A Public Health Framework for Legalized Retail Marijuana:

Avoiding a New Tobacco Industry

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Professor of Medicine
Director, Center for Tobacco Control Research & Education

9/20/2017
The Irony

- Tobacco is legal, socially unacceptable, and use is falling
- Marijuana is illegal, socially sanctioned, and use is increasing
- So, we want to treat marijuana like tobacco
MARIJUANA INC.
Meet the Entrepreneurs and Investors
Firing Up a New Industry

THE 50 GREATEST BUSINESS RIVALRIES OF ALL TIME

ACKMAN AND LAMPERT: RETAIL'S WRECKING CREW
BY JENNIFER REINGOLD AND ALLAN ELOAN WITH DORIS BURKE
## Cannabis as Medicine

<table>
<thead>
<tr>
<th>Evidence</th>
<th>Condition</th>
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</thead>
</table>
| Conclusive/Substantial | Chronic pain  
Chemotherapy-induced nausea and vomiting  
Multiple sclerosis spasticity (patient-reported) |
| Moderate          | Sleep disturbance (various etiologies)                                    |
| Limited           | HIV/AIDS-associated weight loss  
Multiple sclerosis spasticity (clinician-measured)  
Tourette syndrome  
Anxiety symptoms  
Posttraumatic stress disorder  
Traumatic brain injury or intracranial hemorrhage outcomes |

EVIDENCE ON THE CARCINOGENICITY OF Marijuana Smoke

August 2009

Reproductive and Cancer Hazard Assessment Branch
Office of Environmental Health Hazard Assessment

California Environmental Protection Agency
Cardiomyopathies* (e.g. Takotsubo cardiomyopathy)

Stroke*

Acute heart failure*

Myocarditis/pericarditis*

Coronary thrombosis*

Artery dissection

Vasospasm, vasculitis*

Arrhythmias*:
- Atrial fibrillation
- Atrioventricular block
- Ventricular tachycardia
- Extreme bradycardia
- Tachycardia/bradycardia
- Asystole/cardiac arrest
- Electrocardiogram abnormalities (T-wave inversion, ST-segment elevation)

Postural (orthostatic) hypotension*

Acute coronary syndrome*  
Acute myocardial infarction*  
Sudden cardiac death*
Cannabis-Tobacco Policy Overlap

Just a few examples:

- Addiction
- Adolescent use and initiation
- Advertising
- Cardiovascular & respiratory risks
- Cancer
- Corporate influence and dominance
- Co-use and dual use

- Environmental impact
- Flavors
- Packaging/labeling
- Smokefree environments
- Social norms key
- Vaping
- And more…
Original Investigation

Waiting for the Opportune Moment: The Tobacco Industry and Marijuana Legalization

RACHEL ANN BARRY,* HEIKKI HIILAMO, † and STANTON A. GLANTZ*

*Center for Tobacco Control Research and Education and Philip R. Lee Institute for Health Policy Studies, University of California, San Francisco; †University of Helsinki

Context: In 2012, Washington State and Colorado legalized the recreational use of marijuana, and Uruguay, beginning in 2014, will become the first country to legalize the sale and distribution of marijuana. The challenge facing policymakers and public health advocates is reducing the harms of an ineffective, costly, and discriminatory "war on drugs" while preventing another public health catastrophe similar to tobacco use, which kills 6 million people worldwide each year.

Methods: Between May and December 2013, using the standard snowball research technique, we searched the Legacy Tobacco Documents Library of previously secret tobacco industry documents (http://legacy.library.ucsf.edu).

Findings: Since at least the 1970s, tobacco companies have been interested in marijuana and marijuana legalization as both a potential and a rival product. As public opinion shifted and governments began relaxing laws pertaining to marijuana criminalization, the tobacco companies modified their corporate planning strategies to prepare for future consumer demand.

Conclusions: Policymakers and public health advocates must be aware that the tobacco industry or comparable multinational organizations (eg, food and beverage industries) are prepared to enter the marijuana market with the intention of increasing its already widespread use. In order to prevent domination of the market by companies seeking to maximize market size and profits, policymakers should learn from their successes and failures in regulating tobacco.

Keywords: marijuana, public policy, cigarettes, tobacco industry.

