

White Paper

Quality Assurance for Medical Cannabis



A testing and accountability program reduces risks, improves quality, and helps legitimize medical marijuana

Summary

Smoking cannabis (marijuana) has become an effective way to treat weight loss associated with HIV, and is especially an alternative for people with therapy-related nausea who don't benefit from anti-nausea medication. Cannabis (smoked or eaten) is also effective for treating mild pain from various illnesses, and stimulating appetite for people with HIV-related anorexia.

However, patients in states that have legalized medical cannabis are concerned about the quality of the product. Patients need medicine that is free of pesticides and safe from microbiological contamination, and they need to know its dosage. At the same time, opponents of medical cannabis have seized the opportunity to portray its quality in the worst possible light in order to suppress dispensaries that are legal in certain states. As a result, no federal and state regulatory protections are in place, and the cannabis products distributed by dispensaries are not subject to reliable oversight.

Cannabis dispensaries need to improve the perception that they are not showing enough concern for their patients. As health care providers, they need to improve procedures for buying and distributing medical cannabis, and provide more detailed information about the medicine. The industry has yet to see legal cases involving contaminated cannabis, but they are likely to arrive as the use of medical cannabis grows. Medical cannabis advocates need to promote the testing of cannabis in order to dispel opinions that "crude" herbal cannabis, and especially its preparation, should not be considered medicinal.

Steep Hill Lab offers comprehensive medical cannabis safety screening and an independent certification system — including the "SafeCannabis" certification seal identified to customers with labels and stickers provided to participating dispensaries and growers — to self-regulate their processes in order to assure safe and clean medicines and advance the cause of cannabis therapeutics. Independent testing can reduce the risks of contamination, and thereby improve the overall quality of the cannabis distributed as medicine through the dispensaries. Steep Hill's certification program helps medical cannabis patients know the quality of the cannabis they are using as medicine. The SafeCannabis Seal assures the patient that the medicine is pure, pesticide-free, and properly measured for potency.

With the SafeCannabis Seal and certification program, dispensaries can improve care for their patients and move quickly toward compliance with regulations that require testing for contaminants. Growers can ensure quality and improve their operations. Advocates, patients, dispensaries, and growers all benefit from testing that helps to legitimize medical cannabis. Rather than suffering a quality crisis that fuels the opposition, the medical cannabis industry can thrive in an atmosphere of self-regulation and control, and ensure that the medicines are safe and effective.

The Need to Develop Standards for Medical Cannabis

Medical cannabis (marijuana) has been shown to be effective in reducing the nausea induced by cancer chemotherapy, stimulating appetite in AIDS patients, and reducing intraocular pressure in people with glaucoma. There is also appreciable evidence that cannabis reduces muscle spasticity in patients with neurological disorders. A synthetic THC capsule is available by prescription, but it is not as effective for many patients as the whole plant extract, either smoked or ingested. The capsule may also produce more unpleasant psychoactive side effects than smoked cannabis.¹

However, political opposition to the compassionate use of smoked cannabis and other cannabis products has stalled the kind of research and testing that should be conducted to guarantee its safety. Patients in states (such as California) who rely on smoking medical cannabis or consuming cannabis edibles— and who know that the benefits they derive from it outweigh all of the reported side-effects and safety concerns — are left “holding the bag” of medicine of questionable quality.

“Cannabis was an important medicine from ancient times until the mid-20th century, and has officially regained that status in Canada and Europe in recently,” says David W. Pate, Ph.D., M.Sc., Senior Technical Officer, HortaPharm BV (botany and chemistry of cannabis), Amsterdam, The Netherlands. “In addition, its primary active ingredient (THC) has been sold in the United States as an FDA-approved drug for approximately 25 years, at times earning well into nine figures per year in sales. Therefore, any supposed controversy regarding the safety and efficacy of cannabis as a legitimate medicine is an obvious political fiction. What remains is simply a question of format and cost, along with issues of quality control. The herbal approach represents the most basic format at the lowest cost. However, the present completely decentralized system of production and distribution requires some form of third-party quality control if patients are to have confidence in their medicine, assuming that they are unwilling or unable to grow it themselves.”

