Hashing Out the Issues: Health and Safety in the Marijuana Industry

Marijuana and Public Health

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Branch Chief
Environmental Epidemiology, Occupational Health, and Toxicology
AMENDMENT 64
LEGALIZE MARIJUANA

REPORTING: 30%

☑ Yes
53%
887,957

No
47%
796,194

STATE HOUSE DISTRICT 42

FIELDS
10,648  72%

DONALD
4,145  28%

ELECTORAL VOTE

OBAMA  172
ROMNEY  184
OH WOW! PARADIGM SHIFT!
CDPHE and Retail Marijuana (C.R.S. 25-1.5-111 & SB-13-283)

Surveillance Role

"Monitor changes in drug use patterns, broken down by county and race and ethnicity, and the emerging science and medical information relevant to the health effects associated with marijuana use."
"The Department shall appoint a panel of health care professionals with expertise in cannabinoid physiology to monitor the relevant information. The panel shall:

- Provide a report by 1/31/15 and every 2 years thereafter*
- Establish criteria for 1) studies to be reviewed, and 2) reviewing studies and other data, and
- Make recommendations, as appropriate, for policies intended to protect consumers of marijuana or marijuana products and the general public.
FAKE POT
REAL DANGER

SMOKING SYNTHETIC MARIJUANA, LIKE SPICE AND K2, HAS LED TO MORE THAN 200 HOSPITALIZATIONS IN COLORADO IN TWO MONTHS. THERE IS A BAD BATCH ON THE STREETS. YOU DON’T KNOW WHAT’S IN IT.
Legal Marijuana and Public Health

• Monitor health effects
  – Changes in use
  – Accidents
  – Poisonings
  – Chronic health issues

• Education and Prevention
  – Adolescent use
  – Pregnant or nursing mothers
  – Product safety and storage
  – Occupational health and safety

• Infused product safety

• Laboratory practices

• Waste disposal
You sure he's absorbing all of this?
# CDPHE Monitoring Activities

<table>
<thead>
<tr>
<th>Target Pop.</th>
<th>Problem</th>
<th>Monitoring</th>
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</table>
| Young Children  | Accidental Poisoning         | Pilot surveillance project  
Colorado Hospital Association (CHA) Data  
Rocky Mountain Poison and Drug Center Calls  
Child Health Survey(CHS) - risk factors |
| Youth           | Increased Use/Abuse          | Healthy Kids Colorado Survey (aka YRBS)                                   |
|                 | Poisoning, Overdose, Abuse   | Colorado Hospitalization Data  
Rocky Mountain Poison and Drug Center Calls |
|                 | Accidents/Trauma             | Colorado Hospitalization Data  
Colorado Trauma Registry |
| Adults          | Increased Use/Abuse          | Behavioral Risk Factor Surveillance System (BRFSS)  
Tobacco Attitudes and Behaviors Survey (TABS) |
|                 | Poisoning, Overdose, Abuse   | Colorado Hospitalization Data  
Rocky Mountain Poison and Drug Center Calls |
|                 | Accidents/Trauma             | Colorado Hospitalization Data & Trauma Registry  
Pilot Surveillance (Ski-Related Injuries) |
|                 | Contaminated Products        | Foodborne Illness Surveillance related to Edibles  
Rocky Mountain Poison and Drug Center Calls |
| Pregnant/Breastfeeding | Birth Defects, Developmental Disabilities | Pregnancy Risk Assessment Monitoring System (PRAMS)  
Active Surveillance (Birth Defects Registry) |
# Retail Marijuana Public Health Advisory Committee

