)	58.7 (42.0, 75.3)	57.9 (42.1, 73.6)	54.0 (26.8, 81.1)
Marijuana and you[a]	5.9 (2.7, 9.2)	7.4 (1.4, 13.4)	4.5 (2.1, 6.9)	**4.2** (1.0, 7.4)	**13.6** (1.3, 25.9)	**9.2** (0.6, 17.8)	**2.9** (0.0, 6.3)
Don't be a lab rat	31.6 (25.7, 37.5)	34.3 (25.4, 43.2)	29.1 (21.2, 36.9)	32.1 (25.0, 39.1)	24.3 (12.2, 36.5)	44.0 (27.5, 60.5)	40.7 (14.1, 67.3)
Speak now	5.3 (2.2, 8.3)	**7.6** (1.8, 13.5)	**2.9** (1.3, 4.6)	**3.7** (0.7, 6.8)	**11.4** (0.0, 23.1)	**11.5** (2.0, 21.0)	**2.1** (0.0, 4.6)
First time five	1.4 (0.4, 2.5)	0.8 (0.0, 1.7)	2.1 (0.2, 3.9)	**0.5** (0.0, 1.0)	**2.9** (0.0, 6.4)	**4.3** (0.0, 10.7)	**9.0** (0.0, 24.2)
Start low, go slow	8.0 (4.6, 11.4)	10.0 (4.4, 15.6)	6.0 (2.1, 10.0)	8.6 (4.3, 13.0)	6.4 (0.8, 12.1)	8.3 (0.8, 15.8)	3.7 (0.0, 9.6)
Consume responsibly	39.3 (32.7, 45.9)	41.4 (31.7, 51.1)	37.3 (28.3, 46.3)	40.1 (32.2, 48.0)	33.3 (19.0, 47.5)	57.2 (41.5, 72.9)	35.8 (12.2, 59.5)
Home OK, in the park no way![a]	14.0 (9.6, 18.4)	14.6 (7.9, 21.3)	13.4 (7.7, 19.1)	13.1 (8.3, 17.9)	21.3 (7.3, 35.3)	12.9 (4.1, 21.6)	3.2 (0.0, 7.2)

Table 5. Media Awareness (weighted percent) before the marijuana media campaign among an evaluation panel of English speaking Colorado adults

		Gender		Race/Ethnicity			
	Total % (95% CI)	Male % (95% CI)	Female %(95% CI)	White %(95% CI)	Hispanic/ Latino % (95% CI)	Black % (95% CI)	Other % (95% CI)
Did you know?	7.5 (4.4, 10.7)	5.9 (1.1, 10.7)	9.1 (5.1, 13.2)	**4.2** (1.7, 6.6)	**20.4** (7.3, 33.5)	**20.3** (4.2, 36.4)	**4.0** (0.0, 10.8)

Note. Bolded results indicate significant differences in media awareness by demographic characteristic, p<.05

[a] fictitious slogan.

Table 5 continued. Media Awareness (weighted percent) before the marijuana media campaign among an evaluation panel of English speaking Colorado adults

		Current Marijuana use		Age group		
	Total % (95% CI)	Yes % (95% CI)	No % (95% CI)	20-34 % (95% CI)	35-54 % (95% CI)	55+ % (95% CI)
Seen/heard ads about marijuana in past 30 days	56.4 (49.9, 63.0)	57.2 (44.7, 69.6)	56.7 (49.2, 64.2)	49.9 (37.2, 62.5)	54.3 (41.8, 66.9)	63.0 (53.9, 72.1)
Seen/heard ads for products in last 30 days (once or more)	45.4 (39.0, 51.9)	**66.3** (54.0, 78.5)	**40.5** (33.2, 47.8)	46.6 (34.2, 59.1)	43.4 (31.4, 55.4)	46.3 (37.1, 55.6)
Slogans (seen once or more)						
Drive high, get a DUI	54.3 (47.8, 60.9)	**69.7** (58.2, 81.1)	**51.6** (44.0, 59.1)	60.9 (48.4, 73.4)	45.2 (33.2, 57.3)	57.8 (48.8, 66.8)
Marijuana and you[a]	5.9 (2.7, 9.2)	6.7 (2.3, 11.2)	5.8 (1.9, 9.7)	8.2 (0.3, 16.2)	3.2 (1.1, 5.4)	6.7 (0.8, 12.5)
Don't be a lab rat	31.6 (25.7, 37.5)	39.7 (27.3, 52.0)	30.1 (23.5, 36.8)	28.5 (17.6, 39.3)	25.6 (15.7, 35.4)	39.8 (30.5, 49.1)
Speak now	5.3 (2.2, 8.3)	6.3 (1.5, 11.0)	5.1 (1.5, 8.7)	6.4 (2.4, 10.5)	5.6 (0.0, 11.5)	4.0 (0.0, 9.5)

Table 5 continued. Media Awareness (weighted percent) before the marijuana media campaign among an evaluation panel of English speaking Colorado adults

		Current Marijuana use		Age group		
	Total % (95% CI)	Yes % (95% CI)	No % (95% CI)	20-34 % (95% CI)	35-54 % (95% CI)	55+ % (95% CI)
First time five	1.4 (0.4, 2.5)	1.3 (0.0, 3.4)	1.5 (0.3, 2.7)	1.9 (0.0, 4.0)	0.4 (0.0, 1.1)	2.1 (0.0, 4.3)
Start low, go slow	8.0 (4.6, 11.4)	14.6 (6.1, 23.1)	6.7 (2.9, 10.4)	**6.3** (1.7, 10.9)	**4.3** (0.6, 8.0)	**12.8** (5.4, 20.3)
Consume responsibly	39.3 (32.7, 45.9)	**56.4** (43.8, 68.9)	**36.1** (28.5, 43.6)	**66.2** (55.3, 77.2)	**25.6** (15.3, 35.9)	**31.5** (22.2, 40.7)
Home OK, in the park no way![a]	14.0 (9.6, 18.4)	**25.9** (14.7, 37.0)	**11.5** (6.8, 16.2)	13.8 (6.6, 21.0)	9.4 (3.0, 15.7)	18.5 (10.2, 26.8)
Did you know?	7.5 (4.4, 10.7)	8.5 (2.5, 14.6)	7.4 (3.8, 11.0)	10.0 (4.2, 15.9)	6.2 (2.2, 10.3)	6.8 (0.7, 12.9)

Note. Bolded results indicate significant differences in media awareness by demographic characteristic, p<.05

[a] fictitious slogan.

Table 6. Knowledge of Marijuana Laws (weighted percent), before the marijuana media campaign among an evaluation panel of English speaking Colorado adults

Correct response		Gender		Race/Ethnicity			
	Total % (95% CI)	Male % (95% CI)	Female % (95% CI)	White % (95% CI)	Hispanic/ Latino % (95% CI)	Black % (95% CI)	Other % (95% CI)
Must be at least 21 to buy	75.3 (69.8, 80.7)	**83.2** (76.8, 89.7)	**67.4** (59.0, 75.8)	78.1 (72.0, 84.2)	67.2 (52.3, 82.1)	75.5 (63.9, 87.0)	59.3 (31.7, 86.9)
May use in a private home	92.6 (89.9, 95.4)	**96.4** (94.6, 98.2)	**89.0** (83.9, 94.1)	92.8 (89.5, 96.1)	94.2 (88.8, 99.6)	89.1 (80.5, 97.6)	86.8 (71.4, 100.0)
May not use in a business	80.2 (74.7, 85.6)	80.6 (72.7, 88.5)	79.7 (72.2, 87.2)	80.9 (74.8, 87.0)	82.1 (66.9, 97.3)	81.5 (67.4, 95.6)	60.3 (33.1, 87.5)
May not use in outdoor place	92.5 (88.5, 96.5)	94.2 (88.8, 99.5)	90.9 (85.0, 96.7)	**91.8** (86.7, 96.9)	**98.2** (96.2, 100.0)	**93.0** (86.7, 99.3)	**82.1** (63.4, 100.0)
May purchase 1 oz.	29.9 (24.0, 35.8)	**36.4** (27.1, 45.7)	**23.5** (16.4, 30.5)	29.7 (22.6, 36.7)	32.8 (18.4, 47.1)	26.3 (11.5, 41.2)	25.7 (2.1, 49.2)
May grow 6 plants	22.8 (17.5, 28.1)	**28.6** (20.1, 37.1)	**17.1** (11.0, 23.3)	22.4 (16.4, 28.3)	28.8 (13.2, 44.4)	16.9 (4.1, 29.6)	11.9 (0.0, 24.8)
Can get cited for DUI	92.5 (89.4, 95.5)	**95.7** (93.5, 98.0)	**89.2** (83.7, 94.8)	**94.9** (92.3, 97.6)	**86.5** (74.8, 98.2)	**83.9** (69.2, 98.5)	**82.2** (63.7, 100.0)
May not take out of state	94.7 (92.9, 96.6)	**97.1** (95.5, 98.7)	**92.3** (89.0, 95.6)	**96.2** (94.6, 97.8)	**93.0** (87.0, 99.0)	**88.0** (79.0, 97.1)	**82.2** (63.3, 100.0)

Note. Bolded results indicate significant differences in knowledge of laws by demographic characteristic, p<.05.

Table 6 continued. Knowledge of Marijuana Laws (weighted percent), before the marijuana media campaign among an evaluation panel of English speaking Colorado adults

Correct response		Current marijuana use		Age group		
	Total % (95% CI)	Yes % (95% CI)	No % (95% CI)	20-34 % (95% CI)	35-54 % (95% CI)	55+ % (95% CI)
Must be at least 21 to buy	75.3 (69.8, 80.7)	**92.9** (87.7, 98.0)	**71.2** (64.6, 77.7)	85.5 (75.0, 96.1)	72.8 (62.6, 82.9)	69.9 (61.8, 78.0)
May use in a private home	92.6 (89.9, 95.4)	**99.6** (99.1, 100.0)	**91.4** (88.0, 94.8)	**95.5** (91.0, 100.0)	**97.2** (95.4, 99.1)	**86.4** (80.4, 92.5)
May not use in a business	80.2 (74.7, 85.6)	75.6 (65.7, 85.6)	80.9 (74.6, 87.2)	78.5 (67.9, 89.2)	76.1 (64.9, 87.3)	85.0 (78.9, 91.2)
May not use in outdoor place	92.5 (88.5, 96.5)	**97.9** (94.9, 100.0)	**91.2** (86.4, 96.0)	94.9 (87.2, 100.0)	92.7 (86.3, 99.2)	90.5 (83.9, 97.2)
May purchase 1 oz.	29.9 (24.0, 35.8)	**47.0** (34.8, 59.3)	**25.6** (19.0, 32.1)	34.4 (22.8, 46.0)	32.6 (21.2, 44.0)	24.1 (16.1, 32.2)
May grow 6 plants	22.8 (17.5, 28.1)	**45.2** (33.0, 57.3)	**18.3** (12.4, 24.1)	**31.5** (20.3, 42.7)	**24.5** (13.9, 35.0)	**15.0** (9.3, 20.7)
Can get cited for DUI	92.5 (89.4, 95.5)	96.1 (92.2, 99.9)	91.6 (87.9, 95.3)	95.8 (92.4, 99.2)	92.5 (86.2, 98.9)	90.0 (84.9, 95.1)
May not take out of state	94.7 (92.9, 96.6)	96.8 (93.5, 100.0)	94.2 (92.0, 96.4)	**97.1** (94.8, 99.5)	**97.3** (95.2, 99.3)	**90.6** (86.6, 94.7)

Note. Bolded results indicate significant differences in knowledge of laws by demographic characteristic, p<.05.

Table 7. Perceptions of Risk and Health Effects (weighted percent) before the marijuana media campaign among an evaluation panel of Colorado

		Gender		Race/Ethnicity			
	Total % (95% CI)	Male % (95% CI)	Female % (95% CI)	White %(95% CI)	Hispanic/ Latino % (95% CI)	Black % (95% CI)	Other % (95% CI)
% agree/strongly agree							
Regular use of marijuana can cause depression or anxiety	42.5 (36.1, 48.9)	42.3 (32.8, 51.7)	42.8 (34.1, 51.4)	44.2 (36.6, 51.8)	39.2 (23.8, 54.6)	39.2 (23.8, 54.5)	30.3 (8.3, 52.3)
A person should wait at least six hours after using marijuana before driving.	60.1 (54.0, 66.2)	63.1 (54.3, 71.9)	57.2 (48.7, 65.6)	61.4 (54.3, 68.5)	55.1 (39.5, 70.6)	58.4 (43.0, 73.9)	59.8 (33.1, 86.4)
Daily or near daily use of recreational marijuana can lead to addiction.	58.6 (52.3, 65.0)	57.8 (48.5, 67.1)	59.4 (50.7, 68.1)	60.2 (52.8, 67.6)	48.5 (32.6, 64.4)	50.6 (34.5, 66.7)	77.5 (58.2, 96.9)
Using marijuana during pregnancy can lead to attention problems and lower IQ in the child.	60.9 (54.6, 67.2)	**54.1** (44.6, 63.6)	**67.5** (59.3, 75.7)	61.3 (54.0, 68.7)	58.1 (41.6, 74.5)	51.6 (35.4, 67.7)	73.0 (52.0, 94.0)
Daily or near daily use of recreational marijuana can lead to lasting impaired memory.	67.8 (62.2, 73.4)	67.1 (58.7, 75.4)	68.5 (61.1, 76.0)	**71.7** (65.7, 77.6)	**54.8** (38.7, 70.9)	**44.3** (28.8, 59.8)	**73.3** (52.6, 93.9)
% moderate/a lot of risk							
An adult using marijuana once a week	27.3 (21.5, 33.0)	28.0 (19.1, 36.8)	26.6 (19.2, 34.0)	29.0 (22.1, 36.0)	19.3 (6.7, 31.9)	25.0 (12.3, 37.8)	30.6 (3.8, 57.4)
An adult using marijuana daily or almost daily	72.1 (66.9, 77.3)	69.1 (61.1, 77.1)	75.1 (68.5, 81.8)	75.6 (69.8, 81.3)	62.5 (47.9, 77.1)	62.2 (46.7, 77.6)	60.4 (33.9, 86.9)
A teenager using marijuana about once a week	75.2 (70.2, 80.2)	74.0 (66.9, 81.1)	76.4 (69.1, 83.6)	**77.8** (72.0, 83.5)	**68.1** (54.4, 81.8)	**53.0** (36.7, 69.4)	**78.0** (59.1, 96.9)

Table 7. Perceptions of Risk and Health Effects (weighted percent) before the marijuana media campaign among an evaluation panel of Colorado

A teenager using marijuana daily or almost daily	88.3 (85.0, 91.5)	88.1 (83.3, 92.9)	88.5 (84.0, 92.9)	**93.1** (90.8, 95.5)	**73.0** (59.7, 86.4)	**75.1** (60.6, 89.5)	**77.5** (57.6, 97.3)
A woman using marijuana often during pregnancy	86.9 (83.2, 90.5)	84.3 (78.2, 90.3)	89.4 (85.3, 93.5)	88.7 (84.6, 92.8)	82.8 (72.5, 93.1)	82.7 (69.8, 95.6)	75.4 (54.9, 95.8)
A mother using marijuana while breastfeeding	79.6 (74.9, 84.3)	**74.0** (66.3, 81.6)	**85.2** (79.9, 90.5)	80.5 (75.0, 86.0)	76.7 (65.1, 88.4)	83.0 (70.0, 96.0)	72.3 (51.1, 93.4)
Extracting 'hash oil' in a home	65.6 (59.4, 71.8)	66.4 (57.4, 75.3)	64.9 (56.3, 73.5)	66.6 (59.3, 73.9)	63.1 (47.8, 78.5)	70.1 (54.8, 85.5)	55.3 (28.4, 82.2)
Children being exposed to someone else's marijuana smoke	80.6 (75.6, 85.5)	76.1 (68.6, 83.7)	84.9 (78.6, 91.2)	82.3 (76.5, 88.0)	78.1 (66.7, 89.4)	74.8 (59.3, 90.2)	66.6 (40.6, 92.5)
Consuming more than one serving of edible marijuana	66.8 (61.0, 72.5)	66.7 (58.4, 75.0)	66.9 (58.9, 74.9)	68.1 (61.3, 74.8)	64.9 (50.8, 79.1)	55.0 (39.0, 70.9)	62.8 (36.6, 88.9)
Storing marijuana in open containers in a home with children	83.0 (78.0, 88.0)	83.5 (77.1, 90.0)	82.4 (74.8, 90.1)	83.9 (77.9, 90.0)	79.9 (68.2, 91.6)	82.3 (69.7, 94.9)	79.4 (60.7, 98.1)

Note. Items are scored from 1 to 5 with higher scores indicate greater agreement or greater risk. Not sure/don't know is considered neutral (score of 3).

