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MEDICAL ASSOCIATION OF THE BAHAMAS
POSITION PAPER ON MEDICAL CANNABIS

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Key Terms

- **Cannabinoid:** a chemical compound that acts on the endocannabinoid system.
- **THC:** Δ^9 -tetrahydrocannabinol, the main cannabinoid in marijuana, known mostly for its intoxicating effects.
- **CBD:** cannabidiol, a cannabinoid found in the cannabis plant, considered to have multiple therapeutic applications. Non-intoxicating. Non-addictive.
- **Phytocannabinoids:** naturally occurring cannabinoids found in the cannabis plant. Usually refers to CBD and THC.
- **Endocannabinoids:** naturally occurring cannabinoids found in the human body.
- **Pharmaceutical Cannabinoids:** pharmaceutical grade synthetic cannabinoid products.
- **Synthetic cannabinoids:** synthetically produced cannabinoids.
- **CBD based products:** products containing CBD that are widely sold as herbal remedies but are not regulated as medicinal products.
- **Whole plant cannabis:** buds, leaves and occasionally stems of the cannabis plant that are widely used for their intoxicating effects. Often referred to as marijuana. May have therapeutic applications as well.
- **Receptor:** a molecule found in humans and animals that when activated, initiates some physiological response.
- **Placebo:** an inactive substance or treatment that is designed to have no therapeutic value.

Foreword

Over the past decade, societies at national and global levels, have been pursuing legislation and policies to govern the use of marijuana. The pros and cons of the legislative and regulatory debates are high on the political agenda. The timelines are stamped with urgency; these are high stake issues. There are two powerful underlying forces driving the process. On one front, there is both the lure of profits in the marketplace and the potential for increasing government revenues. Forbes, the foremost US financial magazine, reported in "The U.S. Cannabis Report 2019 Industry Outlook", that the total legitimate sales of cannabis in states where cannabis is legal is projected to increase at a compound annual growth rate of 14% over the next six years, reaching nearly \$30 billion by 2025. Market research suggests that worldwide legal marijuana revenue will increase to \$103.9 billion by 2024. This would represent an 853% increase in sales from 2018.

On the other front, pharmaceutical derivatives of the cannabis plant have the promise of major breakthroughs in the medical field. Epidiolex, used for treating severe epileptic syndromes, has been nothing short of a miracle, and was approved in June 2018 by the world's toughest regulator, the Food and Drug Administration. The potential use of the pharmaceutical derivatives of the cannabis plant to treat many common diseases is growing by leaps and bounds for both prescription drugs and over the counter applications. The demand for the use of cannabis derived products is huge.

The momentum for advancing a favorable legislative and regulatory agenda is being hindered primarily by the potential adverse health effects on individuals and the potential burden on public health. It is a case study on the social determinants of disease. A quote from an editorial in The Journal of the American Medical Association is most fitting, "policy has outpaced science".

It is within this framework that the Medical Association of the Bahamas (MAB) addresses this complex societal issue. We are the professional physician body with the fiduciary responsibility for the delivery of safe, quality-driven healthcare. This paper sets out to review the medical issues and implications of legalizing the cannabis plant for pharmaceutical use. We outline the content of this review:

- Global status: Legalizing marijuana for medicinal purposes
- Historical perspective: Stigmatization of marijuana
- The chemistry of the cannabis plant
- Current status of medical cannabis in The Bahamas
- The MAB's Position Statements

We have travelled this road before. The current issues on the legalization of marijuana mirror those

that challenged the world with the legalization and commercialization of alcohol. This therapeutic and recreational drug went through periods of prohibition too; but despite the most stringent legislation and policies for alcohol use, the burden of injuries, accidents, premature deaths, and lost productivity for all generations including the unborn, is incalculable.

The MAB is cautious in its proposal for the medical use of marijuana. The prevailing question from a medical perspective is: Can regulatory approaches to the use of cannabis reduce health and social harms more effectively than prohibition? The economic stakes and potential profits are high, but we must tread carefully and deliberately. The health of our population is at risk in every dimension of marijuana's legality.