Patients battling severe pain or who must undergo chemotherapy deserve safe cannabis products — they shouldn’t have to grow their own medicine or turn to the black market. “Cannabis should be subject to rigorous quality control oversight, like any other medicine,” says Michael Backes, Board Member of Cornerstone Research Collective, a leading cannabis dispensary with a reputation for providing scientific research and homegrown cannabis to patients suffering from cancer or other diseases.

Patients need high-quality medicine

The medicines you buy in a pharmacy have been run through a battery of tests to insure their quality. The potency of a drug is clearly stated on the label so one knows the correct dose.

Unfortunately, this is not the case in medical cannabis. Patients need to have confidence that they are administering an appropriate dose. “Certain minimum levels of [the active ingredient] THC in the herb must be maintained (upwards of 10%) for practical reasons of economy and smoke-inhalation minimization,” explains Dr. Pate. “As CBD and possibly other cannabinoids may add or subtract from the primary THC effects, and have effects themselves, their presence should also be accounted.”

Patients also need medicine that is free of pesticides, which are sometimes used in growing operations. Pesticides are used to kill mites that thrive on and kill indoor plants, because the mites don’t face any insect predators. Exposure to these chemicals can be harmful to patients; they are toxic at high levels and can be harmful even at lower doses. Even outdoor plants can be exposed to pesticides. “Levels of these compounds can range from zero to massive, depending on cultivation practices,” says Dr. Pate. “Some of these compounds might potentially produce acute symptoms, but probably the greatest danger occurs with chronic

¹ Zimmer, Lynn and Morgan, John. *Marijuana Myths, Marijuana Facts: A Review Of The Scientific Evidence*. New York: The Drug Policy Alliance. (<http://www.drugpolicy.org/marijuana/factsmyths/>)

exposure. Insidiously, the consumer will normally be completely unaware of this exposure until symptoms manifest. Hence, detection of potential chemical contamination is of paramount importance.”

Microorganisms, such as molds, bacteria and yeast, are found in small amounts in food and drink and the air we breathe, as well as in cannabis and other herbal remedies. Carefully cultivated and harvested cannabis harbors a minimum of hazardous microorganisms, but for added protection, material must be screened for contamination before it is packaged for use as medical cannabis. In the Netherlands, cannabis is grown for medical use by two

You smoke ten random samples of cannabis and you've most likely smoked Aspergillus [mold].

— David Lampach, President and Co-Founder, Steep Hill Lab

cultivators who are licensed by the government's Office of Medicinal Cannabis, and the product is irradiated and distributed by licensed pharmacies.² Canada runs a government-sponsored and licensed cultivation program for small and industrial growers in which cannabis is irradiated before distribution.³ “For those with severely compromised immune systems, the presence and amount of certain fungi or bacterial may pose a significant health threat,” explains Dr. Pate.

In a U.S. cannabis dispensary, however, there is no such quality control. No federal and state regulatory protections are in place, and the cannabis distributed by dispensaries is not subject to reliable oversight. “The federal Environmental Protection Agency must develop Pesticide Tolerance Limits for medical cannabis and industrial hemp, as they've done for every other agricultural crop produced in the United States,” Backes points out. In a recent Steep Hill survey of 150 patients of California dispensaries, 103 very strongly agreed and 42 either agreed or strongly agreed that safety testing of medical cannabis for traces of mold, bacteria, and pesticides is a necessity.

Even the Drug Enforcement Administration (DEA) recognizes that the U.S. government has both domestic and international responsibilities to protect the health and safety of patients and to promote the responsible development of modern medications.⁴ U.S. patients who need medical cannabis deserve to know what they are getting so that they can choose the highest-quality medicine.