The Milbank Quarterly, Vol. 92, No. 2, 2014 (pp. 207-242)
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Marijuana as a rival product

In this country, a Campaign to Legalize Cannabis has lately become active; and similar moves are being made elsewhere, notably in the United States. As medical pressure against cigarette smoking increases, there is little sign of similar pressure against marijuana smoking. It is indeed, commonly asserted by its supporters, without any very strong professional reaction, that...
Cannabis in California

- **Decriminalization** – civil offense (1975)
  - Reduced to infraction in (2010)
- **Medical legalization** (1996 voter initiative)
  - Supplemented by legislation (2003 and 2015)
  - Patchwork of local rules
- **Adult use legalization** (2016 voter initiative)
- **MAUCRSA** (2017)
Cannabis in California: MAUCRSA

- Three agencies regulate medical and adult use
  - Bureau of Cannabis Control
    - Lead agency
    - Retailers; distributors; testing labs; microbusinesses
  - Department of Public Health
    - Manufactured cannabis products
    - Packaging and labeling
  - Department of Food and Agriculture
    - Cultivation
    - Track and trace
- Significant local control
Cannabis Products
Also

Manufactured Cannabis Products

- **Definition**
  - Processed or transformed into more concentrated form
    - Commonly using butane, CO₂, or alcohol
  - Consumed directly (e.g., “dabs,” extracts, tinctures)
  - Combined with other ingredients (e.g., edibles, topicals)

- **Potency**
  - Can be very high THC (over 80%) in concentrates
    - Smoked cannabis current maximum ~30% THC (and a lot lost), more often 10-20%
    - Can be very low THC, high CBD
    - Some not psychoactive at all (most topicals)

- **Method of consumption → effect, duration, onset (e.g., edibles)**
Public health framework

- Legal but discouraged
- Industry as disease vector
- Public health engagement with policymaking process
- Marijuana prevention and control program for *general population*
  - Hard-hitting mass media education campaigns
  - Comprehensive smokefree and other public usage laws
  - Tax revenue for prevention and control program and research
  - Strict marketing and advertising restrictions
  - Plain packaging and state of art graphic warning labels (not current US)
Warning labels

INFARTO

O Ministério da Saúde adverte:
O uso deste produto causa morte por doenças do coração.

PARE DE FUMAR
DISQUE SAÚDE
0800 61 1997

SMOKING CAUSES
KIDNEY BLADDER CANCER
MALE SMOKING
GUMS AND MOUTH CANCER
Marijuana

Washington

**Washington Retail Marijuana**

There may be health risks associated with consumption of this product. Smoking is hazardous to your health. Should not be used by women that are pregnant or breast feeding. For use only by adults twenty-one and older. Keep out of reach of children. Marijuana and products containing marijuana can impair concentration, coordination, and judgment. Do not operate a vehicle or machinery under the influence of this drug. This product is infused with marijuana or active compounds of marijuana.

**Warning:** This product has intoxicating effects and may be habit forming. This product may be unlawful outside of Washington State.

**Caution:** When eaten or swallowed, the intoxicating effects of this drug may be delayed by two or more hours.

Colorado

**Colorado Retail Marijuana**

There may be health risks associated with the consumption of this product. This product is intended for use by adults 21 years and older. Keep out of the reach of children. This product is unlawful outside the State of Colorado. There may be additional health risks associated with the consumption of this product for women who are pregnant, breastfeeding, or planning on becoming pregnant. Do not drive a motor vehicle or operate heavy machinery while using marijuana. This product is infused with marijuana. This product was produced without regulatory oversight for health, safety, or efficacy. The intoxicating effects of this product may be delayed by two or more hours. This product contains marijuana.
Nevada and California

Manufactured at: Joe’s Kitchen
Cert.#: 321654987101 0401
123 Main Street, Las Vegas, NV on 2/1/14
Lot#: 1234 Batch #5463

INGREDIENTS: Flour, Butter, Canola Oil, Sugar, Chocolate, Marijuana, Strawberries
CONTAINS ALLERGENS: Milk, Wheat
Contains marijuana extract processed with butane.

WARNING: This product may have intoxicating effects and may be habit forming.

We Care Dispensary, 123 Main Street, Carson City, NV 89701
Date Dispensed: 3/27/2014 To: John J. Smith #1224687

Cookie
Net Weight: 6 oz (168 Grams)
Serving Size: 1 1/2 oz of THC
Contains 10 servings and a total of 100 MG of THC
Use by: 6/3/2014
Myrcene 6.6 mg/g Limonene 6.1 mg/g Valencene 3.5 mg/g

CAUTION: When eaten or swallowed the intoxicating effects of this product can be delayed 2 or more hours.
This product may be unlawful outside the State of Nevada.