The Legalization of Marijuana Use in the
Bahamas is a Major Health Issue

Professor Robin Roberts

Introduction

At the time of the first version of this paper, there were some 30 countries that allowed the use of marijuana for medicinal purposes. Recreational consumption is still prohibited in many jurisdictions, but others have adopted policies that decriminalize cultivation and possession of marijuana for personal use.

The global destigmatization of marijuana and the economic potential of the cannabis industry has led several Caribbean countries to reconsider their legislative position. In 2018, the CARICOM Regional Commission on Marijuana strongly supported the decriminalization of marijuana by its member states as well as its legalization for medical use [1]. Jamaica has long been associated with marijuana, Rastafarianism and Reggae, and was the first to decriminalize small amounts (up to 2oz) in 2015. Belize amended its legislation in 2017 to allow up to 10g for personal use. St Kitts and Nevis, Antigua and Barbuda, St Vincent and the Grenadines, and Trinidad and Tobago have all embarked on legislative reform that will take a similar approach.

In 2019, Prime Minister Dr. Hubert Minnis, appointed The Bahamas National Commission on Marijuana to examine the issues surrounding its use and to draft a report that is expected to heavily influence local marijuana legislation. Cannabis bills that will introduce regulatory framework for the cannabis industry and decriminalize possession of small amounts are expected to be formalized before the end of 2022.

The Medical Association of the Bahamas (MAB) has previously taken the debate of medical marijuana under review to ensure that the risks, benefits, and alternatives are thoughtfully examined before making recommendations. We believe this discussion should be supported by quality, scientific evidence and not assumptions based on personal, social or religious beliefs. This paper also considers the trends in the region with the understanding of The Bahamas' unique cultural and socioeconomic reality. It does not specifically address the debate on the decriminalization or legalization of recreational cannabis although inferences can be made, based on the available evidence and deductive reasoning.

To fully appreciate the implications of decriminalizing possession of small amounts versus legalizing for medical purposes, one should understand the subtle differences between marijuana and cannabis. Cannabis is the scientific name given to a group of plants that include *Cannabis sativa*, *Cannabis indica*, and *Cannabis ruderalis*. The term "marijuana" is regularly used to describe the buds and leaves of the cannabis plant, usually *Cannabis sativa*, that has become infamous because of the euphoric and sometimes addictive compound known as THC. Marijuana is usually rolled into a cigarette or pipe and inhaled (smoked or vaped) or incorporated into edibles that are ingested for recreational and religious purposes.

The cannabis plant is also the source of CBD and hemp, neither of which is considered to have harmful properties. CBD, when extracted from the cannabis plant, has been incorporated into a variety of nutritional supplements and medicinal products with clinically proven benefits. Hemp (or industrial hemp) can be refined to manufacture a range of industrial products such as rope, textiles, plastics, and paint. Hemp oil is used as a moisturizing agent in skin, hair and cosmetic

products. Hemp, hemp oil and CBD products are currently legal in the United States and most of Europe and are widely available in an unregulated market. These benign derivatives of the cannabis plant are prohibited from importation and sale in the Bahamas without special permission from the Minister responsible for dangerous drugs.

The potential medical and economic benefits of the cannabis industry have been overshadowed by decades of illicit marijuana abuse and criminality associated with the drug trade. For the Bahamas, the relationship is even more personal. Still a sore spot for those old enough to recall the Commission of Inquiry report in 1984, and the three-part investigative report “The Bahamas a nation for sale” that portrayed the country as a gateway for marijuana and cocaine from South America to the shores of the United States.

Conversations about cannabis decriminalization in the Bahamas, even for therapeutic purposes, are contentious and at times combative. Progress has been slow or nonexistent. Locally, any attempt to expand access is likely to meet aggressive resistance, particularly from the religious community. Globally, the scientific studies that are desperately needed to validate cannabis as a legitimate medicine have been limited because of restricted access to the drug in the United States, since the passage of the Controlled Substances Act in 1970.

Despite these limitations, this paper will review this history and background of medical cannabis and examine the evidence, where available, that supports its use in illness and disease. The MAB also offers position statements that can be used as a resource for physicians and policy makers who will draft the regulatory framework for the cannabis industry in the Bahamas. And finally, this paper will propose a strategy for implementing medical cannabis that will seek to introduce pharmaceutical preparations that have been approved in other jurisdictions but defer the use of whole plant cannabis until more conclusive information becomes available.