Dispensaries need to provide better care for their patients

Due to political opposition that has blocked Food and Drug Administration (FDA)-approved research for decades, cannabis has been distributed through completely unregulated channels and remains on the frontier of medical research. The illegal nature of the supply network doesn't encourage quality assurance. Dispensary personnel need training in proper sterile techniques to protect against on-site bacterial or other contamination of the herbal material.

The dispensaries also come under fire from groups such as Friends of the DEA, which recently made recommendations to the Obama Administration “to take a measured approach in addressing marijuana dispensaries.” The report criticized the administration's hands-off approach, stating that it “would effectively ban the DEA from any significant cannabis interdiction, leading to a free-for-all of cannabis dispensaries across the state and, potentially, across the nation... cannabis dispensaries would allow informal, quasi-medical networks to spring up across the nation, thereby putting at risk the critical protections so carefully crafted under the national food and drug legislation of the 20th and 21st centuries.” Their report cites dispensaries that freely offer medical information and advice to patients despite a lack of training and accreditation.⁵

² Scholten, W., “Therapeutic Cannabis in the Netherlands,” Drug Information Association Annual Meeting (June 17, 2004) (presentation); Hazekamp, A., “An Evaluation of the Quality of Medicinal Grade Cannabis in the Netherlands,” Cannabinoids

³ Health Canada, “Product Information Sheet on Dried Marijuana.” <http://www.hc-sc.gc.ca/dhp-mps/marihuana/supply-approvis/dried-information-sechee-eng.php>.

⁴ “Conclusion”, *Marijuana Dispensaries and the Federal Government: Recommendations to the Obama Administration*, Friends of the DEA, 2009

⁵ “Crude Herbal Cannabis and Unstandardized Cannabis Preparations Do Not Meet the Standards of Modern Medicine”, *Marijuana Dispensaries and the Federal Government: Recommendations to the Obama Administration*, Friends of the DEA, 2009

As thriving organizations in these communities, and as targets for the opposition, dispensaries need to improve the perception that they are not showing enough concern for their patients. And as health care providers, they need to improve procedures for buying and distributing medical cannabis, and provide more detailed information about the medicine.

Growers need to differentiate by quality and level of contaminants

Competitive forces are driving the cannabis-growing industry, and small growers of higher-quality cannabis for medicinal purposes need to differentiate their products by quality and purity. Today's medical growers differentiate their products with brand names identifying strains (such as "White Widow," "Northern Lights," "Purple Haze," etc.).

However, brand names don't provide reliable information⁶ about the product's contents, and don't take into consideration grower practices, the use of pesticides, or fungus contamination. The potency and overall quality of any cannabis strain can be affected by the environmental conditions under which it is grown. Patients are completely in the dark about potency levels and actual quality. "You smoke ten random samples of cannabis and you've most likely smoked *Aspergillus* [mold]," reports David Lampach, President and Co-Founder of Steep Hill Lab. "It's in there, often at unacceptable levels. Now it's up to the industry to respond."

The industry has yet to see legal cases involving contaminated cannabis, but they are likely to arrive as the use of medical cannabis grows. Moldy cannabis has been suspected in hastening the death of at least one person with a compromised immune system.⁷ All it might take is one story of an immune-compromised person dying from *Aspergillus* infection from smoking pot to give rise to patient lawsuits. Growers and dispensaries will find themselves at risk, just as pharmaceutical companies are now with their products.

