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To: Colleagues
From: Robert Garner, Director
Subject: Medical Marijuana

Medical marijuana is very much in the news these days, in large part because of California's policy supporting the use of marijuana for specified medical conditions and the Federal policy in opposition to such use. Recent court cases have added to the confusion. One of the positive outcomes of this issue is the significant public discussion that has taken place. Public discussion about any aspect of the drug abuse problem seems to be difficult, largely because of the conflicting personal values and political positions that are part of any discussion. But without such discussion public consensus is virtually impossible to achieve. Although I think the real differences in the positions currently articulated are based on different values and political positions, it is essential in any public debate to have accurate information. I do not think this standard has been met.

I am attaching a discussion of the science behind the medical marijuana issue prepared by Mark Stanford, Ph.D., the Director of Addiction Medicine and Therapy for the County's Department of Alcohol and Drug Services. Dr. Stanford has lectured extensively on the issue of psycho-pharmacology and is the author of a textbook on the subject. He is on the clinical faculty of UC Berkeley Continuing Education Department of Mathematics and Science and a lecturer in the neuroscience of addictions at Stanford University School of Medicine. He has taught graduate level studies in psychopharmacology at San Jose State University and Cal State Hayward as well. Dr Stanford is an active member with the Association for the Medical Education and Research in Substance Abuse (AMERSA).

One issue worth noting is the substantive differences between the recommended medical use of marijuana by the Federal Institute of Medicine (IOM) and the list of approved medical uses spelled out in California law. This is an example of the difference between science and politics and values I briefly discussed above. I hope you will find this article interesting and helpful in understanding and perhaps participating in the public debate on this issue. I hope you will share it with others you think would be interested.

Attachment

MEDICAL MARIJUANA: WHAT IS GOOD MEDICINE AND WHO DECIDES?

Prepared by

Mark Stanford, Ph.D.

Having been a neuroscience educator in psychopharmacology for many years, I get questions on many of the controversial drug issues. One of the most popular questions of late is the debate over medical marijuana – is it good or not?

Below I have summarized the position statements from those groups whose job is to review the information on any medical treatment and to develop a position on the issue. The American Medical Association, as you will note, takes a rather firm position about the lack of science behind marijuana used medicinally and therefore is against its use in any capacity. The California Medical Association is not as emphatic and takes a more compassionate position for marijuana use by some individuals under certain medical conditions.

While there may be specific individual chemicals within the marijuana plant (called, *cannabinoids*) that may have some potential therapeutic value, the whole plant does not. Ingesting the whole plant intending for the therapeutic benefit of a few specific cannabinoids represents a host of clinical and safety concerns.

As a comparison, nicotine may have medicinal value for some types of medical conditions, but there is no clinical or medical rationale for consuming the whole tobacco plant. This is because there are many chemicals in tobacco that are toxic and contraindicated in general, particularly when one inhales the smoke from the burning plant itself. Because of this, we do not have a “medical tobacco.” The same dynamic can be applied to the marijuana plant. The term “medical marijuana” can be misleading because the inhalation of burning vegetation is simply not medicine by any modern medical standard.

In the past 35 years, through hybridization and sophisticated growing techniques, the potency of marijuana has escalated from the .5 percent THC (the most psychoactive cannabinoid in the plant) of the 1960s to varieties today with a THC potency in excess of 30 percent (i.e., “BC Buds”). This has manifested as increased episodes of psychiatric emergencies associated with marijuana use. Further, ingesting marijuana in the form of brownies or “space cakes” is associated with increased heart rate, nausea, vomiting, loss of consciousness, and anxiety.

Marijuana, whether smoked or eaten contains, 483 compounds including some that are carcinogenic. These compounds will affect each person in a different way and can be magnified by other drugs, legal or illegal, that the individual may have taken, as well as other factors such as fatigue and stress. Without testing each quantity of marijuana, which varies not only from hybrid to hybrid but from grower to grower and plant to plant, there is no way of knowing the exact potency of THC or any of the other 482 compounds found in marijuana.

Even if this could be done, it would still be impossible to determine an appropriate dose for medical use because the combustion associated with smoking transforms the marijuana into over 2,000 compounds, each impacting the patient differently. And, if eaten, depending on the metabolism of the individual and other drugs the person might be taking, it would be absorbed at different rates, or perhaps not absorbed at all. And finally, because THC is fat soluble, it is retained in the body for a much longer period of time than compounds that are water soluble. That being the case, after one or two days of self-dosing, there is no way to tell how much marijuana remains in the body with potential to interact adversely with other drugs.