Table 7 continued. Perceptions of Risk and Health Effects (weighted percent) before the marijuana media campaign among an evaluation panel of Colorado

		Current Marijuana use		Age group		
	Total % (95% CI)	Yes % (95% CI)	No % (95% CI)	20-34 % (95% CI)	35-54 % (95% CI)	55+ % (95% CI)
% agree/strongly agree						
Regular use of marijuana can cause depression or anxiety	42.5 (36.1, 48.9)	**21.5** (12.1, 30.9)	**47.3** (39.9, 54.7)	35.6 (23.0, 48.2)	43.2 (31.1, 55.4)	47.0 (37.9, 56.0)
A person should wait at least six hours after using marijuana before driving.	60.1 (54.0, 66.2)	50.9 (38.6, 63.2)	63.0 (56.2, 69.7)	**53.1** (40.5, 65.6)	**72.8** (63.2, 82.3)	**54.0** (45.0, 63.0)
Daily or near daily use of recreational marijuana can lead to addiction.	58.6 (52.3, 65.0)	**29.1** (17.6, 40.7)	**65.8** (58.7, 72.9)	50.7 (38.1, 63.4)	58.7 (46.4, 71.0)	64.4 (56.3, 72.4)
Using marijuana during pregnancy can lead to attention problems and lower IQ in the child.	60.9 (54.6, 67.2)	**36.0** (24.9, 47.0)	**65.5** (58.4, 72.6)	**54.1** (41.3, 67.0)	**75.4** (65.3, 85.6)	**52.8** (43.6, 61.9)
Daily or near daily use of recreational marijuana can lead to lasting impaired memory.	67.8 (62.2, 73.4)	**43.6** (31.0, 56.2)	**72.6** (66.5, 78.7)	66.7 (56.2, 77.3)	71.9 (61.2, 82.5)	65.0 (56.9, 73.0)
% moderate/a lot of risk						
An adult using marijuana once a week	27.3 (21.5, 33.0)	**5.6** (0.5, 10.7)	**31.2** (24.5, 38.0)	16.2 (7.2, 25.2)	31.0 (19.2, 42.8)	32.1 (23.9, 40.4)
An adult using marijuana daily or almost daily	72.1 (66.9, 77.3)	**36.9** (25.0, 48.7)	**79.7** (74.6, 84.9)	61.8 (50.2, 73.3)	77.1 (67.9, 86.3)	75.5 (68.9, 82.0)
A teenager using marijuana about once a week	75.2 (70.2, 80.2)	**47.0** (34.6, 59.5)	**81.1** (75.9, 86.4)	**62.9** (51.2, 74.7)	**79.1** (70.2, 88.0)	**80.7** (75.0, 86.4)

Table 7 continued. Perceptions of Risk and Health Effects (weighted percent) before the marijuana media campaign among an evaluation panel of Colorado

A teenager using marijuana daily or almost daily	88.3 (85.0, 91.5)	**71.2** (60.2, 82.2)	**91.7** (88.7, 94.7)	83.8 (75.9, 91.7)	92.9 (88.0, 97.9)	87.4 (82.9, 91.9)
A woman using marijuana often during pregnancy	86.9 (83.2, 90.5)	**70.8** (59.2, 82.3)	**90.1** (86.6, 93.6)	**82.6** (74.1, 91.2)	**94.0** (90.3, 97.7)	**83.6** (77.4, 89.8)
A mother using marijuana while breastfeeding	79.6 (74.9, 84.3)	**54.2** (41.8, 66.6)	**84.8** (80.1, 89.4)	74.4 (64.3, 84.6)	86.6 (80.0, 93.2)	77.1 (69.6, 84.6)
Extracting 'hash oil' in a home	65.6 (59.4, 71.8)	66.5 (54.7, 78.3)	65.3 (58.1, 72.4)	**43.2** (31.3, 55.2)	**70.6** (60.4, 80.8)	**77.7** (70.6, 84.8)
Children being exposed to someone else's marijuana smoke	80.6 (75.6, 85.5)	**60.0** (47.8, 72.3)	**84.7** (79.5, 89.9)	**66.7** (54.2, 79.2)	**89.4** (84.0, 94.8)	**82.9** (76.9, 88.9)
Consuming more than one serving of edible marijuana	66.8 (61.0, 72.5)	**47.0** (34.7, 59.3)	**70.9** (64.6, 77.2)	58.7 (46.5, 70.9)	75.4 (66.4, 84.4)	65.1 (56.5, 73.7)
Storing marijuana in open containers in a home with children	83.0 (78.0, 88.0)	79.9 (70.6, 89.1)	83.4 (77.6, 89.2)	**70.9** (58.0, 83.7)	**88.1** (81.6, 94.7)	**87.2** (81.8, 92.7)

Note. Items are scored from 1 to 5 with higher scores indicate greater agreement or greater risk. Not sure/don't know is considered neutral (score of 3).

Perceptions of Risk and Health Effects, Mixed-Mode Sample

Table 8. List of health effects and perceptions of risk included in the baseline questionnaire
Regular use of marijuana can cause depression or anxiety
A person should wait at least six hours after using marijuana before driving.
Daily or near daily use of recreational marijuana can lead to addiction.
Using marijuana during pregnancy can lead to attention problems and lower IQ in the child.
Daily or near daily use of recreational marijuana can lead to lasting impaired memory.
An adult using marijuana once a week
An adult using marijuana daily or almost daily
A teenager using marijuana about once a week
A teenager using marijuana daily or almost daily
A woman using marijuana often during pregnancy
A mother using marijuana while breastfeeding
Extracting 'hash oil' in a home
Children being exposed to someone else's marijuana smoke
Consuming more than one serving of edible marijuana
Storing marijuana in open containers in a home with children

Agreement of health effects and risks of harm varied across the 15 statements queried in the survey (Table 8), from a low of 27% of respondents perceiving moderate risk or a lot of risk associated with an adult using marijuana once a week, to 88% endorsing moderate risk or a lot of risk associated with a teenager using marijuana daily or almost daily (Table 7).

Females were more likely than males to think that marijuana during pregnancy can lead to attention problems and lower IQ in the child and that there is risk associated with a mother using while breastfeeding.

There were racial/ethnicity differences in responses to three of the statements. Whites had the highest agreement (72%), and Blacks the lowest (44%), that daily or near daily use of recreational marijuana can lead to lasting impaired memory. Similarly, Whites had higher endorsement (78%), compared to Blacks (53%) of

risk associated with a teenager using marijuana once a week, and whites had higher endorsement than Black or Hispanics of a teenager using daily or almost daily (Whites: 93%, Hispanics: 73%; Blacks: 75%).

There were significant differences across age categories for 7 out of the 15 statements. The trend, with some exceptions was that the youngest category (20-34) had the lowest perception of risk or endorsement of health effects. When asked about driving after using marijuana, marijuana use during pregnancy leading to lower IQ in the child, and a woman using during pregnancy, the middle age category (35-54) had the highest perception of risk and health effects, with the younger and older categories (55 and up) reporting similar perceptions.

Current marijuana users were significantly less likely to endorse health effects or risks for all statements except for waiting six hours to drive, extracting hash oil at home and storing marijuana in open containers in a home with children.

Results from Baseline, Spanish Language Mixed-Mode Sample

Sample Demographics

A total of 47 individual completed a telephone questionnaire in Spanish; 70% were female and 19% were 20-34, 55% were 35-54 and 25% were 55 or older (Table 9). To provide a descriptive comparison for the Spanish language results, all results are presented next to results from those respondents who completed the survey in English (mail or telephone) and self-identify their ethnicity to be Hispanic. In comparison to the English-language Hispanic respondents, the Spanish-language respondents tended to be older. To consider the potential influence of the age composition of the sample, all of the following tables were re-run removing the youngest age category. There were no substantial differences and thus the results for the full samples are presented here.

Table 9. Unweighted demographic characteristics, Hispanic sub-sample, by language of survey administration

	English Language[a] % (N)	Spanish Language[b] % (N)
Total	100.0 (154)	100.0 (47)
Sex		
Male	35.1 (54)	29.8 (14)
Female	64.9 (100)	70.2 (33)
Age		
20-34	39.6 (61)	19.2 (9)

Table 9. Unweighted demographic characteristics, Hispanic sub-sample, by language of survey administration		
	English Language[a] % (N)	Spanish Language[b] % (N)
Age		
35-54	29.9 (46)	55.3 (26)
55+	30.5 (47)	25.5 (12)

[a]Participants included those identifying as Hispanic or Latino who speak primarily or exclusively English

[b]Participants included those identifying as Hispanic or Latino who speak primarily or exclusively Spanish

Media Awareness, Spanish Language Mixed-Mode Sample

Similar proportions of Spanish-language and English-language Hispanic respondents recalled seeing or hearing advertisements about marijuana in the past 30 days (66% and 67% respectively) (Table 10). However, familiarity of particular slogans varied. The most familiar slogan to Spanish language respondents was "Consume Responsibly" (53%) which was also frequently recalled among English language respondents (38%), but ranked second in that group to "Drive High, Get a DUI". Like English-language respondents, "Drive High, Get a DUI" was frequently recalled (45% Spanish language; 60% English language). Spanish language respondents had higher recall of the fictitious slogan "Marijuana and you" (32% Spanish language; 10% English language), but lower recall of the second fictitious slogan "Home OK, in the park no way!" (11% Spanish language; 18% English language).

Table 10. Unweighted Media Awareness among Hispanics, by Language		
	Hispanics(English language) % (N)	Spanish Language % (N)
Seen/heard ads about marijuana in past 30 days	67.3 (103)	66.0 (31)
Seen/heard ads for products in last 30 days (once or more)	51.6 (79)	61.7 (29)
Slogans (seen once or more)		
Drive high, get a DUI	60.0 (90)	44.7 (21)
Marijuana and you[a]	9.5 (14)	31.9 (15)
Don't be a lab rat	32.0 (48)	11.4 (5)
Speak now	9.5 (14)	12.8 (6)
First time five	4.1 (6)	6.4 (3)
Start low, go slow	4.7 (7)	17.0 (8)

Table 10. Unweighted Media Awareness among Hispanics, by Language

	Hispanics(English language) % (N)	Spanish Language % (N)
Consume responsibly	38.4 (58)	53.2 (25)
Home OK, in the park no way![a]	18.4 (27)	10.6 (5)
Did you know?	14.1 (21)	17.0 (8)

Knowledge of Laws, Spanish Language Mixed-Mode Sample

Spanish language respondents had lower accurate knowledge of laws governing permitted use or marijuana as compared to Hispanic respondents who completed the survey in English (Table 11). For example, only half (53%) correctly responded that the legal age to purchase marijuana is 21, as compared to 77% of English language respondents. None reported that a Colorado adult can grow six plants and only 3% (compared to 36% of English language respondents) reported that a Colorado resident can purchase 1 oz. of recreational marijuana.

Table 11. Unweighted Knowledge of Marijuana Laws, among Hispanics, by Language

Correct response:	Hispanics (English language) % (N)	Spanish Language % (N)
Must be at least age 21 to buy	76.6 (118)	53.2 (25)
May use in a private home	93.4 (141)	25.5 (12)
May not use in a business	85.4 (129)	91.5 (43)
May not use in outdoor place	94.7 (143)	80.9 (38)
May purchase 1 oz.	35.7 (55)	2.6 (1)
May grow 6 plants	26.6 (41)	0 (0)
Can get cited for DUI	90.9 (140)	100 (47)
May not take out of state	91.6 (141)	91.5 (43)

However, the proportion who knew that one cannot use outside, cannot use in a private business, can get cited for a DUI and cannot take out of state was high (81% -100%). Thus, the level of knowledge of the laws is high in regards to restrictions but low in regards to permitted use or marijuana.

Perceptions of Risk and Health Effects, Spanish Language Mixed-Mode Sample

Without exception, the Spanish language respondents reporting more agreement with the presence of health effects and high perception of risk to the 15 statements presented in the survey (Table 12). Among the widest gaps are the risk associated with an adult using once a week (64% Spanish language; 19% English language) and an adult using daily or almost daily (64% Spanish language, 19% English language) and higher agreement that daily or near daily marijuana use can lead to addiction (94% Spanish language, 59% English language).

Table 12. Unweighted Perceptions of Risk and Health Effects among Hispanics, by Language

	Hispanics (English language) % (N)	Spanish Language % (N)
% agree/strongly agree		
Regular use of marijuana can cause depression or anxiety	43.8 (67)	61.7 (29)
A person should wait at least six hours after using marijuana before driving.	52.9 (81)	84.8 (39)
Daily or near daily use of recreational marijuana can lead to addiction.	58.8 (90)	93.6 (44)
Using marijuana during pregnancy can lead to attention problems and lower IQ in the child.	65.6 (101)	93.6 (44)
Daily or near daily use of recreational marijuana can lead to lasting impaired memory.	59.1 (91)	89.4 (42)
% moderate/a lot of risk		
An adult using marijuana once a week	18.8 (29)	63.8 (30)
An adult using marijuana daily or almost daily	59.5 (91)	93.5 (43)
A teenager using marijuana about once a week	64.7 (99)	76.6 (36)
A teenager using marijuana daily or almost daily	81.8 (126)	97.8 (45)
A woman using marijuana often during pregnancy	85.1 (131)	93.5 (43)
A mother using marijuana while breastfeeding	77.3 (119)	97.8 (45)
Extracting 'hash oil' in a home	66.7 (102)	88.9 (40)
Children being exposed to someone else's marijuana smoke	81.2 (125)	100.0 (46)
Consuming more than one serving of edible marijuana	61.4 (94)	95.7 (44)
Storing marijuana in open containers in a home with children	81.1 (124)	95.7 (44)

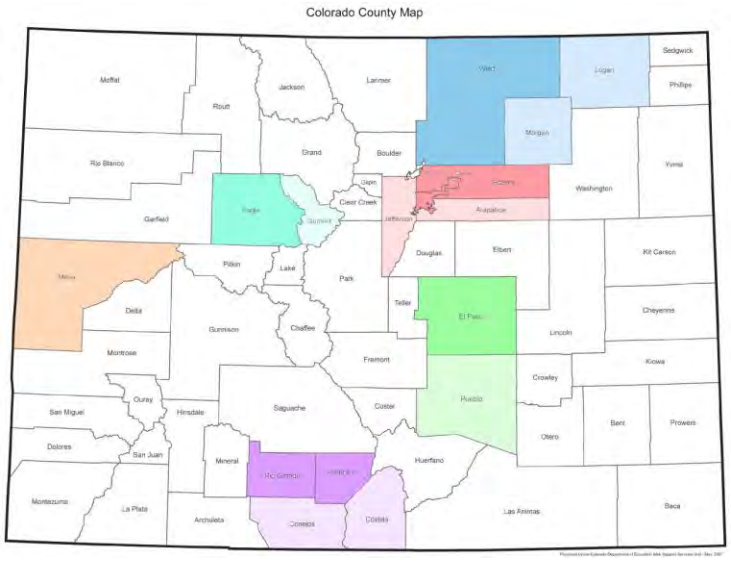
Evaluation Findings: Venue-Day-Time Community Survey and In-Depth Interviews

In addition to the mixed-mode survey of a probability sample described above, we conducted a survey with a probability sample of selected groups statewide using a Venue-Day-Time (VDT) survey methodology. This method is used to find hard to reach or specific populations and is considered more rigorous than a convenience sample, because all participants have a knowable probability of being included in the sample, allowing for greater generalizability of findings. The survey focused on knowledge and risks associated with retail marijuana use, and targeted youth, pregnant or breastfeeding women, clinicians, and retail marijuana growers and users.

To supplement and offer more in-depth information from these groups, we also conducted 24 in-depth telephone interviews with a purposive sample of representatives from each of these groups. These participants were invited to participate after completing a survey or were approached directly by staff after being referred by a member of our Evaluation Advisory Board.

Sample Design

The venue-day-time survey includes a probability sample of 501 persons from rural and urban counties across the state. Counties for the survey were selected at random based on their overall population, including counties with the highest and lowest numbers of residents; counties with the highest numbers of Hispanic and African American residents; counties with high numbers of youth under age 21; and counties representing urban and rural populations. Shown in the map here are all the counties (shaded) entered into the sampling frame. Those selected at random from among those in the sampling frame included Denver, Adams, Weld, El Paso, Mesa, Eagle, Rio Grande and Alamosa.



Once counties were selected, staff identified community organizations, public settings and businesses where we would be likely to find audiences targeted for the survey. These audiences included clinicians who provide care to youth and pregnant women, retailer marijuana business staff, youth and pregnant women. Staff contacted representatives from these organizations, settings and businesses to explain the purpose of

the venue-day-time survey and obtain permission for recruiting survey participants in these settings. When a location identified was a public setting, we did not obtain permission (e.g. a city park or street corner).

Once we identified locations to recruit participants in each county, we went to these locations and generated estimates of how many people we could survey from our target audience in a 2.5-hour period. Staff went to the venue on days of the week and times of the day when there was an anticipated high volume of participants and counted the potential participants that they observed entering the venue. If we estimated a yield of at least six completed surveys in a given venue on a specific day and time, then it was included it in the final sampling frame. These venue-day-times or VDT's comprised the final sampling frame. The venues where participants were recruited in each county are shown here. In some cases specific business names are not noted if we did not receive explicit permission from them to share this information.

The VDT sampling approach is one that is methodologically more rigorous than one employing a convenience sample. Biases associated with non-random selection of venues days and times for data collection include such things as collecting data where it is most convenient for the staff, or on days of the week or times of the day that are preferred, meaning that participants in a given venue may have a greater likelihood of being selected and included in the sample. In this sample, these biases are reduced, and participants have a knowable probability of being included in the sample.

While this is a more rigorous approach than a convenience sample, it does not completely remove bias, and results are not generalizable to the clinician, retailer/user, pregnant and youth populations in Colorado. We deliberately selected geographic areas where there were higher and lower populations to obtain a distribution of urban/rural respondents; areas where we would be likely to find higher concentrations of youth at risk, defined as youth living in areas with higher poverty and higher crime rates. We deliberately selected venues where we could encounter minority populations, in particular African American and Latino participants to increase the sample and better document their awareness of laws and perception of risk associated with use.

The findings from this Community VDT sample should therefore be considered to supplement and enhance those from the mixed-mode survey. We underscore that they are not generalizable to the population of Colorado as a whole.

Table 13. Venue of Data collection

	Denver/Adams	**El Paso**	**Weld**	**SLV**	**Mesa**	**Eagle**
Public Park or outdoor setting	● Skate Park ● Court House ● Cherry Creek Mall Sidewalk ● Park-N-Ride Adams County	● Memorial Park ● Skate Park			● Longs Park ● REI – car wash parking lot ● Sherwood Park ● Longs Park	

Table 13. Venue of Data collection

	Denver/Adams	El Paso	Weld	SLV	Mesa	Eagle
Shopping area	• 16th Street Mall					
School		• Life Skills Alternative HS		• Alamosa HS		• Red Canyon Alternative HS • Eagle HS
Private Business	• Track Club	• Birth Journey • Speak Easy • Enso Yoga	• Retail Marijuana • Prenatal Class • Breastfeeding Class (Private Businesses)	• Valley Wide – OBGYN clinic		• Native Roots Retail • Roots Rx
Public Business (e.g. WIC)	• TCH - Young Mothers Clinic/CAMP • TCH - Child Health Clinic • Salud Clinic	• WIC Clinic • St. Francis Health Clinic	• Salud Clinic • WIC Clinic • Boys & Girls Club	• Summit Market • Boys & Girls Club	• Mesa Colorado Public Library • Mesa County Health Dept	• WIC

We chose VDT's at random for each county from the sampling frame and sent staff at those days of the week and times of day chosen to approach potential survey participants and invite them to complete a survey. We began data collection on November 30, 2014 and continued through January 4th, 2015. We approached 809 people in study venues; of these, 606 or 75% were eligible for participation. Of these, 501 or 83% agreed to participate.