History of Medical Cannabis

Cannabis has been recorded to be of medicinal value for thousands of years. Numerous accounts of its use in ancient Chinese medicine have been cited in mainstream and scientific literature. Reports of marijuana tea being used for such ailments as malaria and gout date back to 2737B.C.[2]. The Ebers Papyrus, one of the oldest preserved medical texts, dating back to 1,550 B.C., mentions the use of the cannabis plant for inflammation when applied topically [3].

In the mid-1800s, Dr. William B. O’Shaughnessy reported the benefits of the cannabis plant in Cholera, rheumatism, and convulsions. O’Shaughnessy’s successful use of medical cannabis was pivotal and led to its widespread adoption in Europe and North America [4]. In the early 1900s Sir William Osler, the father of modern medicine, and a number of other well-known physicians, advocated for the use of cannabis in the treatment of migraines [5]. As an unrestricted drug, cannabis was readily available in pharmacies and doctor’s offices in liquid form for a variety of ailments.

The popularity of marijuana as a legitimate therapeutic drug declined in the 1920s when the Federal Bureau of Narcotics began to publicize the social ills associated with the growing industry.

With the influx of Mexican immigrants who were utilized as farm laborers came a new practice of smoking marijuana for recreation, a habit that was relatively unheard of at the time. Reports soon surfaced that alleged marijuana use in these immigrant communities along the Mexican border incited violent crimes, sexual inhibition, and insanity. Isolated reports amplified by xenophobic undertones began to transform the perception of marijuana as medicine to that of a dangerous drug. Harry Anslinger, the first Commissioner of the United States Federal Bureau of Narcotics, further vilified cannabis when he was quoted as saying “this marijuana causes white women to seek sexual relations with Negroes, entertainers and any others” [6]. Anti-drug campaigners implored the government to bring the sale and distribution of marijuana under the same regulatory constraints as there was for opiates and other controlled substances. The Marijuana Tax Act of 1937 marked the beginning of marijuana prohibition in the United States, and in 1942, amid political pressures advocating for the ban of all cannabis products, all preparations were removed from the United States Pharmacopoeia and National Formulary [7,8].

It took more than twenty years for medical marijuana to find its way back into the spotlight. This was facilitated by a massive increase in recreational use during the 60s and 70s. In 1964 the chemical structure of THC, was identified and eventually led to a synthetic oral formulation being approved by the Food and Drug Administration for use in patients suffering from chemotherapy induced nausea and vomiting (CINV) [9]. In 2000, Canada became one of the first countries to legalize cannabis for medical purposes. Numerous countries have since followed suit. The “medical marijuana” revolution received mainstream attention in 2013 after it was featured in Dr. Sanjay Gupta’s CNN special report “Weed”, which reported on children with severe seizure disorders who anecdotally benefitted from CBD [10]. The award-winning Chief Medical Correspondent for CNN admitted that he had misjudged the medical benefits of the cannabis plant, and personally wrote Attorney General Jeff Sessions asking him to reconsider US marijuana laws to allow much needed research to occur.

A considerable amount of cannabis related research and been published in the medical literature since it was rediscovered. A recent Pub Med (medical database) search using the terms “marijuana or cannabis” yielded just over 21,000 citations (peer reviewed articles). Only 4% were randomized clinical trials, which are recognized as the foundation for “evidence-based” clinical guidelines and treatment strategies. This underscores the difficulty Authority’s face when attempting to make credible recommendations based on quality scientific data.

Nonetheless, the Medical Association of The Bahamas submits this paper based on the available evidence, which may at times be underwhelming, but compelling enough to formulate an educated, informed position. The Association encourages local, regional, and international research in medical cannabis to improve our understanding of its use in health and disease.

