



Marijuana: Reefer Madness or Opioid Alternative?

Your Speaker

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Medical Intervention on Clinically Complex Claims

Mr. Pew brings over 30 years of expertise in the property and casualty and healthcare industries, strategic planning, and technology to his presentations. He has worked with PRIUM in a variety of roles since 1989 including IT, operations, product and service development, and executive management. Other experience includes CoreSpeed, MedicaView International, ChoicePoint and Equifax.

Mr. Pew has been following the prescription drug issue since 2003 and created PRIUM's Medical Intervention Program. He is a member of the medical issues committee of International Association of Industrial Accident Boards and Commissions (IAIABC).

Current responsibilities at PRIUM include educational outreach, product development and marketing.

Learning Objectives

- 1. Marijuana: What is it definition, history, delivery methods
- 2. Legal now and into the future
- 3. Dissonance federal vs. state
- 4. Comparison to opioids
- 5. Implications and clinical perspectives

What is it? Names

Formal name is **Cannabis**

Top 20 names (per www.collegehumor.com)

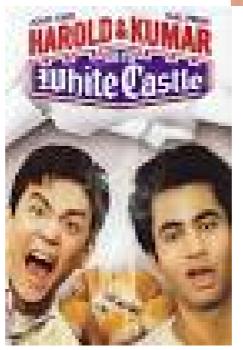
- 1. Weed
- 2. Grass
- 3. Marijuana
- 4. Pot
- 5. Indo
- 6. Ganja
- 7. Green
- 8. Wacky Tabacky
- 9. Mary Jane (Tom Petty, anyone?)
- 10. Chronic

What is it? Different Attitudes









Opinions are generational:

Potheads vs. Normal

Amotivational Syndrome

What is it? Changing Demographics

- According to a Pew Research Center national poll in April 2014:
 - In 2009, 52% said marijuana should not be legal
 - In 2014, 54% say marijuana should be legal
 - 83% would approve of some form of legalization
 - 44% medical use only
 - 39% medical + recreational
 - 15% felt marijuana is harmful to health
 - 69% felt alcohol is harmful to health
 - 23% felt marijuana is harmful to society
 - 63% felt alcohol is harmful to society

http://www.people-press.org/2014/04/02/americas-new-drug-policy-landscape/4-2-14-5/ (Pew Research Center)

http://mmjbusinessdaily.com/pew-poll-54-of-american-adults-think-marijuana-should-be-legal/ (Marijuana Business Daily)

What is it? College Opinions

- Non-scientific, anonymous survey of students at GA Southern University
 - Total of 201 respondents
 - 55.22% female
 - 63.82% not yet 21 years old
 - 68.02% have used Marijuana at least once in their life. Of those ...
 - 69.40% used in high school
 - 82.83% used in college
 - On the future ...
 - 71.14% said medical marijuana should be legal in GA
 - 54.73% said recreational marijuana should be legal in GA
 - 25.37% said neither should be legal

DOES THIS SEEM FAIR?



What is it? Injustice?

"These findings [decrease in price of cocaine, heroin and cannabis by 14-49% in Australia] add to the growing body of evidence that the war on drugs has failed," said Dr. Evan Wood, scientific chair of the International Centre for Science in Drug Policy and research chair in Inner City Medicine at the University of British Columbia in Canada.

http://www.cnn.com/2013/10/01/world/war-on-drugs-failing/

What is it? The History

- Legal and accepted prior to 1937
 - George Washington grew hemp as one of his three primary crops
 - Medical preparations available in pharmacies in the 1850's
 - In the 1880's there were an estimated 500 hashish parlors in NYC
 - States passed legislation to regulate "poisons" (narcotics, including marijuana) first was DC in 1906
 - Federal Bureau of Narcotics (FBN) created in 1930
- The Marihuana Tax Act of 1937
 - Made possession or transfer of cannabis illegal throughout the US under federal law
 - Required an "excise" tax that was inexpensive but difficult to get
 - Harry J. Anslinger head of FBN
 - William Randolph Hurst's newspapers drove public opinion

What is it? Active Ingredients

- 483 known compounds
- Primary ingredients are:
 - **THC** (tetrahydrocannabinol) psychoactive (the "high")
 - **CBD** (cannabidiol) more medical application
 - CBN (cannabinol) weak psychoactive
 - THCV (tetrahydrocannabivarin)
 - CBG (cannabigerol) non-psychoactive, associated with glaucoma