Medicinal marijuana needs testing to be legitimate as medicine

Since the early 1960s, the U.S. government has blocked research on cannabis and the testing of cannabis products,⁸ even after scientists found that cannabis was relatively harmless and perhaps beneficial as medicine for specific illnesses. Now, paradoxically, government agencies such as the Food and Drug Administration (FDA) are insisting that cannabis can't be considered a legitimate medicine because it hasn't been properly researched and tested. In 2001, in rejecting a petition for the rescheduling of cannabis, the FDA stressed that it could not conclude that cannabis has an acceptable level of safety — "without assurance of a consistent and predictable potency and without proof that the substance is free of contamination."⁹

Many of the risks cited by the FDA can be directly reduced by independent testing. In cities and towns across California and other states, lawmakers are now proposing regulations that would require dispensaries to test medical cannabis for various sorts of contamination.¹⁰ In other states, such as Tennessee, proposed acts will establish state-managed programs that produce medical cannabis under secure, safe specifications that include growing only strains of known chemical composition to make sure that the medicine is safe, reliable, and targeted to provide maximum relief to patients suffering a discrete set of serious medical conditions.

⁶ "Marijuana Strains, Pictures and Descriptions" (<http://www.marijuanastrains.com>)

⁷ According to a 1988 study published by the American College of Chest Physicians. A bone marrow transplant patient died from Aspergillosis, a lung infection that can be caused by inhaling spores of *Aspergillus* fungus (<http://chestjournal.chestpubs.org/content/94/2/432.full.pdf>).

⁸ "DEA Blatantly Blocks Medical Marijuana Research" by Scott Morgan, January 12, 2009 (The Speakeasy Blog, StoptheDrugWar.org — http://stopthedrugwar.org/speakeasy/2009/jan/12/dea_blatantly_blocks_medical_mar)

⁹ "Crude Herbal Cannabis and Unstandardized Cannabis Preparations Do Not Meet the Standards of Modern Medicine", *Marijuana Dispensaries and the Federal Government: Recommendations to the Obama Administration*, Friends of the DEA, 2009

¹⁰ In Mountain View, CA, regulations have been proposed to require all medical marijuana sold in the city to be tested for various sorts of contamination (Mountain View Voice, June 24, 2010, http://www.mv-voice.com/news/show_story.php?id=3032).

The challenge for medical cannabis advocates and patients is to promote self-regulation and the testing of cannabis in order to assure that its quality and preparation meet the standards of modern medicine and therefore should be considered medicinal. Advocates, patients, dispensaries, and growers all benefit from testing that helps to legitimize medical cannabis.

Quality Assurance Testing for Safe Cannabis

Independent testing can reduce the risks of contamination, and thereby improve the overall quality of the cannabis distributed as medicine through the dispensaries. Using Gas and High-performance Liquid Chromatography and a Mass Spectrometer, as well as other high-tech lab equipment, tests can be conducted for pesticides and mold, as well as measure potency in samples of cannabis.

Steep Hill Lab is an independently owned and operated medical cannabis screening facility that has started the movement to mandate that medical cannabis adhere to the same standards as other food and drugs. Steep Hill runs both an analytical and a microbiological laboratory with their own sets of procedures and standards to operate effectively and deliver high-quality results. It offers comprehensive medical cannabis safety screening and an independent certification system including the “SafeCannabis” seal, labels, and stickers for participating dispensaries and growers. Participants have to consent to undergo occasional audits to ensure that the labels aren’t misused. The lab is not affiliated with any collective dispensary, collective cooperative grow, or any other organization involved in medical cannabis distribution to patients.

Steep Hill Lab analyzes and determines the percentage of active ingredients in each sample of cannabis to give patients the information they need to compare strains. The lab analyzes cannabis flowers and all of the various concentrates, topicals, tinctures, and edibles. Currently in the process of getting ISO 17025 certification, Steep Hill serves patients, dispensaries, cooperatives, collectives, concentrate producers, edible manufacturers, and growers.

Testing for pesticides

Pesticide residue in medical cannabis can include neurotoxins (the chemical warfare agent Saran is a member of this class of compounds), which are poisons at high dose and are linked to chronic brain disorders at low but repeated exposure. Exposure to pesticides has been linked to ADHD and Alzheimer’s, and can cause asthma and allergic reactions — and at high levels, neurotoxicity. Steep Hill Lab has detected the presence of pesticide residues in medical cannabis samples that are above the USDA safe level for most agricultural products. Currently there are no USDA guidelines for residual pesticides in medical cannabis.