Scientific Background

Cannabis is the scientific name given to a genus (group) of plants that are thought to have originated in Asia. Traditionally, three species of the cannabis plant have been recognized; Cannabis sativa, Cannabis indica and Cannabis ruderalis. There are many biologically active compounds in the cannabis plant, collectively called cannabinoids, that are responsible for its

physiologic effects. Two of the most extensively studied cannabinoids are THC and CBD, also called *phytocannabinoids*. THC, the psychoactive cannabinoid found predominantly in the flowering tops of the cannabis plant, is responsible for the “high” produced during inhalation or ingestion. The physiologic effects of the plant are produced when cannabinoids act on microscopic structures called receptors that are found throughout the human body. The two main cannabinoid receptors that have been identified are referred to as CB1 and CB2. CB1 receptors are distributed widely throughout the brain, central nervous system, and gastrointestinal tract. The activation of CB1 receptors produces euphoria, drowsiness, hallucinations, and memory impairment but may also modify pain perception, increase appetite and reduce nausea. The CB2 receptor, which is devoid of psychotropic effects and found predominantly in tissues of the immune system, has been shown to have anti-inflammatory properties [11]. Other studies suggest that CB2 receptors play a role in antinociception (analgesia) which is of particular interest in neuropathic (nerve) and cancer related pain.

The modern-day movement for cannabis as medicine began with the discovery of endogenous (within the body) compounds that also interact with the CB1 and CB2 receptors. These naturally occurring chemicals, now called *endocannabinoids*, their receptors, and the mechanisms by which these endocannabinoids are produced, is called the endocannabinoid system (ECS). The two main endocannabinoids; N-arachidonylethanolamide (anandamide) and 2-arachidonylglycerol (2AG) have been found to play a role in maintaining and regulating human health and have become a therapeutic target for a variety of diseases.

Ongoing research on the cannabis plant has identified many other compounds (non-cannabinoids) thought to enhance the effects of CBD and THC. Two of these compounds, Terpenes and Flavonoids, have gained considerable attention, and are individually thought to have some therapeutic potential on their own. Terpenes are substances that give the cannabis plant its aroma and fragrance but additionally may enhance the physiological effects of cannabinoids; known as “the entourage effect”. Terpenoids may also mitigate many of the toxic side effects associated with THC [12].

Flavonoids are chemicals found in cannabis and other plants that have a variety of functions including contributing to its color and flavor. Flavonoids have anti-inflammatory properties and may be useful in the treatment of cardiovascular disease and cancer [13].

Current Status of Medical Cannabis in The Bahamas

The Dangerous Drugs Act of The Bahamas (DDA 2000) defines Indian hemp as “any plant of the genus *cannabis* whether growing or not from which the resin has not been extracted”. The definition also includes “the resin extracted from any part of such plant; and every compound, manufacture, salt derivative, mixture or preparation of such plant or resin”. The Act further prohibits “any person from cultivating, trading in, importing or bringing into The Bahamas any of these drugs (Indian hemp, cannabis) except by a qualified person with special authority of the Minister, for medical or scientific purposes” [14].

Despite what appears to be a “total ban” on all merchandise that contain extracts derived from the cannabis plant, many hemp containing cosmetics and hair products can be found on the shelves of local pharmacies and convenience stores. Successive governments have been unable to effectively restrict the importation of these hemp products because of their availability in an unregulated US market. Recent enforcement of the Dangerous Drugs Act to confiscate CBD products but allow importation and sale of hemp is contradictory and confusing and should be clarified in future policy statements.

Understanding Medical Cannabis

Medical cannabis is a broad term used to describe any part of the cannabis plant that is used to treat symptoms of a medical condition or a disease. Products may come in the form of pills, edibles, liquids, powders, sprays, ointments (balms) and leaves. Medical cannabis may contain primarily CBD, THC or a combination of both. There are currently several pharmaceutical grade cannabis-based medications that have been approved by the United States Food and Drug Administration (FDA) and other international regulatory agencies for the treatment of specific medical illnesses. These preparations are available by prescription and are packaged with dosing guidelines and side effect profiles (Table1). They are widely available in the United States, Canada Europe and Latin America.

CBD products may be further classified as:

Full Spectrum: contain CBD and other chemical components of the cannabis plant such as terpenes and flavonoids and trace amounts of THC.

Broad Spectrum: full Spectrum minus trace amounts of THC, and

Isolate: pure CBD.