The data collection staff included at least two people for each VDT. Data were self-administered by survey participants on tablets into the Research Electronic Data Capture or REDCap system, an online survey tool that stores data behind firewalls at the University of Colorado. All surveys were anonymous and collected no identifiers beyond age, gender, race/ethnicity and zip code. As mentioned, the in-depth interviews conducted with 24 people comprised a convenience sample recruited after completing the VDT community sample or referred by a member of the Evaluation Advisory Board. Demographics of participants in these in-depth interviews are shown in Table 14.

Table 14. Demographics of participants in these in-depth interviews

Sampling Areas (counties)	Clinicians	Retailer/ Users	Youth	Pregnant	Total Sample
Denver, Jefferson, Adams, Arapahoe	1	1	5 (3 African American, 2 Latino)	2 (1 African American, 1 Latina)	9
Weld, Morgan, Logan			1	1	2
Pueblo, El Paso		1	3	1	5
Mesa	1		2 (Latino)	1	4
Eagle, Summit		1			1
Alamosa, Rio Grande, Costillo, Conejos		1	1	1	3
Total Sample	2	4	12	6	24

Analysis plan

Analyses presented here include descriptive statistics with frequencies for all the survey measures for the total sample and for each of the four groups surveyed, i.e,. clinicians, retailers and users, youth and pregnant and breastfeeding women. We include additional subgroup analyses for youth, pregnant and breastfeeding women in tables in the appendices. These include comparisons of knowledge of laws and risk attitudes towards use among youth who indicate using marijuana compared to those who do not and among those in Front Range communities (i.e., Denver, El Paso (Colorado Springs) and Weld (Greeley) counties) compared to those outside the Front Range (Summit, Mesa and San Luis Valley). No tests of significance were conducted between or within groups for data presented from the VDT community survey in this report due to the small sample sizes and descriptive nature of the survey, although they are reported for the subgroup analyses in the appendix. After CDPHE marijuana education campaigns are conducted, follow-up surveys will provide similar data, and analyses will compare those results with baseline results to see whether knowledge and risk perceptions are different before and after the campaigns. Data were collected via a self-administered tool online on internet-connected tablets; the survey was programmed to require responses to questions and to skip irrelevant questions (e.g. if the participant was male they skipped questions related to pregnancy). This was designed to reduce potential data entry errors and data inconsistencies. After data collection, data were cleaned using the following steps: first, we conducted a review of the completeness of data for each variable and identification of data that were out of range or missing in the database. Where data were missing or there were inconsistencies in data entry (e.g., the age stated by a participant did not correspond to their birthdate) we made case by case decisions about keeping a record or variable. Because participants self-administered the survey, and because we allowed them to choose not to answer any questions, there were 33 surveys missing more than half of the survey items; these participants were excluded from the analyses. Of the 534 completed surveys, 33 had more than 50% missing data, or 6% of the

total sample. The group with the highest percent of missing data was youth (7%) and the lowest was clinicians (2%).

Results from Baseline, Community Survey

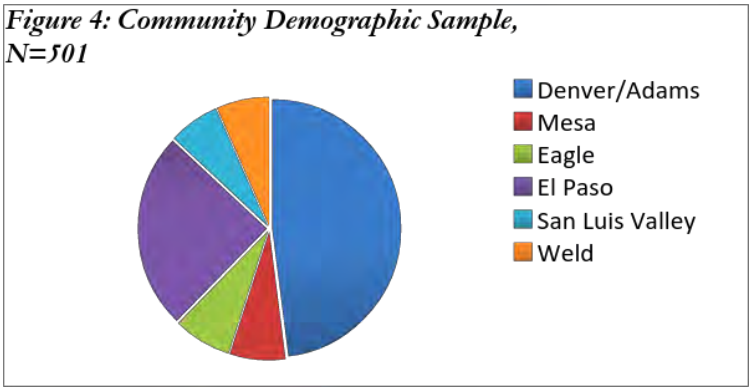
Following are specific data elaborating on these findings.

Sample Demographics

Table 15. Demographics of VDT Community Sample

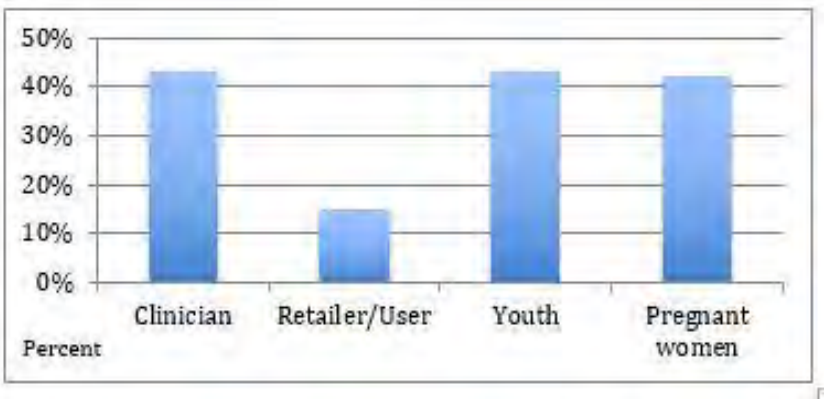
Characteristic:	Clinician (N=47)	Retailer (N=62)	Youth (N=241)	Pregnant Women (N=151)
Denver/Adams County	21 (45%)	10 (14%)	128 (53%)	62 (41%)
Mesa	6 (13%)	0 (0%)	22 (9%)	10 (7%)
Eagle	10 (21%)	8 (12%)	12 (5%)	10 (7%)
El Paso	3 (6%)	35 (51%)	48 (20%)	48 (32%)
SLV	4 (9%)	0 (0%)	19 (8%)	12 (8%)
Weld	3 (6%)	9 (13%)	12 (5%)	9 (6%)
Language: Spanish	11 (23%)	3 (5%)	28 (12%)	29 (20%)
Language: English	36 (77%)	56 (90%)	201 (83%)	114 (77%)
Race: White	35 (74%)	43 (69%)	147 (61%)	76 (51%)
Race: African American	3 (6%)	7 (11%)	58 (24%)	24 (16%)
Race: Hispanic	20 (43%)	9 (15%)	105 (43%)	62 (42%)
Race: American Indian	1 (2%)	7 (11%)	21 (9%)	8 (5%)
Race: Asian	0 (0%)	0 (0%)	3 (1%)	3 (2%)
Race: N. Hawaiian/PI	1 (2%)	0 (0%)	7 (3%)	2 (1%)
Gender: Female	43 (91%)	23 (37%)	84 (35%)	150 (100%)
Gender: Male	4 (9%)	36 (58%)	152 (63%)	1 (0%)
Total:	47 (9%)	62 (12%)	241 (48%)	151 (30%)

Figure 4: Community Demographic Sample, N=501



Demographics for the community sample are shown in Table 15 and Figure 4. Clinicians comprised 9% of the sample, Retailers and Users 12%, youth 48% and pregnant women 30%. Most of the sample was from Denver/Adams counties, followed by El Paso. The remaining sample was relatively equally split between Mesa, Eagle, San Luis Valley (Rio Grande and Alamosa Counties) and Weld County. Over a third (39%) of the sample self-identified as Latino, and the subsequent figure (Figure 4a) illustrates the proportions among each group surveyed who are primary Spanish speakers, with over 40% indicating Spanish as their first language among clinicians, youth and pregnant women. Among retailers the proportion was much lower at 15%.

Figure 4a: Latino Ethnicity, VDT Community Sample



Just under one-fifth of the sample (18%) self-identified as African American. The largest proportion of African Americans was among the youth sample at 24%. Just under 60% of the sample was female; a higher proportion of females compared to males is to be expected given our explicit intention to survey pregnant women.

Media Awareness, Community Sample

Table 16 illustrates awareness of marijuana education campaigns. Less than one-third (28%) of those surveyed indicated seeing any sort of advertisement about marijuana in the past month. The "Drive High, Get a DUI," "Don't be a Lab Rat," and "Consume Responsibly" were the campaigns most familiar to participants.

Of the entire community sample, 126/501 or 25% recalled one or both of the "Consume Responsibly" or "Start Low, Go Slow" campaigns.

In contrast to having less than one-third exposed to marijuana campaigns, close to half the sample overall (48%) reported seeing advertisement for marijuana products, with slightly higher proportions indicating this among Retailers and Users and youth.

Table 16. Awareness of educational campaigns related to marijuana, VDT Community Sample

Question:	**Clinician (N=47)**	**Retailer (N=62)**	**Youth (N=241)**	**Pregnant Women (N=151)**
Seen or heard any advertisements about marijuana in past 30 days: Yes	17 (36%)	17 (27%)	61 (25%)	47 (31%)
Seen or heard any advertisements about marijuana in past 30 days: No	28 (60%)	34 (55%)	164 (68%)	103 (68%)
Theme: Drive high and get a DUI	28 (60%)	29 (47%)	118 (49%)	64 (42%)
Theme: Marijuana and you	7 (15%)	9 (15%)	78 (32%)	20 (13%)
Theme: Don't be a lab rat	18 (38%)	18 (29%)	87 (36%)	28 (19%)
Theme: Speak now	11 (23%)	10 (16%)	96 (40%)	31 (21%)
Theme: First time five	1 (2%)	6 (10%)	59 (24%)	13 (9%)
Theme: Start low, go slow	5 (11%)	11 (18%)	70 (29%)	17 (11%)
Theme: Consume responsibly	24 (51%)	33 (53%)	114 (47%)	50 (33%)
Theme: Home OK, in the park no way	4 (9%)	8 (13%)	69 (29%)	17 (11%)
Theme: Did you know	11 (23%)	9 (15%)	82 (34%)	32 (21%)
Reported exposure to either *Consume Responsibly* and/or *Start Low, Go Slow*	19 (52%)	33 (57%)	126 (56%)	48 (44%)
Reported exposure to either *Marijuana and You* or *Home OK in the Park No Way* (Foil messages)	8 (23%)	12 (22%)	104 (46%)	23 (21%)
Seen or heard advertisement for marijuana products in last 30 days: Yes	23 (49%)	32 (52%)	123 (51%)	62 (41%)
Seen or heard advertisement for marijuana products in last 30 days: No	22 (47%)	24 (39%)	101 (42%)	79 (52%)

Among those in-depth interviewees, there was a feeling that more needs to be done for the removal of stigma around the legalization of marijuana specifically in relation to pregnancy. Some women fear that they risk having their children taken away if they use marijuana. They perceive a double standard for alcohol and

marijuana use, where alcohol is accepted while marijuana remains marginalized. Several indicated they would like to see more consistent restrictions for both marijuana as well as alcohol.

Following are final descriptive findings from unique items in surveys with retailers/marijuana users; youth; and clinicians. The unique items for pregnant and breastfeeding women are related primarily to marijuana use; because very few women indicated use, and because use is not the primary focus of this evaluation, these data are included in the appendices.

Knowledge of Laws, Community Sample

Table 17. Knowledge of marijuana laws

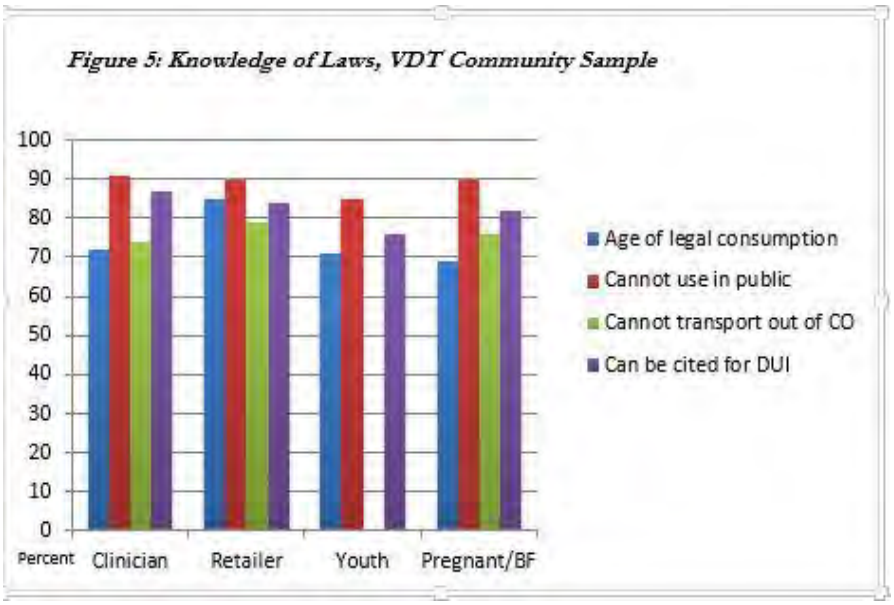
Question:	Clinician (N=47)	Retailer (N=62)	Youth (N=241)	Pregnant Women (N=151)
Would you Vote against legalization:	23 (49%)	4 (6%)	NA	55 (36%)
Would you Vote for legalization:	21 (45%)	55 (89%)	NA	69 (46%)
Knowledge of marijuana laws				
Legal age to purchase Marijuana is 21	34(72%)	53 (85%)	171 (71%)	101 (69%)
Cannot Consume Marijuana outdoors	43(91%)	56(90%)	206 (85%)	136 (90%)
Cannot carry or mail marijuana out of CO	35 (74%)	49 (79%)	NA	115 (76%)

Table 17. Knowledge of marijuana laws

Question:	Clinician (N=47)	Retailer (N=62)	Youth (N=241)	Pregnant Women (N=151)
Can be ticketed for using and driving	41 (87%)	52 (84%)	184 (76%)	124 (82%)
Has awareness of 4 key laws: legal age, outdoor consumption, transport and DUI	13 (44%)	38 (70%)	131 (58%)*	60 (60%)
Can consume marijuana in a private home	4 (9%)	34 (55%)	140 (58%)	88 (58%)
Cannot consume marijuana in a business open to public	7 (19%)	23 (37%)	206 (85%)	136 (90%)
CO Residents can purchase up to 1 oz.	20 (43%)	46 (74%)	N/A	46 (30%)
Can cultivate up to 6 plants	27 (60%)	43 (69%)	N/A	56 (37%)
Importance of knowing provisions--Important	40 (85%)	53 (85%)	NA	105 (70%)
Importance of knowing provisions—Unimportant	4 (9%)	1 (2%)	NA	18 (12%)

**Youth were not queried re: Transport out of state, so this represents awareness of three of the four key laws*

Table 17 shows baseline data on knowledge of marijuana laws where data are complete. In general, groups surveyed do not have complete information about the marijuana laws in Colorado, with some discrepancies in awareness across the groups surveyed. Clinicians had the lowest awareness that you cannot consume marijuana in a business open to the public. While most surveyed are aware that you can be arrested for driving under the influence of marijuana, fewer know that you cannot legally take any amount of marijuana across state lines. Groups varied in their awareness of all of the laws: when reviewing combined awareness of



four key laws, i.e., that legal age for recreational purchase is 21, that marijuana cannot be consumed in public or transported out of state and that one can be cited for driving under the influence of marijuana, clinicians had the lowest awareness of all four laws (44%) and Retailers and Users had the highest (70%) and pregnant women at 60%. Youth were not queried regarding transport out of state, but 58% were aware of the three remaining regulations.

When exploring whether awareness of laws differed across geographic regions in this sample, we observed that clinicians along the Front Range have slightly higher awareness of laws while retailers are slightly less aware of laws than clinicians and retailers in rural areas. Youth surveyed in Front Range settings were generally more knowledgeable than those in other more rural settings, but their awareness was still low—for example 60% of Front Range youth are aware there are penalties for driving while high compared to 16% of other youth. We observed no differences in awareness of laws among pregnant women surveyed.

Participants in the in-depth interviews indicated a poor understanding of the details of the law. Even retailers who are purportedly well versed in the law in order to sell retail marijuana become confused and perceive the law as evolving.

In general, findings from in-depth interviews suggest more rural communities are in need of education about the law and support around the law.