The testing program includes the most commonly used pesticides in medical cannabis cultivation: Organophosphates, Carbamates, Pyrethroids, and Avermectins.

- *Organophosphates* and *carbamates* refer to a group of insecticides that are neurotoxins, which means they affect the brain and nervous system. Some are highly toxic and account for many cases of poisoning worldwide. Examples of organophosphates include parathion, malathion, methyl parathion, chlorpyrifos, diazinon, dichlorvos, phosmet, tetrachlorvinphos, and azinphos methyl.
- *Pyrethroids* are a group of man-made pesticides similar to the natural pesticide pyrethrum, which is produced from chrysanthemum flowers. Exposure to pyrethroids can be allergenic and can cause asthma in some patients. Examples of pyrethroids are permethrin, cypermethrin, resmethrin, cyfluthrin, and tetramethrin.
- *Avermectins* are microbial based pesticides that affect neural transmission. Exposure to high doses can depress the central nervous system resulting in incoordination and tremors. Direct contact with skin can cause irritation. The most common avermectin is abamectin (trade name Avid).

Microbiology testing

Microorganisms such as molds, bacteria, and yeast are everywhere — even in small amounts in food and drink and in the air we breathe. However, exposure to some microorganisms can be harmful in high concentrations and can be particularly dangerous to patients that have existing medical problems. Certain molds, for example, produce a compound that is highly allergenic and can cause cancer. *E. coli* bacteria can cause infection. The presence of certain molds can also degrade the quality and yield of the medicine.

Steep Hill Lab found that approximately five percent of medical cannabis samples contain unsafe levels of microorganisms, according to USDA guidelines for agricultural products. The microbiological screening program identifies the type and level of microorganisms present:

- *Aspergillus* is one of the more potentially deadly molds. Some species produce large amounts of aflatoxin, which is both a carcinogen and a toxin. Exposure can also cause allergic reactions and infections in immune deficient patients.
- *Penicillium* exposure can cause severe allergic reactions to patients that are sensitive to the antibiotic penicillin.
- *Cladosporium* is a group that contains the most common molds. It produces no mycotoxins, but over-exposure can cause asthma attacks and even pneumonia in some patients. *Cladosporium* is a plant pathogen and can degrade the quality and yield of cannabis.
- *Alternaria* is a plant pathogen and allergen in humans. Exposure to it can cause hay fever and may lead to asthma. It can also cause serious infections in immune compromised patients.
- *Yeasts* are another group of microorganisms that are often found in cannabis samples. Some are pathogenic or allergenic and should be avoided by patients that are immune compromised.
- *Escherichia Coli* is a gram negative bacteria that lives in the mammalian gastrointestinal tract. While most strains are harmless, several can cause severe food poisoning in humans.

Measuring potency

Knowing the cannabinoid profile and potency of medical cannabis is fundamental in allowing the patient to choose the correct medicine for their needs, as well as determining how much to take. Steep Hill Lab enables patients to assess the kind and the amount of the active ingredients, so that they are confident of administering an appropriate dose. This is especially important for edible forms of cannabis, where a greater percentage of active ingredients reaches the bloodstream. Taking the correct amount of medical cannabis can bring welcome relief to a patient's symptoms; however taking too much can have very negative side effects such as feelings of anxiety and paranoia.