CBD-based products distributed in the United States must contain less than 0.3% THC by dry weight, (0.2% in the European Union) if intended for medical use. Unfortunately, consistent regulation of CBD products is lacking in most countries. CBD extracts are commonly added to foods, food supplements, beverages, and cosmetics. The rapidly growing market of CBD additives has outpaced governance and as such many of the health claims marketed by manufacturers are often scientifically unsubstantiated. The FDA is aware that many companies are marketing these products in ways that violate the Federal Food Drug and Cosmetic Act and may put consumers at risk. The accuracy of CBD product labeling has also been brought into question after a report was published in the Journal of the American Medical Association (2017) that showed only 31% of CBD products purchased online had accurately labeled CBD concentrations [15]. The findings suggest a need for more oversight to ensure consistent manufacturing and testing standards for medicinal cannabis products.

Cannabidiol (CBD)

Prescribing Guidelines

There are many unknowns as it relates to prescribing medical cannabis. These include route of administration, appropriate dose, THC and CBD ratios, and length of therapy. Prescribing guidelines compiled by a Canadian multidisciplinary committee in 2018 concluded that “only 3 illnesses have an adequate volume of evidence to support prescribing recommendations: chronic pain, nausea and vomiting, and spasticity”[16]. The guidelines propose that clinicians “consider” medicinal cannabinoids for refractory neuropathic pain, pain associated with terminal cancer, chemotherapy induced nausea and vomiting (CINV) and spasticity associated with Multiple Sclerosis or Spinal Cord Injury (SCI) when conventional therapy has failed. The committee recommended against smoked cannabis, oils or edibles citing insufficient evidence, in favor of pharmaceutically prepared products such as Nabilone, Nabiximols and Dronabinol.

The committee also highlighted the challenge of prescribing smoked (inhaled) cannabis for medical use. They concluded that studies supporting inhaled cannabis must be scrutinized for significant bias that exaggerate benefits and underreport harms. Developing standardized cannabis strains. An attempt to formulate prescribing guidelines is further challenged since “mode of delivery (vape vs cigarette) and volume per use (depth of inhalation) can substantially change total intake”.

Prescribing guidelines for non-pharmaceutical cannabis-based products (CBD and THC) have recently been published for the management of epilepsy[17]. The task force recommends oral formulations of CBD (oils and gel capsules) starting at a dose of 5mg/kg/daily divided into two doses then increased to 10mg/kg/day after two weeks. Then increasing by 5mg/kg/per day if necessary up to a maximum of 20-25 mg/kg/per day if tolerated.(Table 4).

For preparations containing THC, a more conservative dosing schedule may be utilized. In these patients THC can be initiated at 1mg per day increasing by 1mg every 7 days to a maximum dose of 40mg THC. Non pharmaceutical cannabis-based products being prescribed for medical use should be accompanied by a certificate of analysis that lists the concentration of CBD and THC and a dosing schedule so that the prescriber is aware of the consistency and safety of the drug.

Table 4. Guide to CBD dosing.

1	Start low (5 mg/kg/day), increase to 10 mg/kg/day after two weeks
2	Review clinical response and adverse effects at 10 mg/kg/day
3	Remain on this dose if effective, otherwise increase dose in steps of 5 mg/kg/day if CBD is well tolerated
4	Stop at 20-25 mg/kg/day, and withdraw CBD if ineffective

Position Summary

The following statements summarize the available scientific evidence published in peer reviewed journals regarding medical cannabis. The MAB recognizes that there is limited high quality evidence supporting the benefits of medical cannabis at this time. Many of the studies are small, inadequately powered, and conflicting. The MAB supports local, regional, and global research to further define dosing guidelines, safe modes of administration and side effect profiles. The MAB does not endorse smoked or inhaled cannabis for medical or recreational use.

Position Statements

1. The MAB recommends the interpretation of "Indian Hemp" in Part 1 (2) of the Dangerous Drugs Act (Chapter 228) be amended to exclude extracts or preparations containing less than 0.3% THC concentration. Notably such an amendment would have implications for not only amending other parts of the Dangerous Drugs Act (DDA) Chapter 228, but the list of preparations in the Psychotropic Schedule 1 of the Dangerous Drugs Act (Application) Order 1994. Further, the schedules for "medicinal drugs" and "patent or propriety preparations" in the Pharmacy Act Chapter 227 would have to be expanded to include CBD products with less than 0.3% THC, which would be available without a prescription.