Manufactured at: Joe’s Kitchen
Cert.#: 321654987101 0401
123 Main Street, Las Vegas, NV on 2/1/14
Lot#: 1234 Batch #5463

INGREDIENTS: Flour, Butter, Canola Oil, Sugar, Chocolate, Marijuana, Strawberries
CONTAINS ALLERGENS: Milk, Wheat
Contains marijuana extract processed with butane.

WARNING: This product may have intoxicating effects and may be habit forming.
Protecting the Policy Process

“The involvement of organizations or individuals with commercial or vested interests in the tobacco industry in public health policies with respect to tobacco control is most likely to have a negative effect... Governments should not allow any person employed by the tobacco industry or any entity working to further its interests to be a member of any government body, committee or advisory group that sets or implements tobacco control policies.”
Advisory Committee Membership

<table>
<thead>
<tr>
<th>Name</th>
<th>Affiliation</th>
<th>Interests Represented</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ron Kammerzell - Co-Chair and Task Force Member</td>
<td>Colorado Department of Revenue</td>
<td>Enforcement, including MMED</td>
</tr>
<tr>
<td>Representative Dan Pabon, Co-Chair and Task Force Member</td>
<td>State House Representative</td>
<td>Colorado General Assembly</td>
</tr>
<tr>
<td>David Blake, Task Force Member</td>
<td>Attorney General’s Office, Deputy Attorney General for Legal Policy and Governmental Affairs</td>
<td>Attorney General’s Office</td>
</tr>
<tr>
<td>Dr. Sam Kamin, Task Force Member</td>
<td>University of Denver, Law Professor</td>
<td>Legal expertise</td>
</tr>
<tr>
<td>Meg Sanders, Task Force Member</td>
<td>Medical marijuana industry</td>
<td>Medical marijuana industry</td>
</tr>
<tr>
<td>Betty Aldworth</td>
<td>Self-employed</td>
<td>Amendment 64 Campaign</td>
</tr>
<tr>
<td>Norton Arbelaez</td>
<td>RiverRock LLC, Compliance Officer</td>
<td>Medical marijuana industry</td>
</tr>
<tr>
<td>Donald Burmania</td>
<td>Colorado Department of Revenue</td>
<td>Liquor Enforcement</td>
</tr>
<tr>
<td>Robert Dill</td>
<td>Attorney</td>
<td>Experience in medical marijuana law</td>
</tr>
<tr>
<td>Laura Harris</td>
<td>Colorado Department of Revenue</td>
<td>MMED Enforcement</td>
</tr>
<tr>
<td>Cally King</td>
<td>Governor’s Office</td>
<td>Governor’s Office</td>
</tr>
<tr>
<td>Dr. Jeremy Nemeth</td>
<td>University of Colorado Denver, Assistant Professor, Planning and Design</td>
<td>Policy expertise</td>
</tr>
<tr>
<td>Chris Nevitt</td>
<td>Denver City Councilman</td>
<td>Local Government</td>
</tr>
<tr>
<td>James Shpall</td>
<td>Applejack Associates, President</td>
<td>Alcohol industry</td>
</tr>
<tr>
<td>Mary Beth Susman</td>
<td>Denver City Council, President</td>
<td>Local Government</td>
</tr>
</tbody>
</table>
Advisory Committee Membership

## Members of the Tobacco Education and Research Oversight Committee

TEROC is comprised of 13 members. Pursuant to California Health and Safety Code Section 104365, the Governor appoints eight members (one of which is a pending appointment), the Speaker of the Assembly appoints two, the Senate Rules Committee appoints two, and the Superintendent of Public Instruction appoints one member. Current TEROC members are:

<table>
<thead>
<tr>
<th>Name</th>
<th>Title and Affiliations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Michael K. Ong, M.D., Ph.D., Chair</td>
<td>Department of Medicine, University of California, Los Angeles</td>
</tr>
<tr>
<td>Denise Adams-Simms, M.P.H.</td>
<td>Executive Director, San Diego Black Health Associates</td>
</tr>
<tr>
<td>Lourdes Baezconde-Carbanati, Ph.D., M.P.H., M.A.</td>
<td>Associate Professor in Preventive Medicine and Sociology, Institute for Health Promotion and Disease Prevention Research, Keck School of Medicine, University of Southern California</td>
</tr>
<tr>
<td>Vicki Bauman</td>
<td>Prevention Director II, Stanislaus County Office of Education</td>
</tr>
<tr>
<td>Wendel Brunner, Ph.D., M.D., M.P.H.</td>
<td>Director of Public Health, Contra Costa Health Services</td>
</tr>
<tr>
<td>Patricia Etem, M.P.H.</td>
<td>Executive Consultant, CIVIC Communications</td>
</tr>
<tr>
<td>Lawrence W. Green, Dr.P.H., Sc.D. (Hon.)</td>
<td>Professor, Department of Epidemiology and Biostatistics, Helen Diller Family Comprehensive Cancer Center &amp; Center for Tobacco Control, Research &amp; Education, University of California, San Francisco</td>
</tr>
<tr>
<td>Alan Henderson, Dr.P.H., C.H.E.S.</td>
<td>Professor Emeritus, California State University, Long Beach</td>
</tr>
<tr>
<td>Pamela Ling, M.D., M.P.H.</td>
<td>Associate Professor, Department of Medicine, University of California, San Francisco</td>
</tr>
<tr>
<td>Myron Dean Quon, Esq.</td>
<td>Executive Director, National Asian Pacific, American Families Against Substance Abuse</td>
</tr>
<tr>
<td>Dorothy Rice, Sc.D. (Hon.)</td>
<td>Professor Emeritus, Institute for Health and Aging School of Nursing, University of California, San Francisco</td>
</tr>
<tr>
<td>Shu-Hong Zhu, Ph.D., M.S.</td>
<td>Professor, Department of Family and Preventive Medicine, University of California, San Diego</td>
</tr>
</tbody>
</table>
State Marijuana Prevention

DON’T WAIT TO TALK WITH YOUR KIDS
TALK WITH YOUR KIDS TODAY.
THEY REALLY DO LISTEN.

LearnAboutMarijuanaWA.org

STARTTALKINGNOW.ORG

Washington State Department of Health

UCSF
Tobacco Industry

You’ve Got Influence — Use It!
You can help the young person in your family be tobacco free by:
- being a good example or role model
- teaching him or her the facts about tobacco use and how to say "no"

Whether you’re the young person’s primary caregiver or an adult family member providing guidance and support, your words can make a difference. If you’re not the primary caregiver, be sure to talk with the primary caregiver(s) about discussing tobacco use with the young person and what sorts of messages you want to convey.

survey result in mind: Almost all of the middle-schoolers surveyed were glad their parents discussed smoking with them.

Establish consequences. Let your youngster know what will happen if he or she uses tobacco, and why you chose the consequences.
Tobacco Control

BIG TOBACCO CALLS E-CIGS A SMARTER ALTERNATIVE TO SMOKING. *WE CAN TRUST THEM, RIGHT?

StillBlowingSmoke.org

BUT BIG TOBACCO’S PRODUCTS KILL PETS TOO

THE REAL COST

Facts | Costs | Pressures | Decisions

Cigarette smoke contains a toxic mix of over 7000 chemicals, some of which are also found in products like gasoline.

Explore the toxic mix

FOLLOW US ON INSTAGRAM

CAN YOU AFFORD THE COSTS OF SMOKING?
California: Where we are today

- Draft rules for *medical market* issued in April 2017
  - Withdrawn because of MAUCRSA
- Give idea of things to come
  - Prop 64 requires agencies to begin licensing by January 2018
- Updated rules will be issued on an emergency basis
  - Will take effect immediately, followed by public comment & revision
  - Not usual process of public comment and revision first
- Problems with draft rules
  - Poor labeling standards
  - High potency limits for manufactured cannabis products
  - 8 ounce daily sale limit for medical cannabis much higher than anywhere else, typically 1 ounce a day or less
  - Allows law enforcement agents to be in cannabis business
Undermines California Smokefree Laws and Norms

• MAUCRSA allows
  – Smoking, vaping, ingesting in cannabis retailer or microbusiness
    ▪ if age restricted, cannabis not visible from public place, no sale or consumption of alcohol or tobacco on premises.
  – Beer garden style temporary event cannabis consumption at county fairs or agricultural events
    ▪ if consumers admitted are 21+ and the local jurisdiction allows
Labeling: Text Only Static Warnings