Steep Hill Lab measures the major active ingredients present in medical cannabis:

- *Tetrahydrocannabinol* (THC): THC is the most abundant active component in most medical cannabis, typically ranging from 5-25 percent. Studies have found that THC provides a variety of medical benefits for numerous ailments. Cancer and AIDS patients have experienced decreasing nausea and an increasing appetite with the use of THC. Some glaucoma patients have been assisted as the compound reduces pressure within the eye, while multiple sclerosis patients use it to alleviate neuropathic pain and spasticity. THC is capable of alleviating even severe pain, and is also known to be neuroprotective, which rules out the possibility of brain damage. However, over-medicating with THC can cause negative side effects. Patients are at risk of becoming disorientated or even hallucinating. Additional possible but uncommon effects include anger, depression or anxiety. Patients can also experience short-term memory loss and reduced coordination lasting for up to four hours before the body begins to function normally again.
- *Cannabidiol* (CBD): CBD is a non-psychoactive important for pain relief and other health related effects, representing anywhere from 0.1-12 percent. CBD alone is not psychoactive and doesn't contribute to the potential negative side effects of medical cannabis. CBD has been shown to relieve convulsions, inflammation,

anxiety, and nausea, and to inhibit cancer cell growth. Recent studies have shown that CBD is an effective antipsychotic in treating schizophrenia. Smokers of cannabis are less likely to experience schizophrenia-like symptoms if there is a higher CBD to THC ratio. CBD can also decrease the social isolation induced by THC. Although CBD has its own particular medicinal value, it is the interaction between the two that gives rise to the effect that sometimes alleviates the symptoms of various medical conditions. With testing growers and dispensaries can find strains that offer a higher CBD to THC ratio. Steep Hill Lab has already identified twelve strains rich in cannabidiol (CBD).¹¹

- *Cannabinol* (CBN): CBN is a degradation product of THC. There is very little of it in a fresh marijuana plant. CBN content increases as THC degrades in storage and with exposure to light and air. It is only mildly psychoactive and can cause drowsiness, disorientation, and sleepiness in the smoker.

The SafeCannabis Seal and Standardized Packaging Program

The SafeCannabis seal and packaging program increases quality control for the industry by changing the model to give producers the opportunity to certify and package their products before they come to market.

Steep Hill Lab offers nitrogen packaging services for legal medical collective and cooperative growing operations (e.g., those permitted under the Mendocino County 9.31 exemption). The tamper-proof packaging keeps the cannabis as fresh as the day it was sealed, substantially reducing mold and bacterial growth, and significantly reducing degradation and discoloration. To ensure safety, each package includes oxygen and humidity indicators to show if the package has been tampered with.

Steep Hill makes arrangements with growers to put medical grade cannabis into one-pound bulk mylar packages injected with nitrogen. At the point of packaging Steep Hill collects 4-gram samples for analysis. Each package is labeled with identifying numbers that correspond specifically to samples analyzed for quality control. Any product that has unsafe detectable amounts of microbiological contaminants or pesticide residue is rejected. Results are provided within 10 business days.

The grower can use Steep Hill's Certificate of Analysis results to label their tamper-proof packages of medical grade cannabis. The grower can then distribute the product with the SafeCannabis seal to dispensaries along with the results log and the information for documenting and validating the analysis. The dispensaries can use the supplied information to contact and validate the authenticity of the SafeCannabis seal directly with Steep Hill Lab. With the identifying batch and lot numbers on each package, the dispensary can track the results and ensure that the products have been analyzed. As a result, the packaging meets the chain of custody requirements linking the contents to lab testing results, and patients are assured that the medicine they receive has been tested.

In addition, Steep Hill Lab supports the efforts of dispensaries and collectives offering SafeCannabis products by linking patients to providers on the Steep Hill web site. Collectives also benefit from Steep Hill advertising, education materials and posters.

Compliance inspection and consulting

Steep Hill Lab is a Certified Mendocino County Third Party Inspector for collective cooperative grows seeking to expand the scope of their operations as permissible under Mendocino County Code 9.31. Steep Hill consults in the proper preparation of the permit and helps to satisfy the requirements of the regulations with on site inspections, lab testing, nitrogen packaging, and chain of custody paperwork facilitation.