What is it? Prescription Drug Versions

Sativex

- Direct natural extracts of cannabis plant, THC and CBD
- Mouth spray
- Neuropathic pain and spasticity for MS, advanced cancer
- UK approved and moved from Schedule 1 to 4 (4/10/13)
- Still in clinical trials in US
- http://chealth.canoe.ca/drug_info_details.asp?brand_name_id=2000

Marinol

- Synthetic THC (dronabinol)
- Capsule
- Nausea and vomiting for cancer patients, appetite stimulation for AIDS patients, neuropathic pain for MS patients
- FDA approved for appetite stimulation (1992), nausea (1985)
- FDA made Schedule III on 7/2/99

What is it? **Prescription Drug Versions**

- Cesamet (nabilone)
 - Synthetic cannabinoid, similar to THC
 - Capsule
 - Nausea and vomiting for cancer patients
 - FDA approved originally in 1985, removed from market (to add warnings about potential effects to mental state of patient), reapproved on 5/15/06
- Other prescription drugs that contain chemicals similar to those in marijuana but not found in the plant: Dexanabinol, CT-3, Cannabinor, HU 308, HU 331, Rimonabant (Acomplia), Taranabant (MK-0364)

http://medicalmarijuana.procon.org/view.resource.php?resourceID=000883

• Top 10 ways to smoke marijuana

- 1. Volcano Vaporizer
- 2. Joint
- 3. Apple (creative pipe)
- 4. Blunt
- 5. Bong
- 6. Hookah
- 7. Pipe
- 8. Gravity bong (start with a 2-liter bottle)
- 9. "straight to the dome" (bud in one nostril, close the other, light it)
- 10. Hot knives

http://www.**stonerdays**.com/top-10-ways-to-smoke-weed/

Vaporizers

- Extracts active components without combustion
- Nearly eliminates particulate matter or tar
- How to get the highest quality vapor:
 - Maintain proper temperature
 - CBD @ 206.3°C, CBN @ 212.7°C, THC @ 149.3°C
 - Provide rapid onset delivery
 - Even extraction
 - Minimize oxidation
 - Run the vapor through water or ice

Southwest Medical Marijuana Evaluation Center (http://www.evaluationtoday.com/news_medicating_with_marijuana.html)

Edibles

- Not raw Where active ingredients are extracted into fats, oils or alcohol before ingesting
- Marijuana butter ("bud butter") to substitute for standard butter
 - http://www.thestonerscookbook.com/how_to_cook_with_weed.php
- Tincture (medicinal substance in an alcoholic solvent)
- Effects take longer to start (processed by digestive system)
 - So it's easier to ingest more than appropriate
- Effects last longer
 - ~30 minutes for smoking, several hours for edibles
- Dosage can vary

• Edibles – Dangerous

- Levi Thamba Pongi, 19
 - Ate 6x recommended amount of pot cookie
 - THC level of 7.2 nanograms
 - Colorado considers marijuana intoxication at 5 nanograms
 - First time marijuana user
 - Jumped from 4th floor balcony and died

http://denver.cbslocal.com/2014/04/16/college-student-ate-6-times-recommended-amount-of-pot-cookie-before-jumping-to-death/

• Topical

- Balms, lotions, ointments for analgesic and anti-inflammatory effects
- No psychoactive qualities
- Some potential uses:
 - Arthritis
 - Dry/chapped skin
 - Headaches or migraines
 - Minor burns
 - Muscle soreness
 - Rheumatism
 - Tendonitis

Southwest Medical Marijuana Evaluation Center (http://www.evaluationtoday.com/news_medicating_with_marijuana.html)

Charlotte's Web

- Marijuana extract high in CBD, no psychoactive effect, administered as an oil Realm Oil and Alepsia
- Named after 5-year old Charlotte Figi ..
 - First documented in the 2013 CNN series "Weed"
 - Born with Dravet Syndrome (epilepsy)
 - Traditional seizure medications were grossly ineffective
 - 300 seizures per week
 - Charlotte's Web reduced that to 2-3 per month
- Developed in 2011 by the Stanley brothers by crossbreeding a strain of marijuana with industrial hemp
- Moving to Uruguay (completely legal) so they can import to any U.S. state as hemp