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Affiliation</th>
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<tbody>
<tr>
<td>Mike Van Dyke, Ph.D.</td>
<td>Epidemiologist</td>
<td>Colo Dept of Pubic Health &amp; Env</td>
</tr>
<tr>
<td>Ken Gershman, MD, MPH</td>
<td>Public Health Physician</td>
<td>Colo Dept of Pubic Health &amp; Env</td>
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<tr>
<td>Laura Borgelt, PharmD</td>
<td>Pharmacologist</td>
<td>University of Colorado Hospital</td>
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<tr>
<td>Russell Bowler, MD, PhD</td>
<td>Pulmonologist</td>
<td>National Jewish Health</td>
</tr>
<tr>
<td>Al Bronstein, MD</td>
<td>Poison Control Representative</td>
<td>Rocky Mountain Poison and Drug Center</td>
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<tr>
<td>Ashley Brooks-Russell, PhD</td>
<td>Health Risk Behaviors</td>
<td>Colorado School of Public Health</td>
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<tr>
<td>Heath Harmon, MH</td>
<td>Local Public Health Representative</td>
<td>Boulder County Public Health</td>
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<tr>
<td>Sharon Langendeorfer, MB</td>
<td>Obstetrics</td>
<td>Denver Health</td>
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<tr>
<td>Bruce Mendelson, MPA</td>
<td>Drug Epidemiology</td>
<td>Denver Office of Drug Strategy</td>
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<tr>
<td>Andrew Monte, MD, MSc</td>
<td>Medical Toxicologist</td>
<td>University of Colorado Hospital</td>
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<tr>
<td>Judy Shlay, MD</td>
<td>Public Health Surveillance</td>
<td>Denver Health</td>
</tr>
<tr>
<td>Christian Thurstone, MD</td>
<td>Psychiatrist/Addiction Medicine</td>
<td>University of Colorado Hospital</td>
</tr>
<tr>
<td>George Sam Wang, MD</td>
<td>Pediatrician</td>
<td>Children’s Hospital Colorado</td>
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Duties of Advisory Committee

- Systematically review the scientific literature
  - Come to consensus on population health effects of marijuana use
- Develop public health statements
  - Come to consensus on translation of the science into simplified language
- Recommend public health related policies
- Recommend public health surveillance activities
- Identify research gaps important to public health
THE SCIENCE NEWS CYCLE

Start Here

Your Research
Conclusion: A is correlated with B (p=0.05), given C, assuming D and under E conditions.

...is translated by...

UNIVERSITY PR OFFICE
(YES, YOU HAVE ONE)

FOR IMMEDIATE RELEASE
SCIENTISTS FIND POTENTIAL LINK BETWEEN A AND B (UNDER CERTAIN CONDITIONS).

...which is then picked up by...

LOCAL EYEWITNESS NEWS

...and caught on...

ONC Cable NEWS

We saw it on a Blog!

A causes B all the time
What will this mean for Obama?

BREACKING NEWS BREAKING NEWS BREAKING NEWS BREAKING NEWS BREAKING NEWS

...then noticed by...

Scientists out to kill us again.

POSTED BY RANDOM DUDE

Comments (377)
OMG I kessaw ittt!
WTH??????

WWW.PHDCOMICS.COM

WWW.PHDCOMICS.COM

## Meeting Schedule

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<th>Date</th>
<th>Topic</th>
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<tr>
<td>May 12, 2014</td>
<td>Committee Introduction</td>
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<tr>
<td>June 16, 2014</td>
<td>Marijuana Use During Pregnancy and Breastfeeding</td>
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<tr>
<td>July 21, 2014</td>
<td>Potential Neurological and Mental Health Effects</td>
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<tr>
<td>August 18, 2014</td>
<td>Potential Health Effects on Youth and Unintentional Poisonings</td>
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<tr>
<td>September 15, 2014</td>
<td>Marijuana Dose and Drug Interactions</td>
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<tr>
<td>October 20, 2014</td>
<td>Potential Extrapulmonary Effects and Injuries</td>
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<tr>
<td>November 17, 2014</td>
<td>Potential Respiratory Effects and Lung Cancer</td>
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<tr>
<td>December 15, 2014</td>
<td>Committee Conclusion</td>
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Growing Marijuana 101

