Medical Marijuana

Andrea G. Barthwell, MD, FASAM

CEO of EMGlobal, Founder and Director of Two Dreams

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Disclosures

- No conflict of interest with this content
- Potential perception of conflict:
  - Collaborator: Caron Foundation
  - Consultant: Alvee Laboratories, Braeburn Pharmaceuticals, Millennium Laboratories
  - Founder: The Parents Academy (supported, in part, by Caron Foundation)
  - Managing Partner: Treatment Partners LLC (Two Dreams Outer Banks)
  - Medical Director: Encounter Medical Group, P.C.
  - Partner: EMGlobal LLC
  - Former Consultant: GW Pharmaceuticals

Objectives

- Discuss possible solutions to the medical cannabis problem
- Explain how medications must meet tests regarding quality, safety, and efficacy
- Discuss ASAM recommendations for health professionals to implement best practices

Take Home Messages

- Differentiate therapeutic potential of specific chemicals delivered in controlled fashion via non-toxic delivery system vs. smoked marijuana
- Consider drug approval within the context of public health
- Apply standard of great care when prescribing controlled substances, considering why a substance is controlled

Characteristics of a Cannabis-Derived Prescription Medicine

- Able to pass standard procedures of regulatory scrutiny
  - Proof of safety and efficacy through RCTs leading to FDA approval
- Standardized- uniform in consistency and quality

Characteristics, continued

- Suitable and practical delivery system
  - Predictable dose increments
  - Predictable onset of defects
  - Minimizes risk to patients relative to intoxication, dependency, pulmonary exposure
- Controlled and regulated through pharmaceutical supply chain

Regulatory Requirements

- Strict requirements as to quality, safety, efficacy
- Cost effectiveness is a new requirement
- Good laboratory practice
- Good manufacturing practice
- Good clinical practice
- Good agricultural practice

Commercialization Needs

- Intellectual Property Rights
- Plant-based medicines
  - Plant variety rights
  - Process patents
  - Indications/usage patents
  - Drug delivery patents

Commercialization Needs, cont.

- Trademarks
- Registered designs
- Design rights
- Regulatory approvals
- CLINICAL NEED FOR THE PRODUCT

Cannabis Based Medicines

- Isolation and purification of individual molecules from pant sources
- Chemical synthesis of required molecular components
- Extraction of required plant components
- Selective delivery of required components

Ideal Delivery System

- Reliable intermediate onset
- Obviate smoking
- Allow dose titration
- Provide relief of symptoms
- Chemically definable
- Safe for physicians to prescribe using robust body of data

Historical Medical Development

- Many drugs derived from botanical or biological material
- In last century research focused on receptor modeling of potential therapeutic agents

Historical Medical, continued

- In last three decades American public interested in natural health approaches
  - Dietary Supplement and Health Education Act (1994)
  - Allows for FDA to regulate dietary supplement when recognizes compelling danger to public health and for manufacturer to take agent through standard drug approval process, IND status ad NDA

FDA Guidance for Industry Botanical Drug Product (2004)

- Inherent prejudice in favor of single molecule, synthetic medicines, and no clear process to enter botanicals into FDA process
- Document provides blueprint by which botanical products, defined as finished products containing vegetable matter, may be approved
  - Intended for use in diagnosing, mitigating, treating, or curing disease

FDA Guidance, continued

- Allows flexibility in early stages of research
- Particular attention paid to product composition
- If without GRAS designation must demonstrate safety and efficacy in randomized, double-blind and placebo-controlled, or dose-response trails

Process of Approval

- Safety-extension (SAFEX) studies required if other than oral administration
- Botanical Raw Material (BRM) goes to Botanical Drug Substance (BDS)
  - Process through extraction, blending, addition of excipients, formulation, and packaging
- Studies of pharmacokinetic (PK) and pharmacodynamics effects

Process of Approval, continued

- Monitoring for heavy metals, pesticides, microbial, and fungal contamination
- Two species animal toxicity studies
- Reproductive toxicity, genotoxicity, and carcinogenicity prior to NDA

Cannabis Sativa L.