Figure 6: Attitudes toward marijuana effects, VDT Community Sample

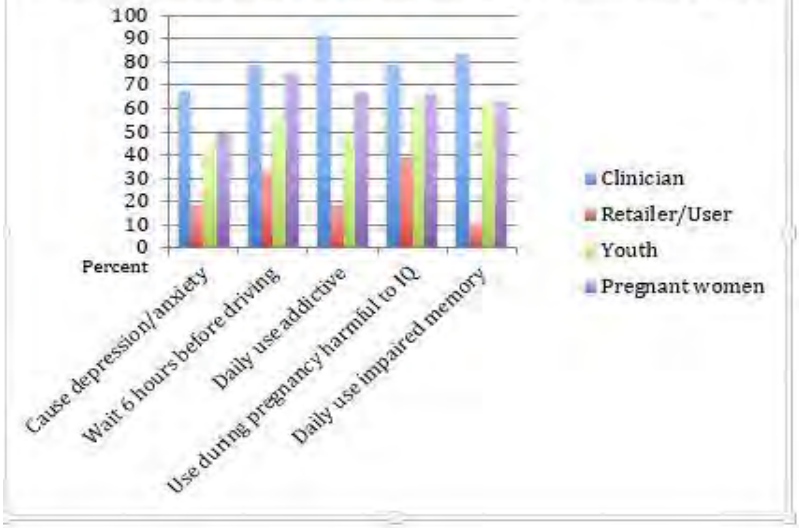
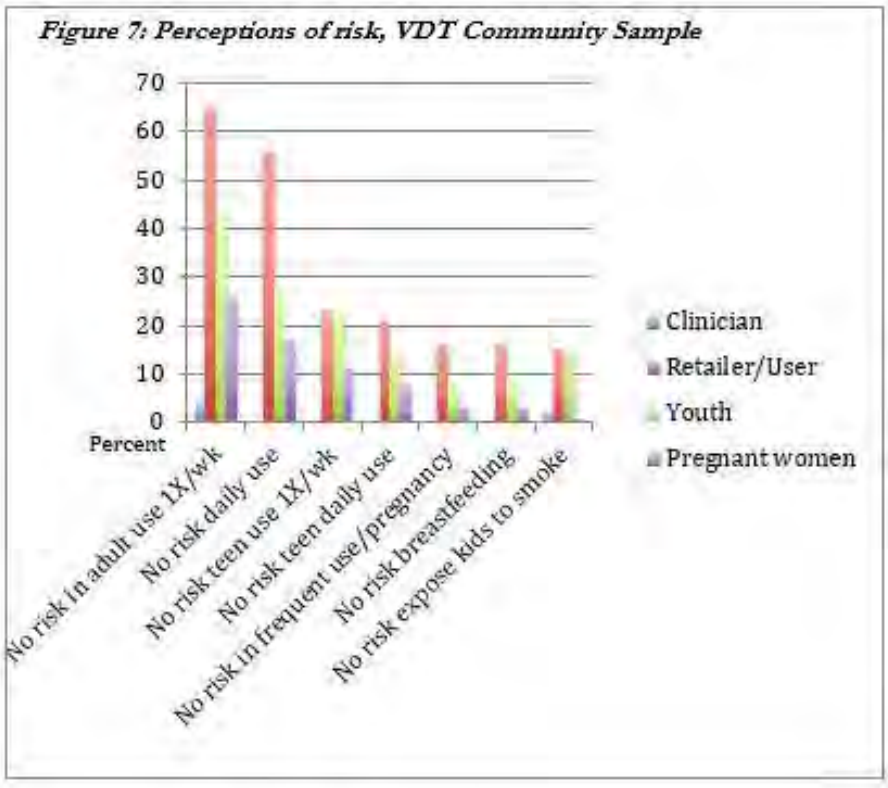


Figure 7: Perceptions of risk, VDT Community Sample



Perception of Risk and Health Effects, Community Sample

The following graphs illustrate attitudes about marijuana use and represent the differences in these across groups surveyed. There are distinct differences between marijuana retailers and users compared to other groups in terms of attitudes that marijuana use can cause depression or anxiety, that daily use among adults is addictive or will impair memory and that use

during pregnancy can be harmful to cognitive development for children. In contrast, clinicians as a group had much higher proportions in agreement with these perspectives. Similar differences are seen when comparing responses to questions of whether there are risks associated with use. As illustrated here, retailers and users agreed much less frequently that daily use for adults is addictive or impairs memory. About 20% of both Retailers and Users and youth alike agreed there was no risk to teens from weekly or daily use of marijuana (data shown in Table 17). Less than 20% of all groups agreed there was no risk related to smoking weekly or daily for pregnant or breastfeeding women.

The in-depth interviews suggested that attitudes about marijuana have not changed substantially since recreational use was legalized. People that were supportive of recreational use remained supportive and those that were not supportive remained not supportive. Participants reported that they had family members who didn't support the law but perceived a benefit so long as the state was getting tax money from recreational sales. There was a perception that community attitudes towards marijuana have become more nuanced. Initially, participants reported, their communities were accepting of recreational marijuana. At present they expressed concern about underage use, and feared that revenues from the recreational industry would seduce people to ignore problems associated with recreational use.

Participants perceived that the primary benefit to Colorado from recreational marijuana was tax revenue. In one instance, it was the tax dollars for schools that changed the thoughts of a community member regarding the law. Another common theme was that of decriminalization. Participants felt that their families and friends were more open and

Table 18. Health knowledge and perceptions of risk, VDT Community Sample

Question:	**Clinician (N=47)**	**Retailer (N=62)**	**Youth (N=241)**	**Pregnant Women (N=151)**
Marijuana can cause depression or anxiety: Agree	32 (68%)	11 (18%)	99 (41%)	74 (49%)
Marijuana can cause depression or anxiety: Disagree	7 (15)	48 (77%)	116 (48%)	51 (34%)
Wait 6 hours after using to drive: Agree	37 (79%)	20 (32%)	134 (55%)	113 (75%)
Wait 6 hours after using to drive: Disagree	3 (6%)	40 (65%)	94 (39%)	16 (11%)
Daily use leads to addiction: Agree	43 (91%)	11 (18%)	119 (49%)	101 (67%)
Daily use leads to addiction: Disagree	3 (6%)	49 (79%)	107 (44%)	36 (24%)
Marijuana use during pregnancy leads to attention problems and lower IQ: Agree	37 (79%)	24 (39%)	149 (62%)	100 (66%

Table 18. Health knowledge and perceptions of risk, VDT Community Sample

Question:	Clinician (N=47)	Retailer (N=62)	Youth (N=241)	Pregnant Women (N=151)
Marijuana use during pregnancy leads to attention problems and lower IQ: Disagree	1 (2%)	32 (52%)	51 (21%)	23 (15%)
Daily use marijuana leads to impaired memory: Agree	39 (83%)	7 (11%)	150 (62%)	95 (63%)
Daily use marijuana leads to impaired memory: Disagree	2 (4%)	49 (79%)	67 (28%)	28 (19%)
No risk in adult using once per week	2 (4%)	40 (65%)	102 (42%)	39 (26%)
High to moderate risk in adult daily use	44 (94%)	24 (39%)	170 (70%)	110 (73%)
No risk in adult daily use	0 (0%)	35 (56%)	64 (26%)	26 (17%)
Risk in teenager using once a week	47 (100%)	45 (73%)	180 (74%)	120 (79%)
No risk in teenager using once a week	0 (0%)	14 (23%)	55 (23%)	17 (11%)
Risk in teenager using daily	47 (100%)	46 (74%)	197 (81%)	127 (84%)
No risk in teenager using daily	0 (0%)	13 (21%)	35 (14%)	12 (8%
Risk in women using often while pregnant	47 (100%)	47 (76%)	203 (84%)	134 (89%)
No risk in women using often while pregnant	0 (0%)	10 (16%)	20 (8%)	4 (3%)
Risk in mother using while breastfeeding	45 (96%)	47 (76%)	205 (85%)	131 (87%)
No risk in mother using while breastfeeding	0 (0%)	10 (16%)	21 (9%)	4 (3%)
Risk in extracting hash oil at home	34 (72%)	52 (84%)	177 (73%)	111 (74%)
No risk in extracting has oil at home	1 (2%)	2 (3%)	34 (14%)	6 (4%)
Risk children being exposed 2nd hand marijuana smoke	44 (94%)	46 (74%)	193 (80%)	126 (83%)

Table 18. Health knowledge and perceptions of risk, VDT Community Sample				
Question:	**Clinician (N=47)**	**Retailer (N=62)**	**Youth (N=241)**	**Pregnant Women (N=151)**
No risk in children being exposed to second hand marijuana smoke	1 (2%)	9 (15%)	35 (14%)	2 (1%)
Risk in consuming more than one serving of edibles	45 (96%)	39 (63%)	183 (76%)	119 (79%)
No risk in consuming more than one serving of edibles	0 (0%)	20 (32%)	44 (18%)	10 (7%)
Risk in storing marijuana in open containers in a home with children	45 (96%)	49 (79%)	192 (79%)	131 (87%)
No risk in storing marijuana in open containers in a home with children	1 (2%)	10 (16%)	38 (16%)	2 (1%)

honest about their marijuana use, due to the perception of decriminalization; this was also expressed with regard to the safety of purchasing marijuana. Users know what they are getting from dispensaries (a higher standard of quality), and do not have to act illegally to procure it. There was high agreement across the sample that extracting hash oil in the home poses a risk, that there are risks with consumption of more than a single serving of edibles, and that there is a risk in storing marijuana in a home with children.

Retailers and Marijuana Users

There were 33 of the 62 Retailers and Users surveyed who have no direct interaction with customers in retail marijuana establishments. The remainder, (31%) indicate asking customers about their experience using marijuana. Among these, there is almost universal attention to discussion of all the elements of the laws shown in the table here.

Table 19. Retailer experiences in educating customers about and compliance with marijuana laws, VDT Community Sample (N=62 Retailers; 33 have direct customer interaction; 19 report discussing specific topics related to Marijuana with customers)				
Topics Discussed with Retail Clients, N=19				
Discussed:	**With inexperienced customers from out of state**	**With experienced customers from out of state**	**With inexperienced customers from Colorado**	**With experienced customers from Colorado**
Marijuana product information on potency and typical dose effect	19 (100%)	19 (100%)	18 (95%)	18 (95%)
Responsible use and dose of edibles	19 (100%)	18 (95%)	18 (95%)	18 (95%)
Medical benefits	19 (100%)	N/A (not asked)	18 (95%)	N/A (not asked)

Table 19. Retailer experiences in educating customers about and compliance with marijuana laws, VDT Community Sample (N=62 Retailers; 33 have direct customer interaction; 19 report discussing specific topics related to Marijuana with customers)

Discussed:	**With inexperienced customers from out of state**	**With experienced customers from out of state**	**With inexperienced customers from Colorado**	**With experienced customers from Colorado**
Personal experiences	18 (95%)	18 (95%)	18 (95%)	18 (95%)
Restrictions on amount that can be purchased	18 (95%)	18 (95%)	18 (95%)	18 (95%)
Laws against taking marijuana across state lines	19 (100%)	18 (95%)	18 (95%)	18 (95%)
Use of marijuana in a public place	17 (89%)	18 (95%)	18 (95%)	18 (95%)
Penalties for giving marijuana to someone under 21	15 (79%)	17 (89%)	16 (84%)	15 (79%)
Laws against marijuana impaired driving	17 (89%)	17 (89%)	17 (89%)	16 (84%)
Storing marijuana out of the reach of children	17 (89%)	17 (89%)	17 (89%)	17 (89%)
Important to prevent youth from accessing marijuana				19 (100%)
Checking ID as effective means of preventing youth from accessing marijuana				19 (100%)
Confiscating fake IDs as effective means of preventing youth from accessing marijuana				19 (100%)
Hiring security guards as an effective means of preventing youth from accessing marijuana				14 (74%)
Signage in the store as an effective means of preventing youth from accessing marijuana				18 (95%)
Taking steps to prevent third party sales as an effective means of preventing youth from accessing marijuana				16 (74%)
Topics Discussed with Retail Clients, N=19				
Discussed:	**With inexperienced customers from out of state**	**With experienced customers from out of state**	**With inexperienced customers from Colorado**	**With experienced customers from Colorado**
Laws against taking marijuana across state lines	19 (100%)	18 (95%)	18 (95%)	18 (95%)
Use of marijuana in a public place	17 (89%)	18 (95%)	18 (95%)	18 (95%)
Penalties for giving marijuana to someone under 21	15 (79%)	17 (89%)	16 (84%)	15 (79%)

Table 19. Retailer experiences in educating customers about and compliance with marijuana laws, VDT Community Sample (N=62 Retailers; 33 have direct customer interaction; 19 report discussing specific topics related to Marijuana with customers)

Discussed:	With inexperienced customers from out of state	With experienced customers from out of state	With inexperienced customers from Colorado	With experienced customers from Colorado
Laws against marijuana impaired driving	17 (89%)	17 (89%)	17 (89%)	16 (84%)
Storing marijuana out of the reach of children	17 (89%)	17 (89%)	17 (89%)	17 (89%)
Important to prevent youth from accessing marijuana				19 (100%)
Checking ID as effective means of preventing youth from accessing marijuana				19 (100%)
Confiscating fake IDs as effective means of preventing youth from accessing marijuana				19 (100%)
Hiring security guards as an effective means of preventing youth from accessing marijuana				14 (74%)
Signage in the store as an effective means of preventing youth from accessing marijuana				18 (95%)
Taking steps to prevent third party sales as an effective means of preventing youth from accessing marijuana				16 (74%)
Important to prevent youth from accessing marijuana				19 (100%)
Checking ID as effective means of preventing youth from accessing marijuana				19 (100%)
Confiscating fake IDs as effective means of preventing youth from accessing marijuana				19 (100%)
Hiring security guards as an effective means of preventing youth from accessing marijuana				14 (74%)
Signage in the store as an effective means of preventing youth from accessing marijuana				18 (95%)
Taking steps to prevent third party sales as an effective means of preventing youth from accessing marijuana				16 (74%)
Retailer behaviors related to marijuana among 62 Retailers and Users				
Have ever extracted hash oil				14 (23%)
Used Butane to extract hash oil				9 (15%)
Used cold water to extract hash oil				6 (10%)
Used alcohol to extract hash oil				9 (15%)
Used CO2 to extract hash oil				1 (2%)
Extracted hash oil at a private home outdoors				6 (10%)
Extracted hash oil at a private home indoors				3 (5%)
Extracted hash oil at work				1 (2%)
Extract hash oil in a public setting outdoors				1 (2%)
Use vented hoods for safety while extracting hash oil				5 (8%)

***Table 19. Retailer experiences in educating customers about and compliance with marijuana laws, VDT Community Sample (N=62 Retailers; 33 have direct customer interaction; 19 report discussing specific topics related to Marijuana with customers*)**	
Avoid using an open flame for safety while extracting hash oil	7 (11%)
Safe storage of flammable materials for safety while extracting hash oil	8 (13%)
Used marijuana in the past 30 days	49(79%)
Used marijuana daily in past 30 days (*of those who used in 30 days)*	36(73%)+
Used marijuana more now than prior to legalization	10 (16%)
Grow their own marijuana	13(21%)
Currently have medical marijuana license or card	35 (56%)
Has purchased marijuana from a retail store in past 30 days	42 (68%)
Has purchased marijuana from a non-retail site	7(11%)
Has used marijuana in a public/outdoor setting among those using Marijuana in 30 days	25(51%)+
Employs safe storage practices in child proof container (among those who store at home, N=54)	29(54%)++
Uses alcohol and marijuana together almost always or always	5(8%)
A minor has asked them to buy marijuana	4(6%)
Have used marijuana to reduce the use of another drug	22 (35%)
Is very comfortable or comfortable discussing marijuana use with a health care provider	55(89%)
Has discussed marijuana with a health care provider in the last 12 months	31 (50%)
Topics Discussed with Retail Clients, N=19	
Safe storage of flammable materials for safety while extracting hash oil	8 (13%)
Used marijuana in the past 30 days	49(79%)
Used marijuana daily in past 30 days (*of those who used in 30 days)*	36(73%)+
Used marijuana more now than prior to legalization	10 (16%)
Grow their own marijuana	13(21%)
Currently have medical marijuana license or card	35 (56%)
Has purchased marijuana from a retail store in past 30 days	42 (68%)
Has purchased marijuana from a non-retail site	7(11%)
Has used marijuana in a public/outdoor setting among those using Marijuana in 30 days	25(51%)+
Employs safe storage practices in child proof container (among those who store at home, N=54)	29(54%)++
Uses alcohol and marijuana together almost always or always	5(8%)
A minor has asked them to buy marijuana	4(6%)

Table 19. Retailer experiences in educating customers about and compliance with marijuana laws, VDT Community Sample (N=62 Retailers; 33 have direct customer interaction; 19 report discussing specific topics related to Marijuana with customers)	
Have used marijuana to reduce the use of another drug	22 (35%)
Is very comfortable or comfortable discussing marijuana use with a health care provider	55(89%)
Has discussed marijuana with a health care provider in the last 12 months	31 (50%)

+among those using Marijuana in the past 30 days; ++among those who store Marijuana at home

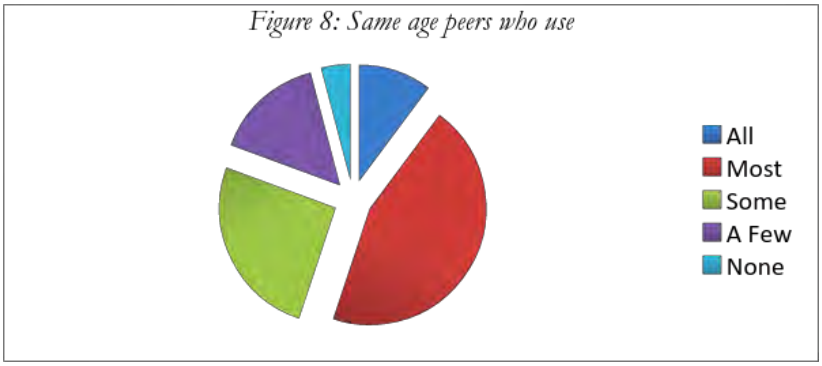
Only 19 participants have direct responsibilities to communicate with consumers. Among these, there is consistently high adherence to communication about the legal requirements related to use with both in-state and out of state customers. Less frequent is the employment of security guards in retail venues and working with third parties to reduce illegal use, although this still remains high at over 70% among those surveyed. Just under a quarter of the Retailers and Users (23%) have extracted hash oil, and the data presented here suggest there is not consistency with regard to safe practices for extraction. The great majority are comfortable discussing marijuana use with their health providers.

One retailer interviewed indicated observing a reduction in the overall stigma associated with marijuana use and also indicated an increase in out of state traffic, and a majority of the patrons being between the ages of 60 and 70.

Youth

The majority of youth surveyed indicated that all or most of their friends use marijuana (54%). Most also indicate their parents have talked to them about marijuana use in general (77%), with varying proportions focused on avoiding use (42%) being aware of health effects (30%) and the consequences of use (35%). Many youth indicate (41%) they believe someone they live with uses marijuana. Youth along the Front Range perceive that it is easier to obtain marijuana compared to youth elsewhere (73% vs. 59%).

Figure 8: Same age peers who use



In-depth interview respondents expressed concerns that the law encourages use in general, but specifically among youth. Youth interviewed reported their friends are using more, and utilize older people to purchase marijuana for them from dispensaries. Youth report smoking hash oil from vape pens and believe hash oil smoked through a vape pen is undetectable. Though many of the youth interviewed did not use marijuana, they had a fairly good idea about how to go about getting it. Many stated that if they did use, they would purchase from a dispensary (expressing no knowledge about age restriction), or from friends at school.