State	Year Effective	Patient Registry?	Allow Dispensaries?	Specify Conditions?	Recognize Patients from other states?	Recreational Adult Use?
Alaska	1999	Yes	No	Yes		
Arizona	2010	Yes	Yes	Yes	Yes	
California	2003	Yes	Yes	No		
Colorado	2000	Yes	Yes	Yes		Yes (Eff. 1/1/14)
Connecticut	2012	Yes	Yes	Yes		
Delaware	2011	Yes	Yes	Yes	Yes	
District of Columbia	2010	Yes	Yes	TBD		
Hawaii	2000	Yes	No	Yes		
Illinois	2013	Yes	Yes	Yes	No	
Maine	2011	Yes	Yes	Yes	Yes	
Maryland * Not a fully functioning public program	2013	No	No	No (legal defense only)		
Massachusetts	2012	Yes	Yes	Yes		
Michigan	2008	Yes	No	Yes	Yes	
Minnesota	2014	Yes	Yes	Yes		
Montana	2011	Yes	No	Yes	No	
Nevada	2000	Yes	No	Yes		
New Hampshire	2013	Yes	Yes	Yes	Yes, with conditions	
New Jersey	2009	Yes	Yes	Yes		
New Mexico	2007	Yes	Yes	Yes		
New York	2014	Yes	Yes	Yes		
Oregon	2007	Yes	No	Yes		
Rhode Island	2009	Yes	Yes	Yes	Yes	
Vermont	2011	Yes	Yes	Yes		
Washington	2011	No	No	Yes		Yes

Legal Now Overview

23 states and DC (as of 8/14/14)

National Conference of State Legislatures

http://www.ncsl.org/research/he alth/state-medical-marijuana-laws.aspx

Considerations:

- 1. Will there be constraints on use?
- 2. Will patients from other states be recognized?

Legal Now Overview

State	Year Effective	Patient Registry?	Allow Dispensaries?	Specify Conditions?	Recognize Patients from other states?	Definitions of Products Allowed	Allows for Legal Defense	Allowed for Minors
Alabama	2014		UAB only	Yes	No	Yes	Yes	Yes
Florida	2014	Yes	Yes	Yes	No	Yes	No	Yes
Iowa	2014	Yes	Does not define	Yes	No	Yes	Yes	Yes
Kentucky	2014	No	Universities in KY	No	No	No		
Mississippi	2014		Ole Miss only	Yes	No	Yes	Yes	Yes
Missouri	2014	Yes	Yes	Yes	No	Yes	Yes	Yes
North Carolina	2014	Yes		Yes	No	Yes	Yes	Yes
South Carolina	2014	Yes	Yes	Yes	No	Yes	Yes	Yes
Tennessee	2014	Yes	Tenn Tech	Yes	No	Yes		
Utah	2014	Yes	Yes	Yes	No	Yes	Yes	Yes
Wisconsin	2013	No	No	Yes		Yes	No	Yes

11 states have **limited access** product laws (as of 8/14/14)

National Conference of State Legislatures http://www.ncsl.org/research/health/state-medical-marijuana-laws.aspx

Legal Now Overview

- Even more states considering ...
 - Midterm Election issue this November?
 - Pennsylvania
 - Ohio
 - Florida

http://www.thedp.com/article/2014/09/pennsylvania-medical-marijuana-closer-to-reality

Legal Now Colorado

Colorado

	Retail Tax	Medical Tax		
	Revenue	Revenue		
Month	(12.9%)	(2.9%)		
Jan 2014	\$1,608,224	\$913,519		
Feb 2014	\$1,649,039	\$1,022,176		
Mar 2014	\$2,183,366	\$999,900		
Apr 2014	\$2,504,557	\$919,982		
May 2014	\$2,429,149	\$927,330		
Jun 2014	\$2,786,755	\$830,861		
Total	\$13,161,090	\$5,613,768		