- The plant- chemical composition
- Cannabinoids in the plant
- Scheduling history

Era of Cannabis Research: 200 AD-1940

- Circa 200 AD: Therapeutic properties of cannabis described in Chinese pharmacopeia
- 1838-1840: Sir W.B. O'Shaughnessy methodically assesses medicinal properties of cannabis, and publishes findings
- 1899: Wood et al. isolate cannabinol from cannabis resin
- 1932: Cahn elucidates part of the structure of cannabinol
- 1940: Todd et al. and Adams et al. simultaneously elucidate the full structure of cannabinol and successfully synthesize it

Era of Cannabinoid Research: 1960-1994

- 1960: Mechoulam (Hebrew University) identifies THC as the principal psychoactive component of cannabis
- 1964: Gaoni and Mechoulam (Hebrew University) elucidate the chemical structure of THC
- 1970-1990: Cannabinoid pharmacology is thoroughly studied
- 1985: Gardner shows cannabinoid-opioid interaction in brain
- 1986: Gardner shows THC activates brain-reward systems

Era 1960-1994, continued

- 1988: Howlett's group finds specific THC binding sites in brain
- 1990: Matsuda et al. clone the CB1 receptor
- 1992: Mechoulam's group (Hebrew University) in collaboration with Pertwee's group (Scotland) identify the first endocannabinoid – Mechoulam names it "anandamide" from the Sanskrit word "anand" meaning "bliss"
- 1993: Munro et al. clone the CB2 receptor

Era of Endocannabinoid Research: 1994-2000

- 1994: Scientists at Sanofi Recherche (France) develop the first CB1 receptor antagonist – SR141716A (Rimonabant)
- 1995: Mechoulam (Hebrew University) isolates and identifies the second endocannabinoid – 2-Arachidonoylglycerol (2-AG)
- 1996: Cravatt et al. (Scripps) clone the first endocannabinoid degrading enzyme – fatty acid amide hydrolase (FAAH)

Era of Research: 1994-2000

- 1998: House of Lords report on medical cannabis
- 1998: Di Marzo et al. propose interactions between endocannabinoids and vanilloid receptors
- 1999: Zygmunt et al. and Smart et al. show that anandamide activates vanilloid receptors

Current Endocannabinoid Research: 2000-

- 2003: Bisogno et al. clone the first endocannabinoid bio-synthesizing enzymes
- 2005: Pertwee et al. (Scotland) discovers an allosteric site on CB1 receptors
- 2005: Sativex® approved for sale in Canada
- 2010: Gardner shows psychoactive (and potentially therapeutic) effects of cannabidiol

Current Research: 2000-

- ????: Discovery of new cannabinoid receptors
- ????: Discovery of new endocannabinoids
- ????: Discovery of new endocannabinoid enzymes
- ????: Cloning of new endocannabinoid transporters
- ????: Discovery of new cannabinoid-based therapies

Different Paths of Opiates and Cannabinoids

- During the 1800s, the active ingredient in opium—morphine—was identified and isolated.
- Other opiates and synthetic medicines rapidly followed
- Opium was not smoked for medical purposes
- *The paths of medicinal opioid development and recreational use of smoked herbal opium became clearly distinct*

Different Paths, continued

- By contrast, the active ingredients in cannabis remained unknown
- Preparations lacked standardizations
- Clinical response varied
- Conditions were numerous
- Better, targeted medications developed
- Fell out of favor with the medical profession

System Function Summary

- To relax
- To eat
- To sleep
- To forget
- To protect

DiMarzo et al 1998

Characteristics of CB1 and CB2 Receptors

- Both densely distributed throughout the body
- CB1 highly enriched in central nervous system
- Located on axon terminals
- Mediate retrograde signaling (Dendrite → Axon)
- G-protein coupled
- CB2 highly enriched in periphery
  - Especially in immune system
- CB2 also in brain and CNS
  - Fewer than CB1; ~ Same density as μ opioid
  - Nonetheless, CB2s modulate neural signaling