Table 20. Youth perceptions of peer use and experiences with education about marijuana from parents (N=241)

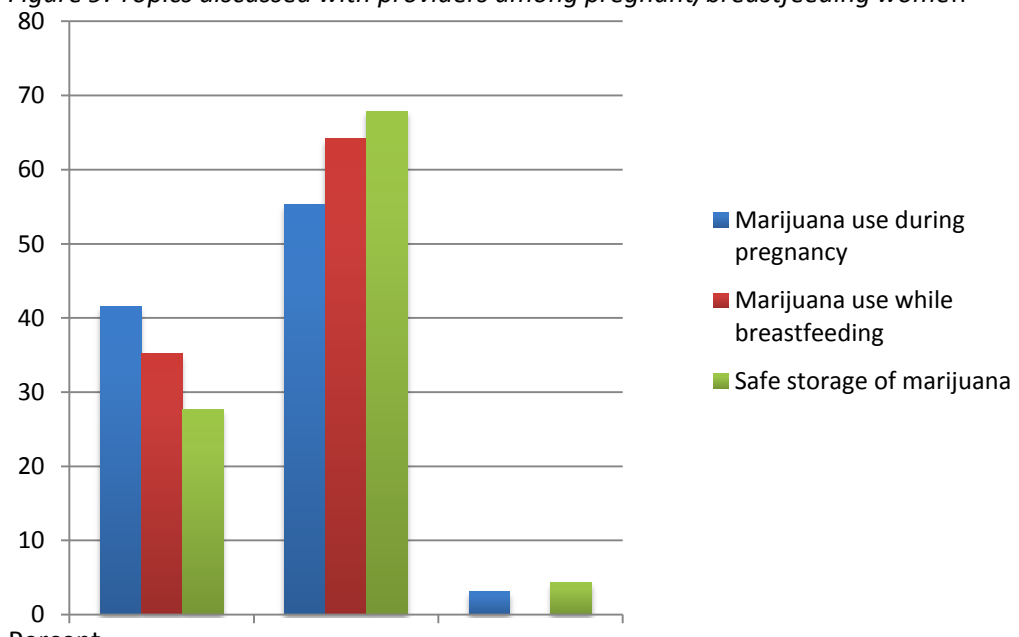
Question:	**Frequency**
How many of your friends do you think use marijuana: All	40 (17%)
How many of your friends do you think use marijuana: Most	62 (25%)
How many of your friends do you think use marijuana: Some	54 (22%)
How many of your friends do you think use marijuana: A few	57 (24%)
How many of your friends do you think use marijuana: None	24 (10%)
How many of peers your same age do you think use marijuana: All	23 (10%)
How many of peers your same age do you think use marijuana: Most	106 (44%)
How many of peers your same age do you think use marijuana: Some	61 (25%)
How many of peers your same age do you think use marijuana: A few	37 (15%)
How many of peers your same age do you think use marijuana: None	9 (4%)
How likely is it that any of the people who live with you use marijuana: Likely	100 (41%)
How likely is it that any of the people who live with you use marijuana: Unlikely	113 (47%)
Parents/guardians have talked with you about marijuana use	185 (77%)
Parents/guardians have discussed not using marijuana with you	102 (42%)
Parents/guardians have discussed if you use to be careful	86 (37%)
Parents/guardians have discussed the health effects of marijuana with you	72 (30%)
Parents/guardians have discussed the consequences of using marijuana with you	85 (35%)
Parents/guardians have told you not to eat marijuana edibles	32 (13%)
Parents/guardians have told you not to drive after using marijuana	62 (26%)
Parents/guardians have discussed news reports concerning marijuana with you	23 (10%)
Parents/guardians have discussed their personal experience with marijuana with you	48 (20%)
Spoke with a care provider in the past 12 months about marijuana use	87(36%)
Easy to get marijuana if you wanted it	169 (70%)
Hard to get marijuana if you wanted it	61 (25%)
Definitely or probably will be using marijuana in five years	107 (44%)

Youth indicated that they have gotten in trouble with parents (N=75 or 48% of the sample indicating use) or school or law enforcement (N=47 or 30% of the sample indicating use) due to use or marijuana possession (N=48 or 19% of the sample indicating use).

Pregnant and Breastfeeding women

We asked 151 pregnant and breastfeeding women to report on the frequency with which their providers talked to them about using marijuana while pregnant or breastfeeding, and whether they discussed safe storage of marijuana to prevent access by children. Results shown here indicate that discussions on these topics are not typical; only 41% of women indicate their provider discussed marijuana use during pregnancy; 35% discussed marijuana use and breastfeeding, and 27% discussed safe storage. Women appear comfortable discussing these topics with their providers: 62% indicate they are very comfortable and 21% somewhat comfortable and only 11% indicate they are not at all comfortable discussing marijuana use and storage with a provider. None of the pregnant women or breastfeeding women who indicated they had used marijuana indicated they had it at home, so when considering how and whether they engaged in safe storage to avoid children being exposed to marijuana, none of the children of women in this sample were at risk.

Figure 9: Topics discussed with providers among pregnant/breastfeeding women



Clinicians

Table 21 presents responses to questions specific to clinicians focused on their behaviors related to counseling patients about marijuana use. Among those who provide care to pregnant patients (66% of those surveyed), 74% rely on a nurse or non-primary care provider to communicate with women about marijuana—the primary care providers do this much less (23%). This is dissimilar for what occurs among those serving breastfeeding women; 34% indicate a nurse or non-primary care provider will communicate

about marijuana and 47% indicate a primary care provider does. Although 45% indicate they are confident about initiating a conversation about marijuana, clinicians generally report not spending much time discussing marijuana and not being very knowledgeable about or well trained to discuss marijuana risks to pregnant and breastfeeding women. When asked what would be useful to address these deficits, the most popular options were to offer clinical guidelines and in-person training on the effects of marijuana, and to develop effective patient education materials related to marijuana.

Table 21. Clinician preparedness and behaviors related to marijuana counseling (N=47)

The following questions were asked of all 47 clinicians				
Get information about health effects of marijuana from personal research				20 (43%)
Get information about the health effects of marijuana from workplace				14 (30%)
Get information about the health effects of marijuana from leadership at workplace				5 (11%)
Get information about the health effects of marijuana from the public health department				11 (23%)
Get information about the health effects of marijuana from CDPHE				18 (38%)
Get information about the health effects of marijuana from federal websites like CDC or NIH				16 (34%)
Type of patient served	Pregnant women	Breastfeeding women	Adolescents	Children
Do you provide care to this group?	31 (66%)	37 (79%)	35 (75%)	33 (70%)
Do you use a pre visit questionnaire to screen this group re: Marijuana?	10 (21%)	6 (13%)	11 (23%)	N/A (not asked this question)
Does a Nurse in your clinic communicate with this group about Marijuana?	35 (74%)	16 (34%)	17 (36%)	10(21%)
Does a Primary Care Provider in your clinic communicate with this group about Marijuana?	11 (23%)	22 (47%)	N/A (not asked this question)	16(34%)
Among Clinicians who serve each group	*N=31*	*N=37*	*N=35*	*N=33*
Discuss marijuana with these patients every time	2 (6%)	3 (8%)	3 (9%)	1 (3%)
Discuss marijuana with these patients most of the time	8 (26%)	5 (14%)	7 (20%)	3 (9%)
Discuss marijuana with these patients some of the time	6 (20%)	6 (16%)	6 (17%)	5 (14%)

Table 21. Clinician preparedness and behaviors related to marijuana counseling (N=47)

Type of patient served	Pregnant women	Breastfeeding women	Adolescents	Children
Discuss marijuana with these patients infrequently	6 (20%)	12 (32%)	10 (29%)	8 (23%)
Do not discuss marijuana with these patients	10 (32%)	10 (27%)	9 (26%)	16 (46%)
Spend less than 3 minutes discussing marijuana with these patients	14 (45%)	16 (43%)	19 (54%)	10 (30%)
Spend 3 minutes or more discussing marijuana with these patients	7 (23%)	9 (24%)	7 (20%)	7 (21%)
Discuss risks of exposure to secondhand marijuana smoke with these patients	11 (35%)	15 (43%)	13 (37%)	11(33%)
Discuss risks associated with use for this group	20 (65%)	20 (54%)	17 (49%)	9 (27%)
Discuss safe storage of marijuana products in the home	3 (10%)	6 (16%)	7 (20%)	10 (30%)
Knowledgeable about health risks associated with marijuana use for these patients	22 (71%)	15 (41%)	14 (40%)	N/A
Not very or not knowledgeable about health risks associated with marijuana use for these patients	9 (29%)	21 (57%)	21 (60%)	N/A
Feel adequately trained regarding health risks associated with marijuana use for these patients	11 (35%)	8 (22%)	21(60%)	N/A

Table 21. Clinician preparedness and behaviors related to marijuana counseling (N=47)

Type of patient served	Pregnant women	Breastfeeding women	Adolescents	Children
Inadequately trained regarding health risks associated with marijuana use for these patients	20 (65%)	27 (73%)	14 (40%)	N/A
Confident initiating a conversation with these patients about risks of marijuana use	21 (68%)	22 (59%)	8 (23%)	20 (61%)
Not confident initiating a conversation with these patients about risks of marijuana use	10 (32%)	15 (41%)	27 (77%)	13 (39%)
In person training on the evidence from scientific literature on the risks of use for this group would make feel more confident when talking with them about the risks	17 (55%)	21 (58%)	23 (66%)	20 (61%)
A webinar on the evidence from scientific literature on the risks of use for this group would make feel more confident when talking with them about the risks	14 (45%)	17 (46%)	18 (51%)	13 (39%)
Clinical prevention guidelines on the known risks and recommendations for marijuana use for this group would make feel more confident when talking with them about the risks	17 (55%)	22 (59%)	25 (71%)	17 (52%)

Table 21. Clinician preparedness and behaviors related to marijuana counseling (N=47)				
Type of patient served	Pregnant women	Breastfeeding women	Adolescents	Children
A script for healthcare providers to guide conversations about risks of marijuana use for these patients would make more confident when talking with them about the risks	8 (26%)	11 (30%)	12 (34%)	11 (33%)
Patient directed materials to provide information and referrals on the health effects of marijuana use or exposure would make more confident when talking with this group about the risks	18 (58%)	21 (57%)	21 (60%)	14 (42%)

Clinicians responding to in-depth interviews reported that their interactions with patients related to marijuana are easier given decriminalization; it gives them greater leeway to discuss marijuana. In general they believe there is a dearth of quality research on marijuana use, particularly for pregnant women, but consistently report counseling against use based on the current evidence available.

One clinician reported that pregnant and parenting patients have an increased concern about child protective services taking their children if they are found to smoking marijuana, a finding echoed among the pregnant women interviewed.

Clinicians would endorse information that educated patients about safety (e.g. *"use a buddy system for using if a parent"*), risks, second-hand smoke and services about mental health (for people that use marijuana for mental health management), and how to properly store edibles.

Next Steps and Recommendations

Recommendations for educational efforts include efforts to educate the public about specific elements of the laws related to retail marijuana use, particularly to raise awareness that it is only legal to consume retail marijuana for those aged 21 and older; that marijuana may not be consumed outdoors; that marijuana cannot be transported out of state, and that persons can be cited for driving under the influence of marijuana.

Recommendations also include suggestions to emphasize educational efforts to raise awareness about the risks related to marijuana use, specifically for youth, pregnant and breastfeeding women. It is critical to consider tailoring educational campaigns for specific audiences, to ensure greater success. For example, educational campaigns for youth can focus more explicitly on risks associated with youth brain development;

those for pregnant and breastfeeding women can focus more explicitly on risks for child development. We also recommend efforts to increase awareness that daily use can have negative effects; that care should be taken when consuming edibles to avoid over-consumption; and that use of child proof containers for any type of marijuana are critical. Finally, given the important role that clinicians play in interacting with the populace, we recommend clinician specific education to raise their awareness of laws and scientific evidence on risks associated with marijuana use for adults, youth, pregnant and breastfeeding women, and children.

The mixed-mode and VDT community surveys were successfully completed under challenging time constraints from the legislature, thanks in large part to longstanding relationships with partner organizations that represent diverse Colorado communities affected by marijuana. Our many previous projects with these organizations have adhered closely to principles of Community Based Participatory Research (CBPR).[3] We fully engage community partners in all aspects of the work, from conception of studies to design and data collection, to creation and dissemination of findings. The VDT community survey was less adherent to CBPR than is healthy for maintaining community partner trust, and we noted a number of partner concerns about the timeline and reduced opportunities for full participation and partnership. The evaluation team and CDPHE should consistently review plans and timelines, and revise these as needed to ensure that ongoing evaluation activities with Colorado communities will maintain the full integrity of CBPR principles.

Evaluation Secondary Goals (Goal 2)

Goal 2 Evaluation Overview

The focus for Goal 2 of the program evaluation examines system-level activities relating to the distribution and utilization of retail marijuana prevention and educational resources.

There are four main objectives of this goal:

Objective 2.1) Document the distribution and assess the utility and implementation of retail marijuana prevention and educational resources provided at Colorado Department of Public Health and Environment's (CDPHE's) Regional Trainings.

Objective 2.2) Document the distribution and assess the utility and implementation of retail marijuana prevention and educational resources provided by CDPHE's Technical Assistance Program.

Objective 2.3) Document and assess the impact of retail marijuana collaboration activities between CDPHE and other State agencies.

Objective 2.4) Document and evaluate the alignment of retail marijuana messaging efforts across State agencies.

[3] See Israel, B.A., Schulz, A.J., Parker, E.A., & Becker, A.B. (1998). Review of community-based research: Assessing partnership approaches to improve public health. *Annual Review of Public Health,* 19, 173-202.

The following section details the results of these objectives. Throughout this section of the report we refer to state work efforts in terms of health, safety, prevention, laws and educational efforts. We refer to these terms in an attempt to organize and discuss general patterns in state activities; however, work in these areas often overlap and the topics can be fairly dynamic as needs around retail marijuana evolve. Activities in health include work that pertains to possible health effects of using marijuana, such as youth development and pregnancy or breastfeeding concerns. Safety refers to the use, storage or marking of marijuana to reduce harm, such as driving while unimpaired, dosage, labeling requirements and storing away from children and pets. Prevention focuses on limiting the use of marijuana with underage or at-risk groups. Laws pertain to work that emphasizes the legal parameters of Amendment 64. Lastly, education refers to disseminating information to the public or other agencies and organizations about the aforementioned topics or other areas of interest in retail marijuana. Education includes, but is not limited to general discussions, instruction or sharing materials.

CDPHE Regional Trainings

Methods

Objective

Document the distribution and assess the utility and implementation of retail marijuana prevention and educational resources provided at Colorado Department of Public Health and Environment (CDPHE) regional trainings.

Regional Training Overview

Regional trainings target professionals who work with youth. The trainings are a collaborative effort between CDPHE, Colorado 9 to 25, and the Omni Institute. A total of six full-day regional trainings were held throughout Colorado in the State Fiscal Year 2015 in Denver, Boulder, Alamosa, Glenwood Springs, Durango, and Golden. Each training integrated information about retail marijuana and the *Positive Youth Development* framework for working with children and youth. For the purposes of this evaluation, this report summarizes the training curriculum focusing on retail marijuana efforts only.

Regional trainings provided an overview of information pertaining to the passage of Colorado's Amendment 64. Presenters outlined the legislative components of the bill and introduced attendees to marijuana resources and supports that could be incorporated into their current work efforts. The trainings included a discussion and viewing of Colorado's primary resources for marijuana information; the state of Colorado's marijuana website portal and CDPHE's technical assistance program (https://retailmjeducation.freshdesk.com/support/tickets/new). Participants also viewed CDPHE's 2015 retail marijuana media campaign, *Good to Know*. Attendees received instructions about how they can access media campaign materials for their personal use and distribution. In addition to reviewing marijuana educational resources attendees participated in breakout sessions in which individuals shared the marijuana activities carried out by their respective organizations. Attendees also talked about ways to incorporate marijuana education and prevention information using the *Positive Youth Development* approach. All attendees received take-home materials including; Substance Abuse and Mental Health Services Administration's *Strategies/Interventions for Reducing Marijuana Use,* retail marijuana factsheets (*Tips for Parents, Youth and Marijuana*, *Tips for Youth-Serving Professionals*) and the results from *Healthy Kids Colorado Survey* - marijuana use and beliefs and a page of state and partner marijuana prevention resources.

Assessment Processes and Procedures

Attendees received a pre-post retrospective survey to assess their marijuana knowledge and resource utilization at the beginning of each training. The survey asked attendees to rate their familiarity with marijuana education and prevention resources before the training and once again after the training was complete. Attendees gauged their likelihood to use the training information and identified specific components that could be incorporated immediately into their work with youth. Other programmatic and participant information was recorded in a training event log.

Data Collection Tools and Development

Appendix 2-I *Regional Training Event Log:* captured specifics about each training session, such as; attendee information, training curriculum and materials distributed.
Appendix 2-II *Pre-Post Retrospective Evaluation*: captured the attendees' impression of the training and their implementation of retail marijuana prevention and education efforts since the event.

Evaluation Findings: Regional Trainings

Attendee Characteristics

Nearly 400 people attended the regional trainings, representing a variety of organizations such as local health departments, community health organizations, non-profit youth serving organizations and public safety organizations. The response rate for training evaluations varied by location: 68%for Denver, 67%for Boulder, 80%for Alamosa and 73%for Glenwood Springs, 75%for Durango and 67%for Golden (see Table 22).

Table 22. Regional Training Location & Attendee Affiliations

Date	Location	# of People Attending	# of Surveys Returned	Return Rate	Example of Attendee Organizations
2/26/15	Denver	72	49	58%	Army National Guard
					Children's Hospital Colorado
					CO Dept of Education
					CO Dept of Human Services
					Office of the Attorney General
					Teller County Sheriff's Office
3/16/15	Boulder	116	78	67%	Boulder Valley School District
					Cannabis Patients Alliance
					CU-Boulder
					Division of Child Welfare
					I Have A Dream Foundation
					Longmont Municipal Probation
					Colorado Springs Fire Department
4/15/15	Alamosa	49	39	80%	Center High School
					Mountain Valley School District
					Posada
					Saguache County Public Health
					Tu Casa
4/24/15	Glenwood Springs	60	44	73%	Craig Police Department
					Garfield County Public Health
					Head Start
					Teller County Public Health

Table 22. Regional Training Location & Attendee Affiliations

Date	Location	# of People Attending	# of Surveys Returned	Return Rate	Example of Attendee Organizations
5/29/15	Durango	20	15	75%	Boys & Girls Club of La Plata County
					Hinsdale County Public Health
					Americorps Boys and Girls Club
6/5/15	Golden	75	50	67%	Jefferson County Public Schools
					Jefferson County Public Health
5/29/15	Durango	20	15	75%	Boys & Girls Club of La Plata County
					Hinsdale County Public Health
					Americorps Boys and Girls Club

A variety of agencies working with youth attended Regional Trainings. During the six trainings, nearly 400 individuals attended the events and most completed an evaluation.