Even though there are anecdotal accounts of marijuana having medicinal properties, conscientious researchers and physicians consider it extremely unwise and dangerous to suggest that an individual smoke or ingest crude marijuana to obtain possible medical benefit.

Most doctors want the best medicine possible for their patients. The American Medical Association, the Federal Drug Administration, the National Multiple Sclerosis Society, the American Glaucoma Society, the American Academy of Ophthalmology, and the American Cancer Society have all rejected the use of smoked marijuana as a medicine. Marijuana is not recognized as a medicine in generally accepted pharmacopoeia, medical references, or textbooks. Although synthetic marijuana (THC) in a pure and standardized form is available by prescription, it is often the last choice of doctors, because many better medicines are available. Highlighting the AMA position on the use of medicinal marijuana are the following points:

Marijuana is an effective medication for nausea associated with cancer chemotherapy.

Oncologists overwhelmingly reject the idea of prescribing smoked marijuana. Crude marijuana contains over 400 different chemicals. THC, the main active ingredient in crude marijuana, is available as the prescription drug Marinol for the treatment of nausea associated with chemotherapy; however, safer and more effective anti-emetic medications are available and preferred by oncologists.

Marijuana is a beneficial treatment for glaucoma.

There is no scientific evidence that marijuana prevents the progression of visual loss in glaucoma. While marijuana, as well as alcohol and a host of other substances, can lower intraocular eye pressure, the medication must be carefully tailored to the individual to prevent further eye damage. Besides numerous adverse side effects of smoking marijuana, the dose cannot be controlled.

Crude marijuana is effective in treating the wasting syndrome associated with AIDS.

Smoking marijuana compromises the immune system and puts AIDS patients at significant risk for infections and respiratory problems. Current scientific studies show that Marinol (synthetic THC in pill form), which is available to treat AIDS wasting syndrome, is effective in increasing appetite but is ineffective in increasing weight gain.

Smoking marijuana reduces the spasticity associated with multiple sclerosis.

In a recent double-blind scientific study, the latest high-tech electronic monitoring equipment was used to determine if smoked marijuana had any benefit in treating spasticity in patients with

MS. The study found that all patients receiving marijuana, rather than placebo, perceived their spasticity to be lessened, when in actuality, it was made worse. There is a new *cannabis-derived* medication, cannabinoids called Sativex, which is being used in Canada to treat neuropathic pain associated with multiple sclerosis. However, it is a product that is pharmaceutically pure, uses specific cannabinoids of the whole plant and is in a bronchial inhaler type of product to ensure a more accurate dose delivery.

Notwithstanding the references above, the California Medical Association (CMA) has taken somewhat of a different position than that of the AMA. While certainly opposing the non-specific use of marijuana as a medicinal, the CMA encourages continued scientific inquiry to the value of marijuana as a medicine. The California Medical Association's position on medical marijuana is rooted in the core belief that patients should not suffer unnecessarily when other options fail. CMA supports controlled studies to scientifically determine the medicinal value and efficacy of using marijuana for patient care. The CMA policy on medicinal marijuana is highlighted as follows:

- **Protocols for Prescribing Cannabinoids:** While opposing the recreational use of marijuana, CMA believes therapeutic use of cannabinoids under the direction of a physician may be appropriate for certain conditions. CMA encourages a comprehensive study to determine the appropriate protocol for the prescriptive use of cannabinoids.
- **Compassionate Prescribing of Marijuana:** CMA supports efforts to expedite access to cannabinoids for therapeutic use as a Schedule II drug under the direction of a physician if controlled studies prove efficacy.

Just as nicotine is not tobacco, or taxol is not yew tree bark, and digoxin is not foxglove, cannabinoids are not marijuana — although Dronabinol (THC), marketed under the brand name Marinol, is often referred to as marijuana or cannabis, fueling the public's misperception.

The public needs to understand the dangers in blindly accepting the rhetoric that crude plant material, particularly one with as many known unpleasant and dangerous side effects as marijuana, can be taken safely. Even drugs that have been arduously tested for safety and efficacy can be dangerous when used in combination with other drugs, or when an inappropriate dose is given, or when other factors affect the patient. Physicians prescribing such medications should be well aware of these potentials and advise the patient. Because of its multiple compounds, there is no way a physician can safely “prescribe” the ingestion of the marijuana plant, even were the U.S. Government to capitulate to legalization of this dangerous and unpredictable substance.

NOTE: Cannabis-derived medicines are made of cannabinoids that have been extracted from the raw plant material as opposed to being synthesized, much the same as vitamin C is typically synthesized but may be extracted from plant material such as rose hips. The end product contains only the purified ingredient.