Rationale: The term *hemp* (Indian hemp, Industrial hemp) is used to describe strains of the cannabis plant with THC concentrations less than 0.3% by dry weight. Hemp is legal in the majority of the United States and most of Europe, and as noted above, is used to manufacture many non-medical products such as paper, clothing, and food. Amending the DDA to exclude *Indian hemp or any derivatives, extracts, salts with a THC concentration of less than 0.3% dry weight*, would allow the importation of cannabis-based derivatives with negligible THC concentrations. If needed, provisions should be made for pharmaceutical cannabinoids (e.g., Nabilone, Dronabinol) whose THC concentrations exceed 0.3%.

2. Claims about the health benefits of cannabis are numerous but strong scientific support is lacking in many areas. The MAB believes that there is sufficient evidence to endorse the use of pharmaceutical cannabinoids in the following areas:

Chemotherapy Induced Nausea and Vomiting (CINV)

Nausea and vomiting associated with chemotherapy in patients being treated for cancer, significantly impacts quality of life, and often limits the effectiveness of therapy. Invariably, the medical literature recommends traditional, first-line anti-emetics (anti-nausea drugs) for CINV. There is a small percentage of patients who continue to have symptoms despite maximum doses of conventional therapy. Reports of cannabis users experiencing less side effects than non-cannabis

users when undergoing chemotherapy regimens generated interest in the potential benefits of cannabis for CINV. There are no large well conducted clinical trials of cannabis use for this indication but a review of 23 small randomized controlled trials evaluating the use of cannabis-based medicines in the treatment of CINV concluded that patients experienced less nausea and vomiting when using cannabis-based therapy compared to placebo [18]. Although there is little to support cannabis as first-line treatment for CINV, synthetic pharmaceutical grade THC (Nabilone, Dronabinol) has been approved by the Food and Drug Administration of the United States and is widely used as salvage therapy for patients who have failed first-line therapy

Chronic Pain

Recommendations for the use of cannabis as a less harmful alternative for the management of chronic pain (CP) has been fueled by the opioid crisis in the United States that claimed nearly 500,000 lives between 1999 and 2019 [19]. Unlike opioids, there are no reported deaths from cannabis overdose as it does not suppress respiratory function, even at high doses.

Unfortunately, scientific studies evaluating cannabis for CP are often of low quality due to short duration, variations in dosing schedules, modes of administration, and non-blinding (inability to conceal the identity of the drug when comparing it to another substance). Differences in the efficacy depending on the type of pain being treated (neuropathic vs musculoskeletal vs cancer related) also prevents broad assumptions regarding the value of cannabis-based medicines in all types of CP [20,21]. Several clinical trials have shown a modest improvement in neuropathic pain and cancer related pain when cannabis was compared to placebo [22,23,24]. Cannabis could be cautiously considered as third-line therapy in chronic musculoskeletal pain that is refractory to conventional treatments. Canadian and European guidelines have also supported its use when other therapies have failed [25,26].

Multiple Sclerosis

The largest randomized control trial of cannabis in patients with Multiple Sclerosis (MS) found no significant difference in physician administered tests of spasticity (muscle stiffness and tightness) when cannabis was compared to placebo, but noted an improvement in patient-reported symptoms when the same comparison was made [27]. Two smaller studies looking at the effect of Nabiximols, a pharmaceutical grade oromucosal (mouth) spray, on spasticity in MS, also showed a statistically significant improvement in self-reported spasticity when compared to placebo [28,29]. For this reason, the American Academy of Neurology has concluded that some cannabis-based therapies are probably effective at reducing patient reported spasticity associated with MS and MS related pain and hence, may be useful adjunct to standard therapy.

HIV/AIDS

HIV/AIDS affects more than 5,000 people in The Bahamas and millions globally. Symptoms associated with chronic HIV infection include reduced appetite, weight loss, nausea and vomiting.