Steep Hill also conducts customized analyses depending on individual client needs. Our lab consults with a wide variety of clients in the cannabis industry that want to make their medicine safe and high-quality for their

¹¹ "Doctors to Study Effectiveness of CBD" by Fred Gardner, The Daily Dose (MedicalMarijuana411.com). Originally published in O'Shaughnessy's, "Project CBD" (http://www.pcmd4u.org/QShaughnessys/Project_CBD.html).

customers. Concentrate makers, processors, edible manufacturers, and collectives look to Steep Hill for safe cannabis and laboratory expertise.

Assuring Quality to Improve Legitimacy

Steep Hill Lab is one of many organizations that are dedicated to promoting the health and well-being of medical cannabis patients and providers. Steep Hill provides testing services that help growers and dispensaries self-regulate their processes to assure safe and clean medicines and advance the cause of cannabis therapeutics.

Patients can know the quality of their medicine

Steep Hill's quality-control testing and SafeCannabis Seal certification program help medical cannabis patients know the quality of the cannabis they are using as medicine. The Seal ensures that the medicine is pure, pesticide-free, and properly measured for potency. Patients do not have to guess at potency or rely on unsubstantiated quality claims or colorful brand names to know what they are getting as medicine.

Patients are also insisting on higher quality packaging for medical cannabis to protect it from oxidation and degradation. "I felt comfortable with the products," said one patient who obtained cannabis tested under Steep Hill's program. "The measurements helped me quickly pick my price range. The information makes it easy."

"Additional testing of cannabis strains to identify and assay their chemical constituents will provide more predictable medicinal effects that will benefit both patients and providers," explains Backes. In addition, patients can use the information about levels of THC, CBD, and CBN to choose strains that are less psychoactive and more "mellow." "In certain instances CBD has a beneficial medical effect but is non-psychoactive, and often people prefer that," says Lampach. "A forty-year-old businessman doesn't want to become incapacitated just because he needs the pain relief."

Dispensaries can improve care and remain compliant

Dispensaries are criticized by opponents of medical cannabis largely because patients can purchase cannabis from them in a retailer-consumer relationship, and personnel freely offer medical information and advice to patients despite a lack of training and accreditation. However, dispensaries *can* provide high-quality information about medical cannabis by using educational materials and test results.

I can't think of anything more important to advance the cause than to provide a model of safe, affordable cannabis distribution that would be respectful not only of the patients but also of the neighbors and the community as a whole.

— Stephen DeAngelo, Harborside Health Center, Oakland, CA

With quality-control testing and the SafeCannabis Seal, dispensaries can improve care for their patients and move quickly toward compliance with regulations that require testing for contaminants. Dispensary personnel can assure that the medical cannabis they sell is pure and pesticide-free, and offer products in a pricing tier based on quality and potency.

"I can't think of anything more important to advance the cause than to provide a model of safe, affordable cannabis distribution that would be respectful not only of the patients but also of the neighbors and the community as a whole," says Stephen DeAngelo, Executive Director of the Harborside Health Center in Oakland, CA. "If we are going to call it medicine, we need to know what is in it, and we need to know

that it is not harmful. For more than two years, Steep Hill Lab has ensured the safety and quality of the medicine provided to Harborside patients. Steep Hill provides the most reliable results, at the lowest price, of any lab doing cannabinoid analysis."

Growers can demonstrate quality and improve operations

Marijuana growers, maligned by opponents of medical cannabis as either criminals or backwoods hippies, can dispel these notions by maintaining a higher profile as a business that implements the best practices in marijuana cultivation. They can use quality-control testing and the SafeCannabis Seal to guarantee the quality of their product and obtain the best price, as well as improve the yield of their crops through more rigorous examination and testing. The testing services help them produce products that are pure, pesticide-free, properly measured for potency, and compliant with proposed regulations. The definitive seal-of-approval also helps them scale up to provide products to more dispensaries.