CB1 modulates

- Movement
- Postural control
- Pain and sensory perception
- Memory
- Cognition
- Emotion
- Autonomic and endocrine functions

CB1 Sites

- Brain
- Gut
- Uterus
- Testes

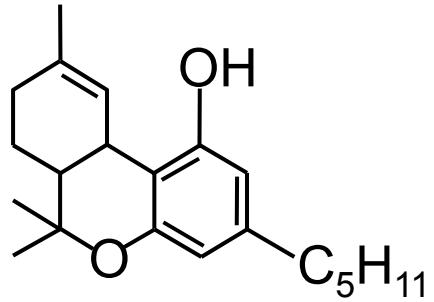
Brain Cannabinoid CB2 Receptors

- Exist in the brain
- Are functionally active in the brain
- Moduate behavior
- CB2 receptor agonists may be clinically useful in anti-addiction pharmacotherapies

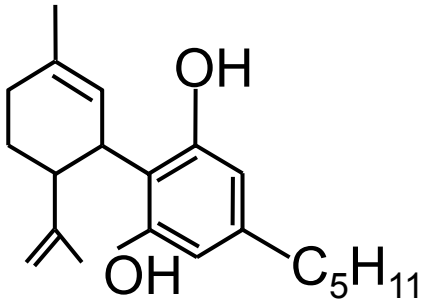
Classes of Cannabinoid Molecules

- Phytocannabinoids
  - Occur naturally in the plant, *Cannabis sativa* L
- Endocannabinoids
  - In the body (AEA, 2_AG, etc.)
- Synthetic Cannabinoids
  - Cannabinomimetic compounds from chemical synthesis
    - **Dronabinol, Nabilone, HU210, CP55940, SR141716A, etc.)**

Two Principle Cannabinoids



Δ^9-THC



CBD

- Like D9-THC, CBD is a natural constituent of cannabis
- Unlike D9-THC, CBD has low affinities for CB1 & CB2 receptors
- Unlike D9-THC, CBD lacks psychotropic activity

Pertwee, R.G. (2004) Pharmacology of cannabidiol. In: *Cannabinoids.* Ed. V. Di Marzo, pp. 32-83, Kluwer Academic/Plenum Publishers, New York

Pharmacological Strategy

- Exploit properties of the cannabinoid system while minimizing the psychotropic effects of the molecule(s) used

Significance of Findings

- Cloning of CB1 and CB2 enabled discovery of endogenous agonists and enzymes that catalyze endocannabinoid inactivation
- Endocannabinoids that are produced endogenously following onset of pathology may act in site- and time- specific manner to minimize consequences of condition

Significance, continued

- The endogenous endocannabinoids may differ significantly from THC and synthetic CB1 and CB2 agonists in their ability to limit extension of insult, injury
  - Preclinical data supports this view: animal benefit in neuropathic pain, anxiety, irritable bowel syndrome, proliferation and migration of CA cells
- Clinical target at degrading enzymes to prolong pro-homeostatic actions

What WE Know

- Unimpeachable Preclinical Research Indicates That There Are Many Diseases (Some Currently Totally Untreatable) That Can Be Successfully Treated By Cannabinoid Agonists or Antagonists

What We Know

- Unimpeachable Preclinical Research Indicates That There Are Many Ways In Which The Endocannabinoid System of The Body Can Be Manipulated to Produce Either Cannabinoid Agonist or Antagonist Actions

Potential Cannabinoid Therapies

- Diseases of Energy Metabolism
  - Appetite Dysregulation
  - Obesity
  - Dyslipidemia
  - Peripheral Energy Metabolism Dysregulation
  - Cachexia
  - Anorexia
  - Type II Diabetes