- High temperature
  - 71° to 88° F
  - Optimum as high as 95° F
  - Excess heat vented outside

- High relative humidity
  - 50%-70%

- High intensity lighting
  - 2,000 lumens/ft²
  - Controlled photoperiod

- Elevated carbon dioxide
  - 700 to 1500 ppm

- Frequent fertilization

- Pest control (mites & fungi)
• Examine 15-20 IMGOs during law enforcement entry
• Determine the exposures associated with the investigation of IMGOs
• Determine the potential adverse health effects to first responders and children
• Suggest appropriate PPE for first responders
Potential Health & Safety Hazards
Illegal MGOs

- Concealed operation
- Inadequate ventilation
- Excessive moisture
- Makeshift carbon dioxide concentrator
- Improper electrical installation
- Limited knowledge of safe pesticide and fertilizer handling
- Growers and family live in house
In 21/30 (70%) MGOs, mold at levels classified as “IAQ problem”

During tear-out 6/10 (60%) MGOs mold increased compared to initial samples

Mold levels during plant removal activities were similar to those that would be expected during a medium size mold remediation job.
Study Conclusions

- Significant mold exposure hazard at most MGOs
  - Allergic symptoms, asthma exacerbation, special considerations for immunosuppressed individuals
- Combustion pollutants were not a significant issue in Colorado MGOs, but remain an acute exposure concern.
- Pesticide use in Colorado MGOs was very limited
- Significant potential for irritation symptoms from volatile organic compounds
- Most surfaces in an MGO are contaminated with significant levels of THC
- Use of respiratory protection and gloves is an important practice for investigators
How do results scale to larger manufacturing?

- Not a concealed operation
- More ventilation
- Much larger, more plants, more chemicals
- More workers
- Extractions?
- Security issues
OHSW: Goals

• Identify EHS issues in the marijuana industry
• Provide guidance to marijuana industry to prevent occupational injuries and illnesses
• Provide guidance to marijuana industry on hazardous waste and sustainability issues
• Identify best practices for nuisance odor control and remediation of former grow operations
• Identify surveillance data to follow injury and illness trends
OHSW: Participation

- Multiple CDPHE divisions
- Colorado School of Public Health
- Center for Worker Health and Environment
- Colorado State University
- Local health departments
- Private consultants
- Industry representatives
- Federal agencies
Sub Groups

- Existing industry knowledge
- Industrial Hygiene
- Safety and Security
- Wellness and Safety Culture
- Occupational Medicine
- Local and Environmental Health Issues
- Information Dissemination
Anticipated Outputs

- EHS guide for the marijuana industry
- Surveillance report on occupational injuries and illnesses in the marijuana industry
- Marijuana industry meeting to share findings
Current Educational Efforts

www.colorado.gov/marijuana

FAQs: Marijuana and Methods of Use

Although marijuana use might help reduce the symptoms of certain medical conditions, it can also be harmful when used. The effects of marijuana on the brain, heart, lungs, and mental health are not yet fully understood. Though use is sometimes associated with an increase in alcohol and other drug use, marijuana is not known to be a gateway drug.

FAQs: Health Effects of Marijuana

IS MARIJUANA SAFE?

Although marijuana may help reduce symptoms of certain medical conditions, it may also have some harmful effects depending on how often it is used. There is clear evidence that regular use of marijuana increases the risk of heart, lung, and mental health problems. Less is known about the health issues that might be caused by casual or infrequent marijuana use. Marijuana is a natural product that doesn’t need to be tested in a lab. Typical marijuana plants contain more than 400 chemicals, including about 60 that can interact with the body’s nervous system.

WHAT ARE THE EFFECTS OF USING MARIJUANA?

The effects of marijuana may include:
- A happy, relaxed or “high” feeling
- Slower reactions
- Dizziness
- Trouble thinking, learning and remembering
- Confusion, anxiety, panic or paranoia
- Fast heart rate
- Increased blood pressure
- Loss of interest in normal activities
Questions?