Nearly all attendees worked with organizations that interacted with youth, while the majority worked with adolescents nine to 17 years old (Table 23). This suggests that the regional trainings effectively drew in members of their target demographic and the needs of the attendees' organizations appeared appropriately suited to the training material, at least in terms of age.

Table 23. Age Distribution of Youth Involved with Attendee Organizations		
	#	%
Children (ages 8 or younger)	110	40%
Early adolescents (ages 9 -13)	195	71%
Adolescents (ages 14-17)	228	83%
Young adults (ages 18-25)	144	52%
**Multiple responses allowed*		
Most attendees interacted with children between 9-17 years old.		

Attendee Satisfaction

Satisfaction ratings for regional trainings were high. Seventy-one percent of respondents rated the facilitator's engagement style as very engaging, the uppermost option of three response choices. High ratings were also given for measures of facilitator impact, including "use of a variety of effective facilitation strategies" (average 3.7/4.0), "effectively acknowledged/answered questions and concerns" (average 3.7/4.0), and "created an effective learning environment" (average 3.6/4.0). This information indicates that the trainings effectively delivered information to their audience and possessed the potential for attendees to disseminate effectively this information to their target population. The effectiveness of attendees' use of the information is only a suggestion, however, and needs to be studied further (Table 24).

Table 24. Attendee Reports of Facilitator Engagement and Satisfaction		
	#	%
Rated training as "very engaging"	144	71%
Facilitator Impact Rating Scale 1-Strongly Disagree 2-Disagree 3-Agree 4-Strongly Agree	Average	Standard Deviation
Used a variety of effective facilitation strategies	3.7	0.5
Effectively acknowledged and answered questions and concerns	3.7	0.5
Created an effective learning environment	3.6	0.6
Satisfaction ratings for Regional Trainings were high and indicate that the events effectively delivered information to their audience.		

Immediate Impact of Trainings

In order to evaluate the impact of the regional trainings we asked attendees to rate their ability to identify marijuana prevention resources or programs before and after the training and their likelihood to use the information. Prior to the event attendees rated their knowledge of marijuana prevention resources or programs between "not very skilled" and "somewhat skilled." After training attendees reported that their knowledge improved, rating their skill level between "somewhat skilled" and "very skilled". This pattern was similar across training sites (Table 25).

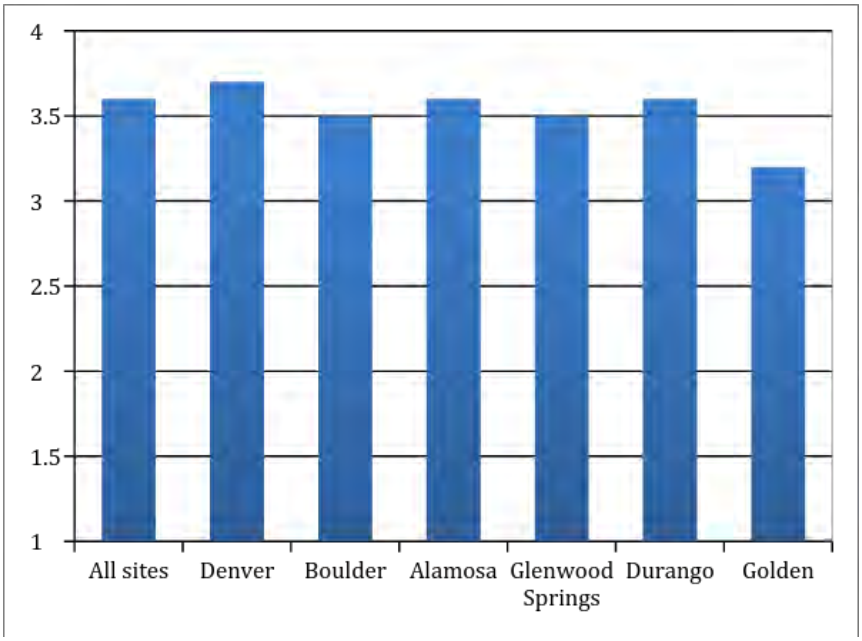
Table 25. Attendees' Knowledge of marijuana Prevention Resources/Programs

Rating Scale 1-Not at all skilled 2-Not very skilled 3-Somewhat skilled 4-Very Skilled	**Pre-Training Knowledge Average**	**Post-Training Knowledge Average**	**T**	**p-value**
All sites	2.1	3.5	-10.135	<.001
Denver	2.6	3.6	-10.202	<.001
Boulder	2.4	3.7	-8.753	<.001
Alamosa	2.6	3.6	-9.347	<.001
Glenwood Springs	2.8	3.7	-3.627	.005
Durango	2.1	3.6	-4.391	<.001
Golden	2.1	3.5	-10.135	<.001

Across sites, regional training attendees' reported that their knowledge of marijuana prevention resources improved.

Attendees rated their likelihood to use the marijuana resources they received at the regional trainings between "likely" or "highly likely" (Figure 10). In open-ended comments attendees noted that they could use marijuana fact sheets and the Colorado state marijuana website immediately with their target populations. The ratings suggest that information distributed at the regional trainings improved attendees' knowledge of state resources, that the material was appropriate to the needs of the audience and there was information that could be readily incorporated into their programs.

Figure 10: Likelihood of utilizing the Regional Training Information



Rating Scale

1-Very Unlikely

2-Unlikely

3-Likely

4-Very Likely

Attendees reported a high likelihood of utilizing the Regional Training information; CDPHE will assess the actual implementation of this in late 2015.

Additional Information/Materials

Attendees had the opportunity to specify additional retail marijuana materials or educational information they needed to support their work with youth. We identified three themes from respondents' requests. Attendees wanted to receive; evidence-based information about marijuana prevention programming, best practices from youth-focused marijuana education and prevention programs, and instruction about how to incorporate marijuana prevention information into the Positive Youth Development approach. Many attendees also commented about their desire for increased networking opportunities. Although not specifically stated these themes suggest that agencies working with youth currently lack formal evidence demonstrating successful youth-oriented marijuana programming efforts and would benefit from increased information sharing among existing programs.

Next Steps and Recommendations

1. Information from the regional training log and survey were useful for understanding the immediate impact of the training, however, longer-term results are needed. To this end, CDPHE will issue follow-up surveys to participants four months post training. This approach will allow us to identify which information is being implemented locally over time.

2. Attendees requested evidence-based data specifically targeting marijuana youth prevention, thereby warranting increased support to develop new programmatic efforts or increased information sharing in this area.

3. Attendees requested best practice data about programs currently and successfully implementing marijuana prevention and education information with youth. A survey to assess successful programs and promising practices is recommended.

4. This evaluation focused on the needs of a general youth audience. Further examination of regional trainings' impact on programs serving at-risk groups should be assessed.

Technical Assistance Program

Methods

Objective

Document the distribution and assess the utility and implementation of retail marijuana prevention and educational resources provided by CDPHE's technical assistance program.

Technical Assistance Overview

In September 2014, CDPHE formalized a technical assistance program to provide information and resources to the public about retail marijuana. While anybody can request technical assistance the program is geared towards community agencies, community coalitions, state partners and those working with youth or other at-risk groups. Technical assistance may include, but is not limited to; the distribution of retail marijuana campaign materials and toolkits, state and local policy and legislation information, updates on state retail marijuana activities, and youth prevention strategies. The service can be requested via an online portal (https://retailmjeducation.freshdesk.com/support/tickets/new), by phone or in-person.

Assessment Processes and Procedures

CDPHE's technical assistance program was assessed using a variety of data collection mechanisms; a baseline survey needs assessment of all requestors, an initial two week follow-up survey, a two month follow-up survey and telephone interviews. The baseline survey documented clients' needs and affiliation and was collected for every individual. The other data collection methods assessed clients' satisfaction and utilization of the technical assistance information. The initial follow-up and telephone interviews were alike: only the follow-up survey, and possibly, the telephone interviews allowed more time to implement the technical assistance information. Everybody who submitted a request for technical assistance was invited to complete the initial and two month follow-up survey, which were delivered online via the Survey Monkey platform. Everybody received a request for a telephone interview although, due to question overlap, only those who had not completed the baseline or two month survey were allowed to participate.

Data Collection Tools and Development

Appendix 2-III *Baseline Survey Needs Assessment:* documented requestors' satisfaction and implementation of technical assistance material, the Colorado School of Public Health developed two follow-up surveys.

Appendix 2-IV *Follow-up Survey (Initial follow-up, two month/telephone interview):* captured requestors' perception about the appropriateness and utility of the technical assistance, their

satisfaction with technical assistance services, and their subsequent implementation of technical assistance information.

Evaluation Findings: Technical Assistance Program

Requestor Needs

Requestor Affiliation

From Nov. 15, 2014, through Mar. 31, 2015, the technical assistance service received 68 unique requests for information. Most contacts were initiated by the online portal (73%), followed by phone calls (18%). The majority (77%) of organizations resided in Colorado. Denver County agencies made the majority of requests (31%), although a substantial number came from other Colorado counties (Table 26). There were eight requests from other US states and one from Canada.

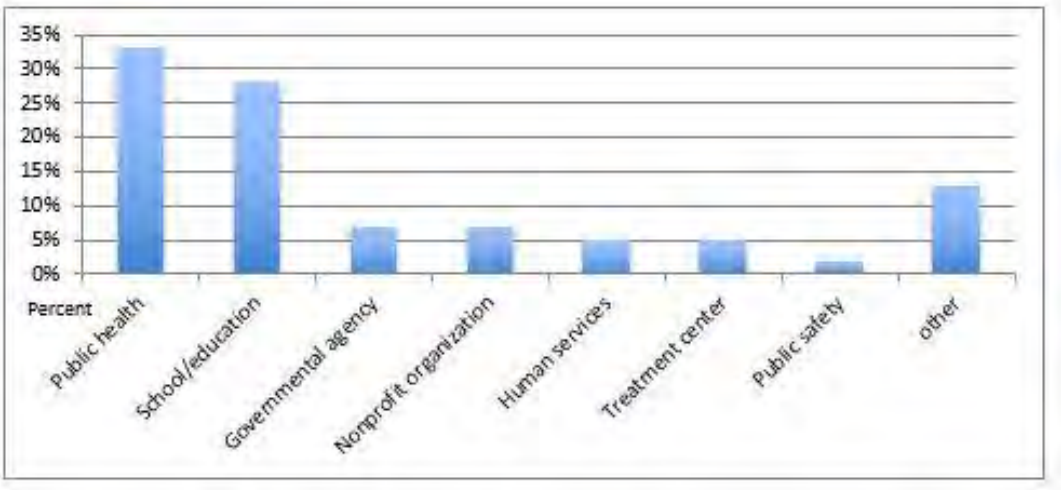
Table 26. Requestors' Organization Information

	#	%
Colorado-Based Requests	52	77%
Colorado Counties		
Denver	16	31%
Lake	3	6%
Adams	3	6%
El Paso	3	6%
Pueblo	3	6%
Grand	3	6%
Fremont	2	4%
Broomfield	2	4%
other	15	29%

The majority of requests came from Denver County, although 34/68 requests came from other Colorado counties.

As seen in Figure 11, the focus of organizations requesting technical assistance spanned many domains but was primarily represented by public health (33%) and schools (28%). Agency domain for eight requestors is unknown.

Figure 11: Primary Focus of Requestor's Organization



Information Areas

Participants requested a large variety of information and often more than one type of data (Table 27). In order of popularity the five most requested items included; marijuana prevention and education information (48%), information about marijuana media campaigns (19%), contact referrals (18%), laws and regulation information (16%), and school-based resources (16%). Several requestors asked about marijuana information that retailers needed to know. Among all technical assistance requests, 35% wanted information about working with or talking to youth.

Table 27. Information Requested

	#	%
Prevention/education	29	48
Campaign resources	12	19
Referrals	11	18
Laws/regulation	10	16
School resources	10	16
Talking to the community	7	10
Presentation/training request	4	6
Funding opportunities	3	5
Health effects	3	5

Table 27. Information Requested		
	#	%
Opportunities for involvement	3	5
Responsible Vendor Program details	3	5
Safe storage	3	5
Talking to children	3	5
Edibles labeling	2	3
Program evaluation activities	2	3
Other	9	15
*Multiple responses allowed, frequency may exceed 100%. Missing data for 7 requests.		

TA Use and Dissemination

A total of 39 individuals, out of a possible 68, responded to either the online initial, two month or telephone-based survey yielding a response rate of 57%.

Use of Information

All but one individual (93%) reported using, or intending to use, the information they received. Information was used; in presentations (51%), to increase personal or organizational knowledge about marijuana laws (49%), to develop or modify existing programs (27%), in workplace or school-based policies (12%), to increase personal or organizational knowledge about marijuana health research (12%), or in papers, manuscripts or reports (5%). Many participants used the information for multiple uses (Table 28). Among the "other" uses of the data, respondents said they have or would implement the information in local political advocacy, for Boy Scouts Citizenship Merit Badge activities and in pitches for advertising sales.

Table 28. Use (or Intended Use) of Information		
	#	%
Any Use (or intended use) of Information	38	93%
How Information Was/Will Be Used		
In a presentation	21	51%
Increase knowledge about marijuana laws	20	49%
Develop/modify existing program	11	27%

Table 28. Use (or Intended Use) of Information		
	#	%
Workplace or school policies	5	12%
Increase knowledge about marijuana health research	5	12%
Papers, manuscripts, or reports	2	5%
Other	7	17%
*Multiple responses allowed, frequency may exceed 100%		
Nearly all respondents said they have (or planned to) use the Technical Assistance information. The most frequent method for distribution was in presentations or increasing personal/workplace knowledge about marijuana laws.		

Dissemination of Information

The use of information was not siloed; 73% of respondents shared the information or materials with others. Respondents said that they provided information with colleagues, coworkers or in the workplace (39%), students (24%), the public (17%), community coalitions (13%), parent groups (7%), and the legislature (5%) (Table 29). Given the large number of individuals who shared the information, it seems clear that the marijuana information was distributed well-beyond the initial requestor.

Table 29. Information Sharing

	#	%
Any Information Sharing	30	73%
How Information was Shared		
Colleagues, coworkers, workplace	16	39%
Students	10	24%
General public	7	17%
Community coalition	4	13%
Parent group	3	7%
Legislature	2	5%
Other	11	27%
*Multiple responses allowed, frequency may exceed 100%		

The large number of respondents reported sharing the information with others and many shared it with more than one person or group. This indicates that the information was distributed well-beyond the initial requestor.

Other Information Sources

The Colorado Department of Public Health and Environment was not the only state agency to provide marijuana information to the requestors. Among the 16 respondents that received information from other sources, the Colorado Department of Human Services (38%) and the Department of Education (25%) provided the most information. Additionally, information was provided by the Department of Revenue, the Governor's Office and the Department of Transportation (Table 30).

Table 30. Additional marijuana Information

	#	%
Any Info received from other state agencies	16	42%
Frequency of Other Sources		
Colorado Department of Human Services	6	1%

Table 30. Additional marijuana Information		
	#	%
Colorado Department of Education	4	25%
Colorado Department of Revenue	1	6%
Governor's Office	1	6%
Colorado Department of Transportation	1	6%
Unknown	3	19%

Respondent Satisfaction

Respondents rated their satisfaction and the utility of technical assistance information on a five-point scale with higher scores representing stronger agreement with each statement. Overall, respondents appeared satisfied with technical assistance services and agreed with statements inquiring about the ease of request (average: 4.5), TA response time (average: 4.3), likeliness to use the service again (average: 4.3) and likeness to recommend the service to others (average: 4.3). This information is important to the evaluation because high satisfaction and willingness to use the information speaks to the anticipated utility of the technical assistance data (Table 31)

Table 31. Satisfaction with Technical Assistance Service		
Scale: 5=Strongly Agree 4=Agree 3=Neither Agree nor Disagree 2=Disagree 1=Strongly Disagree	**average**	**standard deviation**
It was easy to make a request for assistance with CDPHE.	4.5	0.7
CDPHE responded to my request in a reasonable amount of time.	4.3	0.9
I would use CDPHE's Technical Assistance service again.	4.4	0.8
I would recommend CDPHE's Technical Assistance services to others.	4.4	0.7
Respondents expressed high satisfaction and willingness to use the Technical Assistance information.		

Effectiveness of TA Service/Information

Respondents felt the information they received was easy to understand (average: 4.1), helpful (average: 4.3), met the needs of their request (average: 4.3) and was appropriate to their audience (average: 4). Average scores were slightly lower regarding the information's ability to expand beyond what had been previously seen/published (3.8). Lower average scores were also received for improving requestors' current knowledge of marijuana research (3.8), marijuana laws (3.8) and understanding how the state is responding to changes in marijuana legislation (3.9). (See Table 32).

Table 32. Effectiveness of Technical Assistance Service

The information I received… *Scale: 5=Strongly Agree 4=Agree 3=Neither Agree nor Disagree 2=Disagree 1=Strongly disagree*	**average**	**standard deviation**
...was easy to understand.	4.1	1.2
...was helpful.	4.3	1.0
…met the needs of my request.	4.3	1.0
…went beyond what I have previously seen (published) in this area.	3.8	1.2
…was appropriate to the needs of my audience (e.g., age-appropriate, culturally- appropriate, language-appropriate)	4.0	1.1
…improved my knowledge about marijuana research.	3.8	1.2
…improved my knowledge about current marijuana laws or legislation.	3.8	1.2
…improved my knowledge about how the State of Colorado is responding to changes in marijuana legislation.	3.9	1.2

Requests for Additional Information

Respondents identified a variety of suggestions that they would like to see developed for the technical assistance service, as shown in Table 33. Many recommendations centered on materials or information directed towards youth prevention and education, as well as the development of social media targeting children. Others wanted information that was easier to access or distribute. Similar to suggestions made during regional trainings, individuals requested information about specific marijuana educational programs currently in operation.