Potential Therapies

- Pain
  - Somatosensory Pain
  - Neuropathic Pain
- CNS Disorders
  - Closed Head Brain Trauma
  - Neurotoxicity
  - Stroke
  - Spinal Cord Injury
  - Multiple Sclerosis

Potential Therapies

- CNS Continued
  - Multiple Sclerosis
  - Parkinson's Disease
  - Huntington's Disease
  - Tourette's Syndrome
  - Tardive Dyskinesia
  - Dystonia
  - Amyotrophic Lateral Sclerosis
  - Alzheimer's Disease

Potential Therapies

- CNS Continued
  - Epilepsy
  - Anxiety
  - Depression
  - Insomnia
  - Post-Traumatic Stress Disorder
  - Schizophrenia
  - Drug and Alcohol Addition
  - Nausea and Emesis

Potential Therapies

- Cardiovascular & Respiratory
  - Hypertension
  - Hypotension
  - Circulatory Shock
  - Myocardial Reperfusion Injury
  - Atherosclerosis
  - Cardiopathies
  - Asthma
- Inflammation

Potential Therapies

- Eye Disorders
  - Glaucoma
  - Retinopathy
  - Intraocular Pressure
- Reproductive Disorders
- Musculoskeletal Disorders
  - Arthritis
  - Osteoporosis
  - Post-Fracture Bone Healing

Potential Therapies

- GI and Liver Disorders
  - Inflammatory Bowel Disease
  - Ulcerative Colitis
  - Hepatitis
  - Cirrhosis – Encephalopathy
  - Cirrhosis – Liver Fibrosis
  - Cirrhosis – Vasodilatation
- Cancer
  - Cancer Cell Proliferation
  - Colorectal Cancer

Modern Cannabis Research

- Cannabinoid receptors, endogenous cannabinoids, receptor ligands
- Significance of synthetic analogues
- Anti-inflammatory nature of “Cannabinoid Receptor”
- Discovery of Distribution of sites
- SKR6 receptor identified, no ligand for receptor
  - Human G-protein receptor with 98% sequencing
  - Birth of CB1 and CB2 receptors
- Wide distribution of receptors

Modern Cannabis Research, continued

- Brain constituents bind to cannabinoid receptor
  - Arachidonylethanolamide (AEA, anandamide)
    - **Partial agonist**
  - 2-arachidonoyl-glycerol (2-AG)
    - **Full agonist**
- Synthetic receptor ligands
  - Used as tools to study system and potential pharmaceutical products
  - SR14176A, Marinol ®, Synhexyl, Nabilone, Levonantradol

Classes of Cannabinoids

- Phytocannabinoids
- Endocannabinoids
- Synthetic Cannabinoids

Rationale for Cannabis-Based Medicines

- Recent research revealed that both principle components of cannabis have important pharmacological effects
  - THC: analgesic, anti-spasmodic, anti-tremor, anti-inflammatory, appetite stimulant, anti-emetic
  - CBD- anti-inflammatory, anti-convulsants, anti-psychotic, anti-oxidant, neuroprotective, immunomodualtory
- Different ratios may be important clinically

Synthetics

- Dronabinol
- Nabilone
- Ajulemic acid

Dronabinol

- THC approved for treatment of chemotherapy-associated nausea in 1985
- AIDS wasting in 1992
- Pain study results mixed
  - Refractory neuropathic pain (Attal et al 2004, Clermont-Gnamine, et al 2002)
    - **Doses up to 25 mg without clear effect on pain or allodynia, prominent side effects**

Dronabinol, continued

- Chronic exposure (Rudich 2003) with early results not maintained
- In MS (Swendsen 2004) Marinol® group with median numerical pain scale reduced and median pain relief improved over placebo
- Pure oral THC elicits complaints of intoxication and sedation

Other THC Forms

- In early development stages
- THC hemisuccinate suppositories have 2x bioavailability over oral
- THC skin patches associated with low serum delivery
  - Patch development slowed due to diversion risk