• SCHEDULE I CONTROLLED SUBSTANCE
• KEEP OUT OF REACH OF CHILDREN AND ANIMALS
• FOR MEDICAL USE ONLY
• IF PREGNANT OR BREASTFEEDING, CONSULT A PHYSICIAN PRIOR TO USE
• THE INTOXICATING EFFECTS OF THIS PRODUCT MAY BE DELAYED BY UP TO TWO HOURS
• THIS PRODUCT MAY IMPAIR THE ABILITY TO DRIVE OR OPERATE MACHINERY, PLEASE USE EXTREME CAUTION
Labeling

- CA proposed regulation (§ 40412): universal cannabis product symbol
- Minimum .5” x .5” size
  - Regardless of package size
- Printed “legibly and conspicuously”
  - Vague → industry manipulation
NOW WITH THC!
Labeling

- **Better:** Adopt a **highly visible and salient** cannabis product symbol
- **Colors**
  - Black = most visually prominent color
  - Yellow = most effective for gaining and keeping consumer attention, less attractive, signals warning
  - **Black + Yellow = danger** (e.g., road warnings)
- **Size**
  - No direct tobacco control analogue
  - 20% primary panel based on graphic warnings
Packaging: Abusive Industry Tactics

CA Proposed Regulation (§ 40410(c)(2)-(c)): prohibits packaging with “[c]artoons; [a]ny likeness to images, characters, or phrases that are popularly used to advertise to children; or [a]ny imitation of candy packaging or labeling”

Should: Eliminate all packaging that appeals to children or imitates any non-cannabis product

Plain packaging for all cannabis products

- Common for restricted-access medical products (e.g., prescription drugs)
- Effective for tobacco products
- Generic labeling and packaging already an option in Oregon
  - Avoid preapproval requirement and fee

Source: http://www.tobaccolabels.ca/plain-packaging/
How Uruguay is doing it

- Government monopoly on sales
- Only 2 (low-THC) varieties of product available, and only **dried flower**
- Private companies providing the cannabis not permitted to brand packaging

Products: Prohibit Harmful Formulations

- CA proposed regulation (§ 40300(b)): prohibits use of additives in cannabis products “that would increase potency, toxicity or addictive potential”

- “Include but are not limited to nicotine and caffeine”
  - Ambiguity: all forms? (e.g., powdered vs. coffee vs. chocolate)

- BETTER: Prohibit ALL additives that promote addictiveness or initiation, including all nicotine, caffeine, menthol, and characterizing flavors

Why prohibit harmful formulations

- Makes it hard to design more appealing, dangerous products to increase consumption

**Prohibit menthol** as an additive
- Local anesthetic effect
  - Likely same for inhaled cannabis
- Conditioned reinforcer for nicotine due to sensory effects
  - Similar effect for cannabis likely (but untested)
- Menthol cigarette smokers more likely to use cannabis

**Prohibit all characterizing flavors**
- Known youth appeal for tobacco products, junk food
- Likely same for cannabis
Products: Prohibit Harmful Formulations

- CA proposed regulation (§ 40306): limits all nonedible manufactured medical cannabis products to 1000mg THC per unit
  - Too high

- Non-cannabis topical products are an existing poisoning concern
  - Most cannabis topicals are non-psychoactive on skin, but ingestion is another matter
  - Medical cannabis topicals may resemble commonly encountered products (e.g., lotions or balms)
  - Some look like food (e.g., honey oil) or trade on appeal of food-like flavors
    - “Pineapple Dream Concentrate”

http://www.dopemagazine.com/review-pineapple-dream-concentrate/
Why California Matters

**History**
- Epicenter of counterculture movement in 1960s
- First medical legalization state

**Production**
- “Emerald Triangle” – Humboldt, Mendocino, Trinity Counties

**Size and influence**
- Largest medical legalization jurisdiction in U.S
- Will be largest adult use jurisdiction globally
- Projected 868,000 medical users (currently 1.5M)
- Projected 4.4M total users in 2018
Conclusions

- Absent strong regulation, marijuana industry will increasingly resemble tobacco industry
  - Marketing, product engineering, PR, and political influence to maximize profits
- Need strong product regulation
  - Attendant health burden
- Large graphic warnings, rotating warning language, and plain packaging
- Protect nonusers, smokefree environments
- Public education modeled on California Tobacco Control Program
- Taxation to discourage use
- Strong conflict of interest laws
- Business interests dominating the policymaking process, by default
- Once bad policies are put in place, difficult to change
- Health groups have been silent
Acknowledgement

Some of the material in this presentation is work I have done in collaboration with my postdoctoral fellows.

- Daniel Orenstein, JD MPH
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