Cannabis has been proposed as an appetite stimulant for many years and has been studied in patients living with HIV/AIDS who have anorexia (poor appetite) and wasting (weight loss). One study of 143 HIV positive patients who were regular cannabis users, showed that more than 50% of the participants reported improvement in nausea, weight loss, fatigue and other symptoms [30]. Inhalation (smoking) was the preferred route of administration in 71% of users. Similar studies in this population have shown an improvement in weight with Dronabinol (an oral pharmaceutical formulation of THC) when compared to placebo [31,32]. Currently, there is no evidence to suggest that cannabis consumption adversely affects clinical indicators such as viral load and CD4 counts, but it should not replace the more effective therapies such as combination antiretrovirals and megestrol acetate (Megace®) for the treatment of symptoms [33]. Dronabinol has been approved by the FDA for the treatment of HIV wasting and could be considered as adjunctive therapy on an individual basis.

Seizures

Lennox Gastaut and Dravet Syndromes are rare but severe neurological diseases that are characterized by refractory seizures in early childhood and neurodevelopmental delays. Patients typically may have dozens or hundreds of seizures per day that are generally resistant to treatment. The evidence to support the use of cannabis in refractory seizures began in 2013 with a child named Charlotte who was experiencing up to 50 seizures daily as a result of Dravet syndrome [34]. After 3 months of treatment with a high CBD strain cannabis, her seizures were reported to have decreased by more than 90%. Since then, a number of studies have investigated the effects of cannabidiol in refractory pediatric seizure disorders. A comprehensive review of several clinical trials using CBD rich extracts and purified CBD reported up to a 50% reduction in seizures in about 39% of patients [35]. In 2018, the FDA approved Epidiolex, a purified CBD extract, for the treatment of Dravet syndrome further cementing cannabis as a legitimate pharmaceutical.

3. The MAB believes that more research is needed to determine the role of cannabis in the following areas:

Gastrointestinal Disease

Cannabinoid receptors have been found in the gastrointestinal tract of both animals and humans. Animal studies show that stimulation of endogenous CB1 receptors slows down the digestive process and relieves diarrhea. Despite numerous claims of the anti-inflammatory properties of the cannabis plant, at least one well designed scientific study in patients with Crohn's Disease failed to show any significant improvement in inflammatory markers or endoscopic scores when patients were treated with cannabis oil (containing CBD and THC) when compared to placebo. An improvement in gastrointestinal symptoms and quality of life was reported [36]. Similarly, another study was unable to confirm any significant benefits when persons with Ulcerative Colitis were treated with CBD versus placebo [37]. Overall, there have been limited investigations evaluating the effects of cannabis on Inflammatory Bowel Disease (IBD), but at this time cannabis should not replace approved medical therapies.

Small clinical trials suggest cannabis may also have a role in the treatment of Irritable Bowel Syndrome but results are not consistent, and its use cannot be advocated at this time [38,39].

Cannabis may also have harmful effects on the liver (liver fibrosis and hepatic encephalopathy) and can diminish the effectiveness of medications used to treat Hepatitis C [40,41].

Recently, multiple case reports of cannabis induced pancreatitis (inflammation of the pancreas) have been published that suggest long-term cannabis use is a risk factor. Close monitoring of population health will determine if widespread availability increases the number of cases being reported [42].

Cancer

Scientific experiments on isolated cancer cells show that cannabis may inhibit tumor growth. Researchers have demonstrated that cannabidiol (CBD) can prolong the survival of mice with some types of brain tumors [43]. Similar studies in animals with prostate and colon cancer conclude that CBD may have “an encouraging effect on reducing colon cancer growth and decreasing tumor size” [44]. Case reports and small clinical studies in humans also show a reduction in tumor size and prolonged survival in patients treated with CBD [45,46]. Despite these findings, there is still insufficient evidence to prove that whole plant cannabis or CBD can safely and effectively treat all types of cancers in humans. Ongoing research is necessary to determine the role of cannabis as an anticancer drug.

Glaucoma

Cannabis is often cited as a therapeutic option for the treatment of glaucoma. While cannabis has been shown to lower the pressure in the eye, the effects are short lived and limited by numerous side effects. There may be a role for cannabis in patients with open angle glaucoma who have failed all currently available therapies and who are unable to have surgery [47,48].

1. Although there is insufficient scientific evidence to support the claims of many cannabidiol (CBD) based products, such as CBD and hemp oils, the MAB does not object to their use as these products appear to have limited toxicity and minimal potential for abuse.