Other THC Forms, continued

- Inhaled THC poses challenges
  - Physical properties of molecule is irritating and cough-inducing
  - Certain conditions might benefit from this formulation (breakthrough or paroxysmal pain-spasm, trigeminal neuralgia, cluster headache, etc.) but many conditions do not require this onset

Nabilone (Cessamet ®)

- Synthetic cannabinoid
- 10x more potent
- Lower abuse potential
- Available in UK, Canada, Australia and U.S. as anti-emetic
- Analgesic effects noted with prominent drowsiness and dysphoria (Notcutt 1997)

Ajulemic Acid

- Synthetic cannabinoid derivative with analgesic and anti-inflammatory properties in animal models
- Binds to peroxisome proliferator-activated receptor gamma
- Involved in inflammatory mechanisms

Ajulemic Acid, continued

- Suppress monocyte interleukin-1beta production in vitro
- Promising anti-inflammatory and analgesic properties
- Does bind to CB1 and could have psychoactive effects
- Clinical research focused on IC

Herbal Cannabis

- Few RTCs completed (Campbell, Trambler, BMJ 2002- review article)
- Analgesic efficacy in HIV related neuropathic pain (Abrams- poster) with > 30% reduction in pain v. placebo
- Efficacy alone not sufficient for NDA, smoked cannabis would face regulatory hurdles from smoking

Herbal Cannabis, continued

- Chronic smoking increases cough, phlegm, bronchitic complaints
- Presence of tars, polyaromatic hydrocarbons, and other toxic components seemingly preclude approval
- “cannabis arteritis” reported (Combermale 2005)
- Report of meningococcal meningitis in Vancouver spread by shared joints likely preclude approval (Zanocco- web finding)

Other Methods of Delivery

- Vaporization
  - Volatilize cannabis components without burning
  - Markedly reduced carbon monoxide levels
  - Reduced, not eliminated carcinogenic pyrolytic end products
  - As medical device is not portable or convenient

Other Methods of Delivery, cont.

- Oral ingestion
  - Delayed onset of action precludes ready dosage titration
  - Absorption is erratic and far from complete without lipid carrier
  - N&V precludes delivery
  - “First pass effect” produces 11-hydroxyl- THC

Production of Cannabis Based Medicine Extracts (CBMEs) from botanical raw material (BRM)

- Breeding
- Cultivation
- Drying
- Extraction
- BDS Content
- BDP

Cannador

- Encapsulated oral cannabis extract used in European studies
- THC:CBD ratios vary, yet said to be standardized
- Differences between Cannador and Marinol® not clear in MS studies (Zajicek)
- Mixed results in pain studies post-op

Sativex®

- Two chemovars with 96% THC, 90% CBD
- CBD claims as nonpsychoactive, analgesic, and anti-inflammatory drug that counteracts AEs associated with THC (Russo, Guy, Medical Hypotheses, 2006)

Sativex®, continued

- Blend of Tetranabines® and Nabidiolex ®
- Dried inflorescences of unfertilized female cannabis plants are extracted and processed under GMP to yield BDS
- Minor cannabinoids (5-6%), terpenes (6-7%), sterols (6%), triglycerides, alkanes, squalene, tocopherol, carotenoids, and other components

Sativex® continued

- Medicine formulated into sublingual and oro-mucosal spray
- 100 microliter pump-action spray contains 2.7 mg of THC and 2.5 mg of CBD
- Onset of action 15-40 minutes
- Patients titrate dosing to symptoms

Other Considerations

- The entourage effect
- Need psychoactive effects to see therapeutic effects
- COX inhibition
- Blinding in cannabis trials
- Scheduling
- Cognitive issues
- Immune function
- Drug-drug interactions
- Driving safety

Ways to Extend Cannabinoid Effect

- Provide more
  - Dump into system
  - Encourage synthesis
- Block re-uptake
- Block degradation
- Synergistic actions to change receptor reactivity
- Others?, more “sticky” versions