Table 33. Requests/Suggestions for Additional Information

Offer a webcast for resources/information
Online library of local marijuana ordinances/policies
Examples of actual marijuana program policies and programs
Links to studies, regulations, best practices, number of retail outcomes
Research about short-term (social, legal) consequences of legalized marijuana
Information about the impact of legalized marijuana on youth use
Youth education and prevention information on a portable device
marijuana informational podcasts
Table/maps of areas with stricter marijuana polies

Table 33. Requests/Suggestions for Additional Information
Grant information
Q&A on questions that might come up in legal situations (e.g., Can you smoke marijuana on your porch? Can you have pot and guns in your house at the same time?)

Information Not Yet Available

Information requested through the technical assistance program that has not yet been developed includes model policy recommendations at the county and municipality level. Individuals requested data detailing recommendations for; the number of retail marijuana shops per county and municipality, retail sales tax dollars, language for prevention efforts with considerations for population differences, municipality layout, and urban versus rural differences. CDPHE also fielded requests for a self-paced online educational tool for students who are caught breaking school district policies regarding marijuana on school property, similar to tobacco cessation programs for youth such as *NOT on Tobacco* or *Second Chance*. Lastly, the department noted multiple requests for presentations to parents, schools, high school student groups and teacher meetings. At present these types of public presentations are not the outreach priority of the department, nor is there the resource capacity available to meet the needs of all requests.

Next Steps and Recommendations

1. Most utilization data gathered in this evaluation was collected quickly after requestors received the technical assistance information. Because it can take several months for programs and agencies to utilize the information, we recommend reassessing a sample of requestors to better understand their use and dissemination of the materials between four and six months post-request.

2. Currently most technical assistance information is available in English, with plans for Spanish-speaking materials in development. Increasing the availability of information in other languages and tailoring the material for non-dominant groups is advised. Such material should be developed with input from the community.

3. Due to the large number of requests for retail marijuana presentations, the development of a Teach-the-Teacher type of training model could more broadly disseminate marijuana prevention and educational information to youth and at-risk groups.

Collaboration Activities

Methods

Objective

Document and assess the impact of retail marijuana collaboration activities between the CDPHE Retail Marijuana Education Program and other state agencies.

Collaboration Overview

Many Colorado state agencies are involved in retail marijuana efforts addressing the public's regulatory, prevention or educational needs. To help meet their respective missions agencies frequently work together to share information and pool their knowledge and expertise. Collaboration occurs in many forms. For example, state agencies may participate in; inter-organization advisory meetings, workgroups or joint presentations, share data and resources, or make referrals to other state agencies for information. Collaboration is important for state-wide initiatives because it can align the consistency and speed in which information that is provided to the public. For the purposes of this evaluation we were only interested in collaboration between CDPHE and other organizations: therefore, the extent to which agencies collaborated with other organizations without Colorado Department of Public Health and Environment cannot be assessed here.

Assessment Processes and Procedures

Collaborative efforts were captured three ways; a collaboration event log, advisory meetings event logs and phone-based agency interviews. The collaboration event log was self-reported and captured through an ongoing listing of evaluation activities completed by a member of CDPHE's Retail Marijuana Education Program. The database captured information such as the type of collaboration occurring and the participating agencies. The advisory meeting event logs captured contextual information about interagency meetings, such as; the date of meetings, the purpose of meetings and agencies in attendance. Additionally these logs captured opportunities for collaboration during the meetings, like; opportunities to revise and add to an agenda, contribution to discussion, shared progress reports, and identification of follow-up tasks. Logs were completed by a member of the department's Retail Marijuana Education Program who attended the meetings. Information from the collaboration event logs and advisory meeting event logs were combined for the purposes of this report.

Agency interviews captured the type and frequency of collaboration activities occurring between the department and other state agencies. In particular the survey documented the collaboration structure, process and results using a four-point Likert-type scale. Agency interviews were conducted throughout March 2015 by Colorado School of Public Health employees. We spoke with representatives from CDPHE, the Department of Human Services, the Department of Revenue, the Governor's Office, the Department of Education, the Department of Transportation, the Colorado State Patrol and Tony Grampsas Youth Services. We reached out to the Office of Public Safety for an interview but were unsuccessful at scheduling a meeting.

Data Collection Tools and Development

Appendix 2-V *Collaboration Event Log:* captured the type and date of joint activities on a rolling basis; both ongoing and single event activities are recorded. Second, to document collaborative work that takes place at inter-agency meetings

Appendix 2-VI *Advisory Meetings Event Log:* recorded which agencies were in attendance and opportunities for participation and discussion that emerged during the meeting

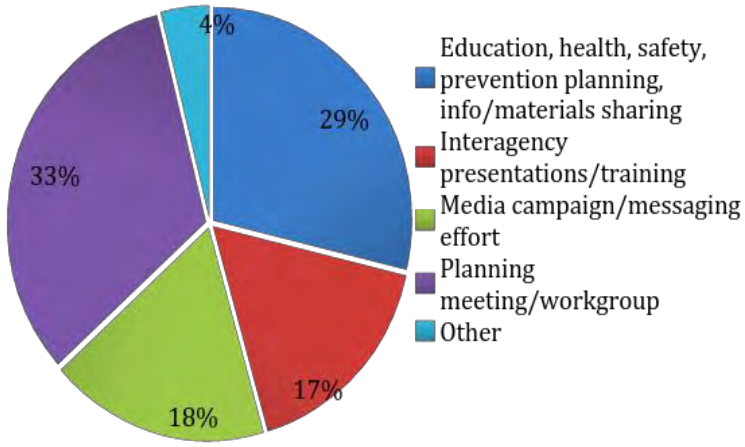
Appendix 2-VII *Agency Interviews:* captured the type and frequency of activities and document the collaboration structure, process and results using a four-point Likert-type scale.

Evaluation Findings: Collaboration Activities

Collaboration and Meeting Log Data

A total of 91 collaboration activities were documented between Oct. 15, 2014, and Apr. 7, 2015. As shown in Figure 12, a variety of activities offered the opportunity for collaboration with state, local and national organizations. The types of events were varied and included; advisory meetings, planning meetings and legislative testimony. Over a quarter of activities addressed retail marijuana education, health, safety, prevention information or materials sharing. Thirty-three percent of activities were meetings or workgroups. Other activities included joint presentations (17%) and media campaign or messaging effort planning (18%). It should be stressed, however, that this is only a simplified list of collaboration activity topics and overlap between subject matters likely occurred.

Figure 12: Focus of Collaboration Activities



A variety of organizations participated in retail marijuana meetings. By design representatives from the Colorado Department of Public Health and Environment Retail Marijuana Education Program attended all events. Other participants included key players from Colorado state agencies such as; the Department of Human Services, the Department of Education, the Governor's Office, the Department of Public Safety and the Department of Transportation. Representatives from the retail marijuana industry also participated in several activities (Table 34). Examples of other attendees included; representatives from out-of-state public health and human services departments, youth programs, and drug monitoring programs. CDPHE also met with several out-of-state organizations that recently passed retail marijuana legislation, including; Oregon, Washington and Alaska. Some federal agencies, such as the Centers for Disease Control and Prevention, participated in some collaborative events. The variety of representation at activities indicates the solicitation of many of viewpoints and dissemination of information or ideas across a large number of agencies and regions.

Table 34. Number of Agencies by Activity Purpose

	Education, health, safety, prevention planning, info/materials sharing	**Interagency presentations / training**	**Legislative efforts**	**Media campaigns/ messaging effort**	**Planning meeting/ workgroup**	**Total**
CDPHE: Retail marijuana	26	15	16	4	30	91
Dept of Human Services	10	5	2	1	18	36
Dept of Education	7	4	3	2	13	29
Governor's Office	4	4	2	2	9	21
Dept of Public Safety	3	2	2	1	11	19
Dept of Revenue	2	3	1	1	10	17
Dept of Transportation	1	3	4	1	10	19
marijuana Industry	5	2	2	0	7	16
CDPHE: Medical marijuana	1	1	0	0	2	4
Dept of Law	1	1	0	1	1	4
Dept of Healthcare Policy/Financing	0	0	1	0	1	2
Other	6	6	2	1	13	28

Collaboration Indicators

Collaboration at meetings in particular may be enhanced by various techniques such as; distributing agendas, allowing participants to modify the agenda, asking participants to contribute to the discussion, sharing progress reports, voicing participants' needs or concerns, discussing predefined committee objectives, and following up on ongoing tasks or concerns. We documented the occurrence of these events, called collaboration indicators, at each meeting (Table 35). It should be noted that these indicators are not measures of the strength of the collaboration at meetings rather they should be interpreted as potential opportunities for additional dialogue. Some meetings are structured in such a way that not all indicators would be valuable or appropriate. That said collaboration at meetings generally was seen through participants' involvement in group discussions and by reviewing the committee and workgroup's objectives. Many meetings also allowed participants to share their organization's needs or concerns, progress reports, and identify issues for follow up. Slightly under half of the meetings shared a formal agenda, but at those that did participants were typically able to add to or modify the agenda.

Table 35. Collaboration Indicators at Meetings

	#	%
Participants contributed to discussion	48	92%
Committee objectives discussed	42	81%
Participants shared needs/concerns	28	54%
Participants shared progress reports	26	50%
Identify items for follow-up	26	50%
Agenda distributed	25	48%
Agenda modifications/additions option	18	72%

Collaboration at meetings occurred through general discussions, discussion about the committee/workgroup objectives, and sharing needs or concerns.

Agency Interview Data

Frequency and Type of Collaboration Activities

We interviewed representatives from eight agencies, including CDPHE, to get a sense of collaborative work from their perspective. As seen in Table 36, agencies participated in a variety of cooperative state-based retail marijuana efforts. The most common method of collaboration, as indicated above, was participation in interagency committees or workgroups that focused on retail marijuana. Every agency that we spoke to was involved in such efforts. Six agencies reported working together on media campaign efforts, which includes instructing others about how to use the materials. Five agencies gave presentations or otherwise shared information about retail marijuana with one another. Five agencies also made referrals to the appropriate

state organization for marijuana information and/or presentations. A shared state-agency website was created to provide a common portal to distribute retail marijuana information (see next section); 50%of the agencies we spoke to said that they added content to this site. Agencies reported providing other agencies with information about; impaired driving, co-sponsoring public educational events, serving on joint grant reviews and participating in joint literature reviews. All agencies reported collaborating at least once a month, and two agencies reported collaborating multiple times a week.

Table 36. Types of Collaboration Activities

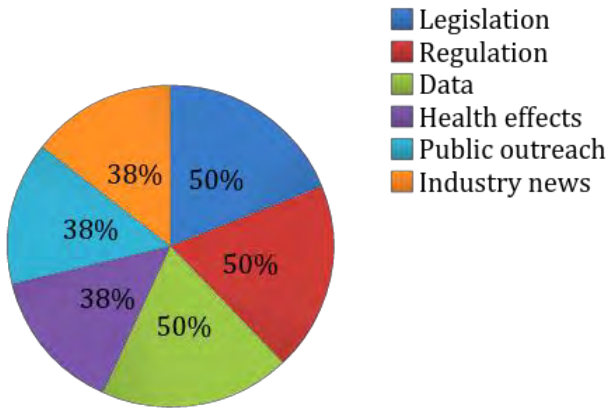
	#	%
Participated in interagency marijuana committee/workgroup	8	100%
Developed or contributed to the production of media campaigns	6	75%
Provided presentations/trainings to CDPHE/other State agencies	5	71%
Provided information about marijuana to CDPHE/ other State agencies	5	63%
Referred others to CDPHE/other State agencies for marijuana trainings/presentations	5	63%
Referred others to CDPHE/other State agencies for marijuana information/other reasons	5	63%
Added content to colorado.gov/marijuana website	4	50%
Provided marijuana materials to CDPHE/other State agencies	3	38%

*Multiple responses allowed.

Agencies reported regular and frequent contact about retail marijuana information

Collaboration Topic Areas

Figure 13: Common Topic Areas for Marijuana Collaboration



**Multiple topics areas allowed*

For many of the collaboration activities reported by agencies we asked respondents to specify the broad topic areas they addressed. The most common topics for collaborative work were; legislation, regulation and data. This was followed by health effect information, public outreach and industry news (see Figure 13).

Collaboration Opportunities and Fit

Using a standard scale we asked participants to rate factors which may have encouraged collaboration with other state agencies. Ratings ranged from 1 –strongly disagree to 4 – strongly agree, so that higher scores represented stronger agreement with a series of statements. As shown in Table 37, agencies generally agreed that the need for collaboration was clearly defined (3.1) and that opportunities for collaboration were available (3.3). There was less endorsement for the clarity of how the role their individual organization role in collaboration was defined (2.8).

Table 37. Collaboration Opportunities and Fit within Organizations

Scale: Strongly agree = 4 Agree = 3 Disagree = 2 Strongly Disagree = 1 N/A	**average**	**std. deviation**
The goal of interagency collaboration was clearly established by the Colorado legislature	3.1	0.6
When working on collaborative tasks, my agency's role was clearly defined	2.8	1.2
There have been several opportunities for my agency to collaborate with CDPHE/other State agencies	3.3	0.8

Respondents generally agreed that the goal of collaboration was clear and opportunities for joint work were available; less agreement existed for the clarity of specific agency roles.

Collaboration Catalysts and Barriers

Using the same scale we assessed factors that either hindered or facilitated collaboration about retail marijuana activities (Table 38). Agencies generally endorsed knowing who to contact in other organizations for information (3.4) and agreed that collaboration fit into their existing organizational structure (3.4). Respondents generally denied disagreements among agencies about the interpretation of marijuana laws (1.6) or during collaboration activities (1.9). Respondents also denied differing views about how collaborative tasks would be carried out (1.9). Collaboration was not believed to have resulted in additional staffing and other resources by agencies (2.5 and 2.1 respectively). Barriers to collaboration suggest that workload sharing was not uniform among organizations (2.5), but agencies did feel there was a high level of accountability for collaborative tasks among organizations (1.6).

Table 38. Collaboration Catalysts and Barriers

Scale: Strongly agree = 4 Agree = 3 Disagree = 2 Strongly Disagree = 1 N/A	**average**	**std. deviation**
Collaborating with other agencies "fits" into our agency's structure	3.4	0.5

Table 38. Collaboration Catalysts and Barriers		
Scale: Strongly agree = 4 Agree = 3 Disagree = 2 Strongly Disagree = 1 N/A	**average**	**std. deviation**
When carrying out a collaborative task, each agency generally shared the workload	2.5	1.1
When I need additional information about retail marijuana, I generally know who to contact at CDPHE/other State agencies	3.4	0.7
Our agency often differs regarding the interpretation of marijuana laws, rules, or general information.	1.6	0.5
Our agency often differs regarding how we think collaborative tasks should be carried out	1.9	0.4
Disagreements often arose during collaboration activities	1.9	0.8
When disagreements arose , issues were generally resolved through group consensus	3.0	0.0
Collaboration required additional staffing time by my agency	2.5	1.3
Collaboration required additional resources by my agency (other than staffing)	2.1	1.0
There has been a lack of accountability or oversight in collaborative activities	1.6	1.2
Few barriers to collaboration were identified and agencies appeared similar in their views about how retail marijuana collaborative tasks should be carried out.		

Collaboration Impact

Respondents positively rated the impact of collaboration among a number of dimensions. Agencies reported an increase in inter-agency collaborations activities (3.1) and information-sharing (3.1). Joint projects increased organizations' knowledge about other state organizations (3.1). Less consensus was found for the ability of collaboration to allow agencies to effectively address retail marijuana goals as established by the legislature (2.8). Respondents were also less likely to endorse a statement attributing collaboration to the development of new opportunities not necessarily related to retail marijuana (2.9) (Table 39).

Table 39. Collaboration Impact		
Scale: Strongly agree = 4 Agree = 3 Disagree = 2 Strongly Disagree = 1 N/A	**average**	**std. deviation**
Since retail marijuana was legalized, collaboration has increased	3.1	0.6
Collaboration increased my agencies' knowledge about the roles and responsibilities of CDPHE/other State agencies	3.1	0.6

Table 39. Collaboration Impact		
Scale: Strongly agree = 4 Agree = 3 Disagree = 2 Strongly Disagree = 1 N/A	**average**	**std. deviation**
Collaborative work allowed us to effectively meet or address the retail marijuana goals issued to by the state legislature	2.8	1.3
Collaboration improved information sharing between my organization and CDPHE/other State agencies	3.1	0.6
Collaboration resulted in new opportunities or activities not necessarily related to retail marijuana	2.9	1.0

Next Steps and Recommendations

1. Because many organizations besides state agencies are involved in retail marijuana efforts we recommend expanding the collaboration evaluation to those outside the state system, such as; local health departments, health care networks, youth prevention programs, parent and public safety groups, and the retail marijuana industry.

2. Collaborative activities often brought industry to the table, which is unique in public health activities. We recommend establishing policy recommendations for other states, focusing on how to develop relationships with the retail marijuana industry and establish roles for engaging retail marijuana voices into the conversation.

Messaging Efforts

Objective

Document and evaluate the alignment of retail marijuana messaging across state agencies.

Message Integration Overview

The Colorado legislature tasked CDPHE with aligning state-based messaging efforts that educate the public on; the safe and legal use of marijuana, the importance of preventing youth access, at-risk populations, and the over-consumption of edibles. For this component of the evaluation messaging refers to any media effort targeting the educational priorities of the state, namely; health, laws, youth, edibles, safe storage and pregnant or breastfeeding women. Mediums of messaging efforts include, but are not limited to; television and radio commercials, pamphlets, newspaper and billboard advertisements, or web-based information designed to provide the public with information about retail marijuana in Colorado.