In a recent survey of 150 patients of California dispensaries, 119 agreed (and among them, 59 very strongly agreed) that medical cannabis that has passed safety screening is more valuable than cannabis that has not been screened, and 99 would pay more for cannabis screened for pesticide residue. “The SafeCannabis Seal and Steep Hill program can help growers avoid legal risks, and package their valuable and perishable product in a way that differentiates it from the competition, just like any legitimate business,” says Addison DeMoura, a co-founder of Steep Hill, a former director of the Medical Cannabis Association and a former collective dispensary operator and grower under the auspices of the California Proposition 215 since 1998.

The industry benefits from standards and guidelines

The cannabis sector is a frontier economy, growing faster relative to the rest of the U.S. Even without statistics defining market fundamentals, many politicians acknowledge the opportunity for governments to cash in on cannabis taxation (an opinion regularly touted by California state senators who have endorsed and campaigned for California’s Proposition 19 to tax and legalize recreational cannabis).

However, innovation in the cannabis sector has barely begun. Increased mainstream acceptance is already changing the interaction of cannabis industry businesses to the broader business world (see Appendix). Businesses that would support the structural needs of the industry, such as financial services, supply management, packaging, and software, are begging for laws to regulate and define the legal scope of cannabis industry business practices. Some are afraid to invest in an industry that is too legally risky, or prone to sweeping changes. Accountants are not certain how to structure cannabis businesses, lawyers are in disagreement over what is and is not legal, and sector participants are largely inexperienced business people.

Rather than suffering an additional quality crisis that would fuel the opposition, the medical cannabis industry can thrive in an atmosphere of self-regulation and control, and make sure that the medicines are safe and distributed under medical auspices. Quality-control testing is the best-conceived method to date for making medical cannabis available to seriously ill patients in a safe, secure, controlled, cost-effective and patient-centered fashion.

“No commercial research is allowed on cannabis; the government won’t allow that door to open,” explains Stephen DeAngelo of Harborside. “We have to find a way for cannabis to be considered a safe and effective medicine. We’ve got the patients, and now we’ve got the scientific expertise. This is too important. My belief is that cannabis is not only going to be an extremely important medicine, but also a source of other extremely important medicines. I think that this is going to change the way that dispensaries sell medicine to people, and it’s going to change the way that patients evaluate and make their purchases. It’s also going to change the way that scientists look at this substance.”

Patients, caregivers, cannabis medicine producers, collective staff, and doctors have a responsibility to understand the importance of growing, processing, handling, and consuming cannabis medicines safely. Through education, awareness, and testing, the industry can develop standards and guidelines by which safe and clean medicines are readily available for patient consumption.

About Steep Hill Lab

Steep Hill Lab, founded in 2008, is an independently owned and operated medical cannabis screening facility. Steep Hill Lab's mission is to assure the quality of medical cannabis through scientific analysis while actively legitimizing the cannabis industry by implementing independent standards for quality control. We are California's premier cannabis testing facility.

The lab certifies medical cannabis with our SafeCannabis seal. Its purpose is to prevent patients from becoming ill by consuming cannabis contaminated with pesticides, molds and bacteria and to provide patients with potency data so they can individualize their dosing. We use validated laboratory methodology to serve collective dispensaries and growers throughout the entire state of California, and patients with valid California State Medical marijuana recommendations. Quality control is strictly maintained in the lab, which adheres to guidelines used by clinical and reference laboratories throughout the United States.

In addition to laboratory analysis, we offer consulting to the cannabis industry regarding packaging and distribution standards and product development. Steep Hill Lab is not affiliated with any collective dispensary or growing operation, or any other organization involved in medical cannabis distribution to patients. For more information, visit Steep Hill Lab at www.steephilllab.com.

Appendix: Medical Cannabis Industry Map

The cannabis industry is rapidly growing with an expanding infrastructure. This chart illustrates the flow of revenue and product through the cannabis industry. Growers and dispensaries are by far the largest sectors in terms of revenues, but edibles, financial services, and lab testing are growing rapidly. Increased mainstream acceptance is already changing the interaction of cannabis industry businesses to the broader business world.