Potential Cannabinoid Therapies - Tools

- Endocannab Uptake Inhibitors – AM404, UCM707, AM1172
- FAAH Inhibitors – URB597, OL135, BMS1, SA47, PF750
- MAGL Inhibitors – URB602, OMDM169, JZL184
- Dual CB1/CB2 Agonists – WIN55512, CP55940, HU210
- Anandamide Analogues – Methanandamide, Metfluoroanand.
- Selective CB1 Agonists – ACEA, ACCP

Potential Therapies- Tools

- Selective CB2 Agonists – HU308, JWH015, JWH133, AM1241
- 2-AG Synthesis Inhibitors – O3640, O3891, OMDM188, O5596
- CB1 Antagonists/Inverse Agonists – SR141716A, AM251
- CB1 Neutral Antagonists – AM4113, PIMSR1
- CB2 Antagonists/Inverse Agonists – SR144528, AM630
- CB1 Receptor Allosteric Modulators – ORG27596, ORG29647

What is “Medical Marijuana?”

- Home remedy
- Dietary supplement
  - Numerous botanicals- taken by mouth, supplements the diet (vitamins, minerals, herbs, other botanicals, amino acids, enzymes, organ tissues, glandulars, and metabolites)
  - DSHEA of 1994 places under general umbrella of foods, not drugs- cannot make disease claim
- FDA approved medicine
  - OTC v. Prescription drug

Botanical Drug

- Intended for diagnosis, cure, mitigation, treatment or prevention of disease
- Consists of vegetable materials available as a solution, powder, tablet, capsule, elixir, topical or injection
- Complex mixtures, lack distinct active ingredient, substantial prior human use
- Some (cascara, psyllium, senna, etc.) are OTC with published safety, efficacy data

Why Do We Care About the FDA Process?

- Protect patient health and safety
  - promote quality, safety and efficacy of medications
- Testing for body of risk/benefit and pharmacological data
- Registration/inspection ensures manufacturing quality control tools
- Promotional activities of manufacturers limited
- Products prescribed/dispensed under the supervision of licensed health providers

Hazards of Marijuana Contrasted with Pharmaceutical Product

- Harmful constituents of smoked marijuana
  - Bronchial irritation and pyrolytic compounds in a bad delivery system
- Potential for abuse
  - Reward
- Recreational users seek the “high”
  - Manage therapeutic window
- Lack standardization with contamination
  - Fungi, heavy metals, variance

Contrasts, continued

- No regulation of sources of manufacture and distribution
  - Distribution chain monitoring
- Lack of patient information and support
  - Unable to study in RCTs, lack information to advise
- Liability
  - Insurance does not cover recommendation of illegal product, patients are on their own

Contrasts, continued

- Stigma
  - Illegality of product, not covered by heath care insurance, stress/anxiety/ inconvenience associated with illegal product
- Access
  - Not contained within health care environments
- Public health considerations
  - Undermines prevention- perception of risk

Does "Medical Marijuana" Fit into the FDA Paradigm?

- Composition (% of THC) of herbal cannabis varies significantly
  - Depends on strains, cultivation and storage, etc.
- North American cannabis bred to exhibit (only) high levels of THC
  - No meaningful levels of other cannabinoids such as CBD

Does “Medical Marijuana” Fit into the FDA Paradigm?, cont.

- Delivery systems (smoked/vaporized, baked goods, teas) do not provide a standardized dose
  - Smoking delivers harmful combustion products to the lungs
  - Vaporization does not completely eliminate PAHs
- Contamination with microbes, heavy metal, and pesticides a real possibility

Does "Medical Marijuana" Fit into the FDA Paradigm?, cont.