Total Tax Revenue

Jan-June

\$18,774.858

Colorado Department of Revenue

http://www.colorado.gov/cs/Satellite/Revenue-Main/XRM/1251633259746

Legal Now Unintended Consequences

Colorado

- "Surround and Drown"
- Hazmat Suits
- Underground market still flourishing
 - Grower can cultivate up to 16 plants per doctor prescription http://www.washingtonpost.com/news/storyline/wp/2014/07/30/inside-colorados-flourishing-segregated-black-market-for-pot/
- Stoned pets

http://www.usatoday.com/story/news/nation/2014/03/24/marijuana-pot-dogs-edible/6600763/

- Lawsuit that tax is Unconstitutional
 - Paying a tax is self-incrimination to a Federal crime http://www.forbes.com/sites/robertwood/2014/08/23/marijuana-taxes-are-upheld-but-paying-them-could-incriminate-you/

Legal Now Unintended Consequences

- Banks don't want to process accounts for dispensaries
 - Money laundering ... RICO
 - Accountants and attorneys also are concerned
 - In Minnesota, Wells Fargo and Bank of America have already confirmed they will not service the medical marijuana business
- Welfare recipients can use EBT cards at marijuana dispensaries
 http://www.washingtontimes.com/news/2014/sep/9/welfare-marijuana-jeff-sessions-tackles-loophole/
- Pot pop "Legal"
 - Soda infused with 10mg of liquid cannabis sold in Washington
 - "so ridiculously relaxing that you may find yourself becoming one with your furniture"

http://www.telegraph.co.uk/news/worldnews/northamerica/usa/11056733/Cannabis-infused-fizzy-drinks-on-sale-in-US.html?fb

Legal Coming Georgia

• Georgia

- House passed bill on 2/3/14 to legalize "Charlotte's Web" to treat certain seizure disorders, **passed 171-4**
- Did not pass in 2014 legislative session
- Governor Deal considered an executive order
 - "Discussing with the U.S. Food and Drug Administration how the state can launch legal clinical trials of liquid cannabis for child patients with epilepsy"

http://www.huffingtonpost.com/2014/04/10/georgia-medical-marijuana_n_5128724.html

Legal Coming Florida

• Florida

• More than 60 companies have incorporated in FL

http://www.bizjournals.com/southflorida/blog/morning-edition/2014/04/scramble-for-medical-marijuana-business-begins.html

- Certification available from *Medical Marijuana Tampa*
 - Caregiver certification: \$499
 - **Budtender** certification: \$599
 - Our four-day Budtender Certification course teaches you 'front-of-the-house' operations in the modern cannabis industry. We cover topics such as working with patients, strain knowledge and more. Includes Caregiver Certification as well.
 - Cultivator certification: \$799
 - Manager/Entrepreneur certification: \$1299

http://www.medicalmarijuanatampa.org/certificate-programs/

Legal Coming Recreational Use

Alaska

• Ballot initiative in November 2014 to regulate and tax marijuana like alcohol that will, in essence, legalize recreational marijuana

Oregon

• Legislature declined to add recreational legalization to the November 2014 ballot but advocates got it qualified anyway

• Advocates pushing for 2016 ballot initiatives in ...

- Arizona
- California
- Massachusetts
- Montana
- Nevada

http://news.yahoo.com/us-states-where-pot-is-legal-marijuana-134148042.html

Legal Coming International

Canada

- Currently, marijuana is prohibited
- The marijuana industry in British Columbia province ... \$7B annually
- Regulating it would reduce gangs and crime

http://www.huffingtonpost.ca/kash-heed/legalize-tax-marijuana-bc-pot-laws_b_1982793.html

• Jamaica – Ganja

- On 6/13/14, intention announced to legalize up to 2oz
- Leaving money on the table ... Watching Colorado

http://www.economist.com/blogs/americasview/2014/06/marijuana-jamaica

Complicating Dissonance Federal vs. State

- Marijuana is <u>illegal</u> at the Federal level
 - DEA Schedule I controlled substance
 - Substances in this schedule have no currently accepted medical use in the United States, a lack of accepted safety for use under medical supervision, and a high potential for abuse
 - Marijuana joins other drugs like heroin, LSD, peyote, meth, Ecstasy

http://www.deadiversion.usdoj.gov/schedules/

- President Obama, New Yorker magazine in January 2014
 - Marijuana is no more dangerous than alcohol
 - Bad habit
 - "The President is responsible for implementing and enforcing the laws written by Congress" Whitehouse.gov