Assessment Processes and Procedures

Our documentation of messaging efforts focused on two activities that the public is likely to view. Those messaging activities include media campaigns and state-sponsored websites. Data for both foci was gathered by a media scan conducted through a series of targeted and ongoing Internet searches. We also spoke directly with representatives from state agencies to gather additional data. Our review examined media information provided by the following state agencies; the Department of Human Services, the Department of Revenue, the Governor's Office, the Department of Education, the Department of Transportation, the Department of Law, the Department of Health Care and Finance and the Department of Public Safety. These offices were selected because of their involvement developing media campaigns and/or providing information on state-sponsored websites.

Data Collection Tools and Development

Appendix 2-VIII *Message Integration Tool:* captured descriptive information such as; the campaign name, tagline, key points, focus area, intended audience and media outlet.

Evaluation Findings: Messaging Efforts

Media Campaigns

Since retail marijuana was legalized in November 2012, Colorado state agencies sponsored four formal media campaigns; *Don't Be a Lab Rat, Speak Now/Hable Ahora, Drive High Get a DUI* and *Good to Know. Don't Be a Lab Rat, Drive High Get a DUI* and *Good to Know* focus solely on retail marijuana information, whereas *Speak Now* focuses on the use of marijuana, alcohol and other substances. *Speak Now* is underwritten by a grant from SAMSHA. In addition to the state-sponsored campaigns, *Consume Responsibly* is a wide-scale, consumer advocacy-based media initiative sponsored by the Marijuana Policy Project. *Consume Responsibly* is broadcast in several states including Colorado. (Note that CDPHE is not tasked with aligning the messaging efforts of non-state agencies.) We included *Consume Responsibly* in the review of media campaigns to provide a more thorough listing of all current efforts. The media campaigns used a variety of means to communicate their message to audiences, including; radio and television video ads, billboards and other visual arts, and many types of printed materials (Table 40).

Table 40. Marijuana Media Campaigns (as of June 2015)

			Medium			
Campaign Name/Tagline	**Sponsoring Agency**	**Key Points**	**Radio**	**TV/ Videos**	**Billboards/ Visual Art**	**Print Material**
Don't Be a Lab Rat	Governor's Office	Get to know the possible effects of marijuana on teenage development/ health		x	x	
Speak Now/Hable Ahora	CO Dept of Human Services	Help parents know the law and identify risky behaviors, encourage open conversation with youth about marijuana/alcohol & other drugs	x	x	x	x
Drive High Get a DUI	CO Dept of Transportation	Instructs the public about driving and marijuana usage laws	x	x	x	x
Good to Know	CO Dept of Public Health & Environment	Be educated, responsible and know the laws	x	x	x	
Consume Responsibly	Marijuana Policy Project	Know the laws, be responsible, know your limit/start slow, keep marijuana products away from kids			x	x

Campaigns targeted a variety of audiences that included; youth, parents and guardians, and the public. Although the specific intent or message of media campaigns differed, as a whole, they focused on the educational priorities established by the state with one exception: No campaign currently outreaches specifically to pregnant or breastfeeding women although this is in development for *Good to Know* (Table 41).

Table 41. Media Campaign Messages (as of June 2015)

	Focus					**Audience**		
Campaign Name/Tagline	**Health**	**Laws**	**Youth**	**Edibles**	**Safe Storage**	**Breast-feeding Women**	**Parents/ Guardians**	**General Public**
Don't Be a Lab Rat	x		x					x
Speak Now/Hable Ahora	x	x	x				x	
Drive High Get a DUI		x						x
Good to Know	x	x	x	x	x		x	x
Consume Responsibly	x	x		x	x			x
While content varied by the sponsoring agency, as a whole, they focused on the educational priorities established by the State (health, laws, youth, edibles, and safe storage) but not pregnant or breastfeeding women.								

Agency Websites

The state of Colorado created a website dedicated solely to distributing retail marijuana information to the public (https://sites.google.com/a/state.co.us/marijuana). In addition, five state agencies currently have retail marijuana messaging information listed on their website. This does not include the *Speak Now* website, which is the portal for information sponsored by the Colorado Department of Human Services (Table 42). Agency-specific websites focus on providing information within their particular domain. The Colorado Department of Transportation provides information about impaired driving; the Colorado Department of Revenue provides legal and regulatory information; the Colorado Department of Public Safety and Department of Education provides information about youth safety. In addition, the Colorado Department of Public Health and Environment provides a comprehensive range of information, including; health data, marijuana education and prevention resources, high-risk group information, and campaign materials. The Department of Human Services *Speak Now* site gives information for parents and caregivers on ways to engage youth in conversation about drugs.

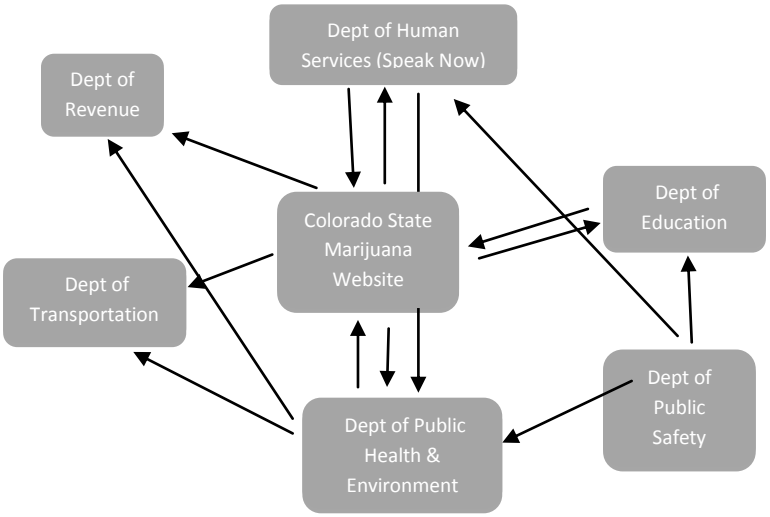
Table 42. State Agencies with marijuana Website Information

Agency	URL	General Focus
CO State marijuana web portal	colorado.gov-marijuana	Official resource for retail marijuana information for the general public, growers, visitors, and businesses; includes health effects, youth, laws/legal information
CO Dept of Transportation	https://www.codot.gov/safety/alcohol-and-impaired-driving/druggeddriving/marijuana-and-driving	Review impaired driving information and CDOT campaign links
CO Dept of Revenue	https://www.colorado.gov/pacific/enforcement/marijuanaenforcement	Highlights legal and regulatory information
CO Dept of Public Safety	https://www.colorado.gov/pacific/cssrc/marijuana	Provides Colorado school safety resources, links to other State and National sites
Co Dept of Education	http://www.cde.state.co.us/dropoutprevention/resources	Highlights effects of marijuana on youth, youth legal information
CO Dept of Public Health & Environment	https://www.colorado.gov/cdphe/retail-marijuana	Provides health information and marijuana education and prevention resources, high-risk group information, campaign materials, and links to State and National sites
CO Dept of Human Services (Speak Now site)	http://speaknowcolorado.org/	Information for parents/caregivers on ways to engage youth in conversations drugs; available in Spanish

Five State agencies and the State of Colorado marijuana portal have retail marijuana messaging information listed on their website.

Many sites provide links to other local and national resources. As shown in Figure 14, many of the state-sponsored websites provide linkages to retail marijuana information listed on other sites. The Colorado State marijuana website provides linkages to most other agencies web pages for marijuana information. Currently only three sites provide linkages to the Colorado state portal.

Figure 14: Website Links across State Agency Websites



As a group the priority educational areas of the state; educate the public on safe legal use of marijuana, retailers on the importance of preventing youth access, high-risk populations and the over-consumption of edibles are provided by the state websites. The most comprehensive sites being the state marijuana web portal and CDPHE. Health information is provided on four sites, laws and legal information provided on seven sites, youth are targeted on five sites, edibles information is on four sites and safe storage and breastfeeding or pregnancy information is covered on two sites (Table 43). Three sites provide links to the state marijuana web portal and two sites provide links to Colorado Department of Public Health and Environment's technical assistance program.

Table 43. Content of State Agencies marijuana Websites

	Topic Areas/Audience						**Links**		
	Health	**Laws**	**Youth**	**Edibles**	**Safe Storage**	**Breast-feeding/ Pregnant Women**	**State marijuana Site**	**CDPHE Technical Assistance**	**Local, State & Federal Agencies**
CO State marijuana main website	**x**	x	x	x	X	x	NA	x	x
CO Dept of Transportation		x							
CO Dept of Revenue		x		x					x
CO Dept of Public Safety			x	x					x

Table 43. Content of State Agencies marijuana Websites

	Topic Areas/Audience						Links		
	Health	**Laws**	**Youth**	**Edibles**	**Safe Storage**	**Breast-feeding/ Pregnant Women**	**State marijuana Site**	**CDPHE Technical Assistance**	**Local, State & Federal Agencies**
Co Dept of Education	x	x	x				x		
CO Dept of Public Health & Environment	x	x	x	x	X	x	x	x	x
Dept of Human Services (Speak Now site)	x	x	x				x	x	

Information about the priority educational areas of the State is provided by State websites; the most comprehensive sites being the State marijuana portal and CDPHE.

Several sites offer information that can be printed out and distributed, which facilitates data sharing by the public. Most agencies provide brochures or flyers, and four have links to radio or video ads. Factsheets, presentation slides and downloadable website insignia are provided (Table 44).

Table 44. Distributable Resources

	Distributable Resources				
	Brochures/ Flyers	**Factsheets**	**Power-Points**	**Radio/ Video Ads**	**Website Banners/ Buttons**
CO State marijuana main website	X			x	
CO Dept of Transportation	X			x	
CO Dept of Revenue					
CO Dept of Public Safety	X	x			
Co Dept of Education	X	x	x		
CO Dept of Public Health & Environment	X	x	x	x	
Dept of Human Services (Speak Now site)	X			x	x

In this portion of the evaluation we focused on examining CCDPHE's integration of retail marijuana messaging efforts among state agencies. The state asked that information about health, laws, youth, edibles, safe storage and pregnant or breastfeeding women be a priority in this effort. Media campaigns cover each of these foci, with the exception of pregnant or breastfeeding women. This need is currently being examined by CDPHE and is dependent on future funding. State websites have incorporated these priority areas into the information they provide to consumers and by visiting the state of Colorado marijuana web portal, visitors will find links to most state agencies actively involved with retail marijuana efforts. Although not discussed in

this section, the alignment of messaging was seen in several events recorded in the collaboration activities (Objective 2.3) section of the report. In particular, agencies met frequently to discuss priority areas and to plan campaign and messaging efforts. Messaging alignment is seen in the technical assistance (Objective 2.2) section, in which Colorado Department of Public Health and Environment provided the public with campaign messaging materials and links and made referral to appropriate state agencies.

Next Steps and Recommendations for the Marijuana Education and Prevention Efforts

CDPHE sponsors a Marijuana Education campaign that launched in January 2015 with the primary goal of raising awareness of the Marijuana laws among adult Coloradans. We will complete an assessment of knowledge of Marijuana Laws, attitudes towards use and understanding of risks associated with use in June 2015 with the goal of documenting exposure to this campaign and any changes in knowledge of Marijuana Laws, attitudes towards use and understanding of risks associated with use from this baseline report. We will also complete the same follow-up with Clinicians and Retailers and Users in July of 2015 and anticipate completing the same follow-up with youth before November 2015. Our methodology will not allow us to document changes in knowledge or attitudes among individuals, but will allow for exploration of trends in awareness over time among diverse groups statewide, and to document evidence that Marijuana educational efforts are associated with increased awareness if possible.

Summary of Goal 1 Recommendations

1. Media campaigns geared towards Spanish-speaking populations and other groups are limited and should be developed to ensure the distribution of information to a wider audience. Information geared towards youth, such as social media, could be beneficial.
2. A focus on increasing awareness of key elements of the Marijuana Laws across the general populations and target groups is needed, including an emphasis on age of and location of legal consumption; regulations re: transportation of Marijuana out of state; and regulations re: driving under the influence of Marijuana.
3. Specific campaigns focused on youth and their parents as well as pregnant/breastfeeding women should emphasize known risks associated with use.
4. Raising awareness of laws and risks associated with use among specific populations is a priority for clinicians who serve them.
5. Agencies can improve the alignment of messaging by listing the state marijuana portal on all sites currently offering marijuana information.
6. We further recommend a review of additional media campaign efforts produced by the marijuana industry and other public health agencies.

Summary of Goal 2 Recommendations

Regional Trainings. Additional information is needed for evidence-based data specifically targeting youth Marijuana prevention and best/promising practices about youth prevention and education programs. Longer-term evaluation is needed for this activity; accordingly, CDPHE will issue a 4-month follow-up

assessment to identify which information is being implemented locally over time. An additional area to explore is the impact of trainings for those programs serving at-risk groups.

Technical Assistance. Increasing the availability of TA information in other languages and tailoring the material for non-dominant groups is advised; accordingly, Spanish-speaking materials are in development. Due to the large number of requests for retail MJ presentations, the development of a Teach-the-Teacher type of training model could more broadly disseminate MJ prevention and educational information to youth and at-risk groups. Most utilization data gathered in this evaluation was collected quickly after requestors received the technical assistance information. Because in can take several months for programs and agencies to utilize the information, we recommend reassessing a sample of requestors to better understand their use and dissemination of the materials between four and six months post-request. Immediate modifications to the Technical Assistance evaluation are to contact all new requestors a month after using the service.

Collaboration Activities. We recommend expanding the collaboration evaluation to those outside the State system, such as local health departments, health care networks, youth prevention programs, and parent, public safety groups and the retail Marijuana industry. We further recommend establishing policy recommendations for other states, focusing on how to develop relationships with the retail Marijuana industry and establish roles for engaging retail Marijuana voices into the conversation.

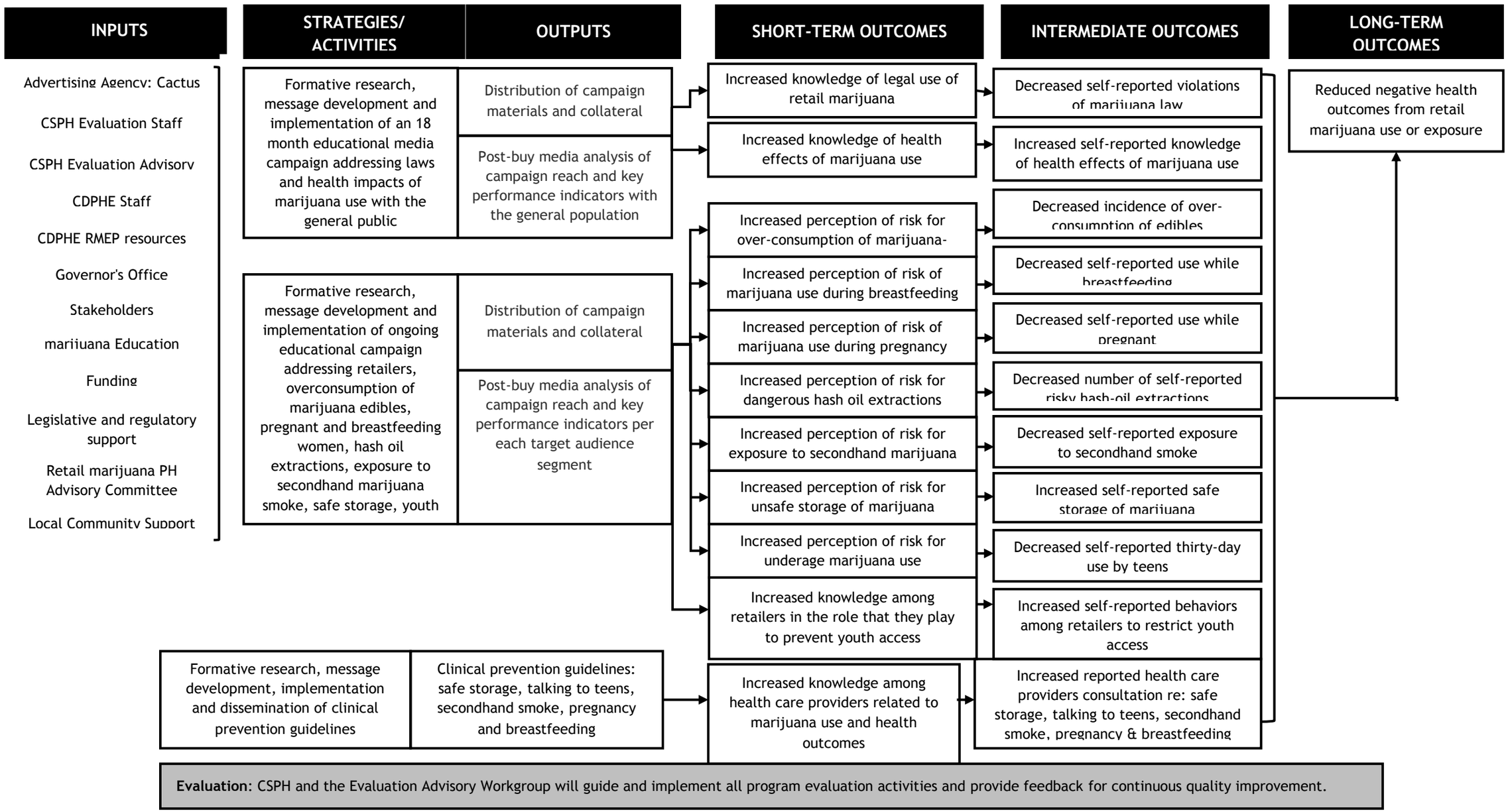
Evaluation Findings: Secondary Data Sources

This evaluation has been completed by Lisa Barker from CDPHE and is provided in a separate document.

Appendices

- Mixed-Mode Survey
- Youth Survey
- Clinician Survey
- Pregnant/Breastfeeding Women Survey
- Retailer/Grower Survey
- In-depth interview
- Evaluation tools for the Community VDT survey
- Technical Assistance materials on Focus Group discussions provided to Cactus
- Goal 2: Data Collection Tools

GOAL 1: Promote Safe, Legal and Responsible Use of Retail Marijuana through Mass Reach Media



GOAL 2: Assess Effectiveness of CDPHE Collaboration and Support