- Distribution does not take place within regulated supply chain for pharmaceuticals
  - "Collectives" and "cooperatives"
- No collection of adverse event or efficacy data
  - Impossible to know who is really benefiting or being harmed
- Medical advice being given by untrained and unlicensed individuals
  - Broad efficacy claims
  - Often no meaningful physician supervision
  - No labeling with risk information or instructions for use
- Patients cannot obtain health insurance coverage

What Would it Take for a Cannabis Product to Secure FDA Approval?

- Herbal material grown by clones under rigorous conditions, ideally computer controlled greenhouses, to produce standardized starting materials
  - Under international policies of last 85 years, US imports, rather than cultivates, psychoactive herbal material and manufactures finished products in US

What Would it Take for a Cannabis Product, continued

- Need to incorporate **an extract** ("Botanical Drug Substance") into an appropriate delivery system;
  - No precedent for administering **any** crude herbal material in a manner that reliably achieves a reproducible dose, produces no carcinogens

FDA Approval, continued

- Sponsor must manufacture and test product in accordance with FDA “Guidance for Industry: Botanical Drug Products”
  - Guidance allows some leniency in early research; by Phase 3 /NDA, all NCE standards must be met
  - Blinded, placebo-controlled large clinical studies must examine specific medical condition in specific population
  - Sponsor must conduct abuse liability testing and prepare risk management plan

What About the DEA?

- DEA must register clinical and preclinical research sites and importer/manufacturer
- After NDA, DEA must reschedule product
  - FDA approval satisfies "currently acceptable medical use in the US" **for that product**

ASAM Recommendations

- ASAM recommends its members and other physician organizations and their members reject responsibility for providing access to cannabis and cannabis-based medications until such time that these materials receive marketing approval from the Food and Drug Administration.

ASAM Recommendations

- ASAM asserts that cannabis, cannabis-based medications, and cannabis delivery devices should be subject to the same standards that are applicable to other prescription medications and medical devices and that these medications or devices should not be distributed or otherwise provided to patients unless and until such medications or devices have received marketing approval from the Food and Drug Administration.

ASAM Recommendations

- ASAM rejects smoking as a means of drug delivery since it is inherently unsafe

ASAM Recommendations

- ASAM supports the need for federal regulatory standards for drug approval and distribution. ASAM recognizes that states can enact limitations that are more restrictive but rejects the concept that states could enact more permissive regulatory standards. ASAM discourages state interference in the federal medication approval process

ASAM Recommendations

- ASAM rejects a process whereby State and local ballot initiatives approve medicines because these initiatives are being decided by individuals not qualified to make such decisions (based upon a careful science-based review of safety and efficacy, standardization and formulation for dosing, or provide a means for a regulated, closed system of distribution for marijuana which is a CNS drug with abuse potential)

ASAM Recommendations

- ASAM asserts that physician organizations operating in states where physicians are placed in the gate-keeping role have an obligation to help licensing authorities assure that physicians who choose to discuss the medical use of cannabis and cannabis-based products with patients:

ASAM Recommendations

- Adhere to the established professional tenets of proper patient care, including
  - History good faith examination of the patient
  - Development of a treatment plan with objectives
  - Provision of informed consent, including discussion of risks, side effects, and potential benefits

ASAM Recommendations

- Periodic review of the treatment's efficacy
- Consultation as necessary
- Proper record keeping that supports the decision to recommend the use of cannabis

ASAM Recommendations

- Have a *bona fide physician-patient relationship with the patient, i.e., should have a pre-existing and ongoing relationship with the patient as a treating physician;*
- Ensure that the issuance of "recommendations" is not a disproportionately large (or even exclusive) aspect of their practice

ASAM Recommendations

- Not issue a recommendation unless the physician has adequate information regarding the composition and dose of the cannabis product
- Have adequate training in identifying substance abuse and addiction

Resources

- ASAM website for Policy Statements (http://www.asam.org)
- CLAAD for Citizen's Petition, membership, news (http://claad.org)
- Two Dreams for clinical information (http://www.twodreams.com)

Thank You!

Questions?

TWO DREAMS
Chicago

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