Complicating Dissonance Federal vs. State

- USDOJ Memo to US Attorneys, August 29, 2013
 - Urges US Attorneys to exercise their discretion in using federal resources to prosecute individuals using marijuana for medical purposes
 - Emphasizes federal policy of enforcing CSA to prevent:
 - 1. Distribution of marijuana to minors
 - 2. Revenue to fall into hands of dangerous drug cartels
 - 3. Diverting medical marijuana from legal status to other states
 - 4. State-authorized marijuana activity from being used as a cover for trafficking other illegal drugs
 - 5. Violence in the cultivation and distribution of marijuana
 - 6. Drugged driving and other adverse public health consequences
 - 7. Growing marijuana on public or federal lands

Complicating Dissonance New Mexico

New Mexico

- NM Court of Appeals in May is requiring an employer to reimburse an injured worker for medical marijuana used for his low-back pain
- The "Compassionate Use act" allows a person to use medical marijuana for a debilitating medical condition
- The Work Comp statutes allow "reasonable and necessary" for an injured worker's treatment
- Even though medical marijuana is not a prescription drug, a "licensed dispensary" could qualify as a "service", and if that "service" were "reasonable and necessary" ...

Pain Management Comparison to Opioids

- Both can provide analgesia and some level of euphoria
- Downsides to Opioids
 - Opioids not meant for chronic use
 - Opioids have significant and often deadly side effects
 - Weaning process creates significant withdrawal symptoms
 - Many levels of potency increase tolerance, step-therapy
 - Is it a "gateway" drug?

Pain Management Comparison to Opioids

- August 2014
 - A study assessing the impact of medical marijuana laws on opioid overdose mortality rates
 - "Medical Cannabis Laws and Opioid Analgesic Overdose Mortality in the United States, 1999-2010", published by JAMA Internal Medicine
- 24.8% lower annual opioid overdose rate in the 13 states measured
 - AK, CA, CO, HI, ME, MI, MT, NM, NV, OR, RI, VT, WA
 - Fatal drug overdoses where opioid(s) were noted
 - Adjusted for how long the law had been in effect
 - Adjusted for other influencers like PDMP and pain mgmt oversight
- But be careful in drawing conclusions ...
 - Long list of caveats
 - "a direct causal link cannot be established"
 - Interesting data but too many unknowable variables to be definitive

Implications Inconsistent UDM

- Use of marijuana can be indicator for abuse/misuse of other drugs
- Per Ameritox study ...
 - 250,397 urine drug tests from 5/16/11-5/15/12
 - In cases where expected Hydrocodone was not found ...
 - 36.5% tested positive for THC
 - 59.6% tested positive for Cocaine
 - 29.7% had no illicit drugs
 - In cases where non-prescribed medication was found ...
 - 29.1% tested positive for THC
 - 29.9% tested positive for Cocaine
 - 22.0% had no illicit drugs

[&]quot;An analysis of the association between marijuana use and potential nonadherence in patients prescribed hydrocodone", M. DeGeorge et al 2013

Implications More Injuries

- From David DePaolo
 - "According to the National Institute on Drug Abuse, marijuana smokers are **more likely** than non-marijuana smokers to file workers' compensation claims. For example, a study among postal workers found that employees who tested positive for marijuana on a preemployment urine drug test had 55% more industrial accidents, 85% more injuries, and a 75% increase in absenteeism compared with those who tested negative for marijuana use."

http://daviddepaolo.blogspot.com/2014/03/co-pot-goes-to-court.html

http://www.drugabuse.gov/publications/research-reports/marijuana/how-does-marijuana-use-affect-school-work-social-life

Implications Drug Free Workplace

Impact on a drug-free workplace?

	Urine	Blood	Hair	Saliva
Marijuana - Single Use	1-7+ days	12-24 hours	Doubtful	Not validated (0 -24 hours?)
Marijuana - Regular Use	7-100 days	2-7 days	Months	Not validated (0 -24 hours?)
Amphetamines	1-3 days	24 hours	Months	Not validated (0 -24 hours?)
Cocaine	1-3 days	1-3 days	Months	Not validated (0 -24 hours?)
Heroin, Opiates	1-4 days	1-3 days	Months	Not validated (0 -24 hours?)
PCP	3-7 days	1-3 days	Months	Not validated (0 -24 hours?)

http://www.canorml.org/healthfacts/drugtestguide/drugtestdetection.html

Clinical Perspective Brain Changes

- Casual marijuana use changes the brain
 - Northwestern Medicine and Massachusetts General Hospital/Harvard Medical School study on casual use (1-2 times per week)
 - 20 adults (18-25) who smoked marijuana, 20 who did not
 - Scientists examined the nucleus accumbens and the amygdala -- key regions for **emotion** and **motivation**, and associated with **addiction** -- in the brains of casual marijuana users and non-users
 - "The more joints a person smoked, the more abnormal the shape, volume and density of the brain regions."

http://www.sciencenewsline.com/articles/2014041523060034.html

Clinical Perspective What does Healthcare think?

- American Medical Association (AMA)
 - Affirmed on 11/20/13 opposition to legalization of marijuana
 - "cannabis is a dangerous drug and as such is a public health concern"
 - "federal efforts to address illicit drug use via supply reduction and enforcement have been ineffective"
 - "modification of state and federal laws to emphasize public health based strategies to address and reduce cannabis use"
 - "public health based strategies, rather than incarceration"

http://www.usnews.com/news/articles/2013/11/20/ama-reaffirms-opposition-to-marijuana-legalization

Clinical Perspective What does Healthcare think?

- American Society of <u>Addiction</u> Medicine (ASAM)
 - Education for patients, health and human services professionals
 - Alcoholism should mean abstinence from marijuana
 - Marijuana dependency is an issue that needs to be treated
 - Medical uses (like Marinol) need to be carefully controlled
 - Smoking is dangerous
 - Continue evidence-based research
 - Physicians should be able to discuss risks and benefits with marijuana as with any other treatment

http://www.asam.org/docs/publicy-policy-statements/1marijuana-5-062.pdf?sfvrsn=0

Clinical Perspective What does Healthcare think?

- Official Disability Guidelines (ODG)
 - All cannabinoids are 'N' drugs "Not recommended for pain"
 - Recent research:
 - Cannabis users who start using the drug as adolescents show an irreparable decline in IQ, with more persistent use linked to a greater decline
 - Long-term marijuana use has been linked to structural brain changes similar to those observed in **schizophrenia patients**, and they correlate with poorer working memory

Minnesota Observations

- Medical marijuana legalized on 5/29/14
 - Got it right:
 - Methodical rollout
 - Dispensing begins 7/1/15
 - In-state manufacturers to manage quality and supply
 - Anyone can apply for license in Colorado
 - Patient safety by excluding smoking
 - Liquid, pill, vaporizers

Minnesota Observations

• Limited conditions ...

- Cancer, if the underlying condition or treatment produces one or more of the following:
 - severe or chronic pain
 - nausea or severe vomiting
 - cachexia or severe wasting
- Glaucoma
- Human immunodeficiency virus or acquired immune deficiency syndrome
- Tourette's syndrome
- Amyotrophic lateral sclerosis
- Seizures, including those characteristic of epilepsy
- Severe and persistent muscle spasms, including those characteristic of multiple sclerosis
- Crohn's disease
- Terminal illness, with a probable life expectancy of under one year, if the illness or its treatment produces one or more of the following:
 - severe or chronic pain
 - nausea or severe vomiting
 - cachexia or severe wasting
- Any other medical condition or its treatment approved by the commissioner
- Non-malignant chronic pain is <u>not</u> included

Minnesota Observations

• Memorable Quotes

- "Fundamentally members, the question is just that: Do you believe that health decisions are best made between doctors and patients? If you believe that, you ought to vote green on the bill."
 - Sen. Branden Petersen
- "We should probably be OK with snake oil, bloodletting, and the very popular leeching of a patient."
 - Sen. Warran Limmer
- "For God's sake, people are suffering. Let's hear their prayer."
 - Sen. Charles Wiger

http://www.myfoxtwincities.com/story/25439256/medical-marijuana-faces-possible-senate-floor-vote-tuesday

• **Bottom Line**

- Marijuana use is now acceptable in the USA
- The current evidence leans more towards negative consequences
- Trend towards diagnosis constraints on medical uses
- Once medical use is legalized, the door is open to legalizing recreational use





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Our Evidence Based blog

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