Rationale: CBD based products and Hemp oils are readily available in the United States and Canada. They are marketed as anti-inflammatories, anxiolytics, antidepressants, and sleep aids, among other uses. Of noted importance is the potential use in the treatment of chronic pain, particularly considering the worldwide opioid abuse crisis. CBD products come in the form of sprays, oils, balms and chewables. Side effects such as somnolence (sleepiness) and decreased appetite have been reported in some studies but were no more severe than side effects noted with conventional therapy [49,50]. The THC concentration in most CBD preparations is negligible and is relatively non-existent in hemp oils. Unfortunately, the CBD industry is unregulated and lacks quality assurance. Rigorous safety

studies on these supplements are lacking and in the United States they are not subject to monitoring by the FDA. A recent study of CBD products found that labeling was often inaccurate, and in many instances CBD content was over labeled and THC content was under labeled. CBD products with understated THC concentrations may produce intoxication or impairment when used in high doses [51]. Despite these findings, CBD products are generally safe and should not require a special license for importation. As with all medications, caution should be used when administering to children.

2. The MAB cannot support the use of “whole plant” cannabis for teas, edibles or any smoked form for medicinal purposes at this time, as there is insufficient evidence to determine appropriate dosing for symptom control, while minimizing side effects.

Rationale: The MAB acknowledges the potential benefit of “whole plant” Cannabis as a therapeutic option for selected medical illnesses. A carte blanche (unrestricted) endorsement, however, would be irresponsible without a proper regulatory framework that enforces standards, for local cultivation and quality control. The concentration of THC in cannabis plants has been increasing over the past few decades and may range from 3% to as high as 20% [52]. Eating or smoking THC rich hash oil extracted from the marijuana plant may deliver even higher amounts of THC to the user, leading to considerable side effects. Dabbing, a new trend in cannabis consumption, involves heating a small amount of cannabis extract with THC concentrations that may approach 90% and inhaling the vapors [53]. Dabbing can be associated with anxiety, rapid heart rate, psychosis, memory loss and hallucinations [54].

Inhaled (smoked) cannabis in low quantities for medicinal use may not be harmful, but until further research defines accurate dosing for all methods of consumption including edibles, oils and teas, physicians should refrain from making professional recommendations except for compassionate use.

Of course, legislation that legalizes cannabis cultivation and possession for personal use would effectively eliminate the need for policies that regulate medical applications. If this occurs, the MAB advises physicians to take a cautious approach when recommending cannabis until prevailing pharmaceutical standards of safety and efficacy are applied.

3. The MAB advises the public that frequent, habitual, long-term whole cannabis use could be harmful, particularly when associated with high concentrations of THC. Habitual use and any practice to increase THC content for consumption should therefore be discouraged. Potential side effects of habitual cannabis use include but are not limited to the following:

Neurological

The New England Journal of Medicine lists several possible neurological side effects of short-term marijuana use. These include impaired short-term memory and motor coordination, altered judgment, paranoia, and psychosis [55]

Long-term effects such as cognitive impairment, altered brain development and addiction are most impactful when onset of use is during adolescence [56]. Studies have shown that adults who smoked cannabis often during adolescence often have neurological structural impairments in areas of the brain involved in memory and learning [57]. This results in a demonstrable decline in IQ regardless of years of education that may persist even after cessation of use [58].

Mental Health

There is a growing body of evidence to support the correlation of cannabis and psychosis in predisposed individuals. Cannabis Induced Psychotic Disorder (CIPD) refers to the presence of hallucinations and delusions that occur during or just after cannabis intoxication. The incidence has been reported to be 2.7 per 100,000 [59]. The symptoms of CIPD may persist for days or even weeks after cannabis exposure which distinguish it from Cannabis Intoxication (CI) where symptoms are acute but transient, typically resolving in 24 hours. Clinical studies have identified several risk factors for psychotic disorders in cannabis users which include high potency cannabis, increased frequency of use, younger age at onset of use and a family history of schizophrenia [60]. Schizophrenia is a chronic, debilitating mental disorder characterized by persistent, recurring psychotic episodes for which there is no cure. A retrospective study spanning 20 years reported 41% of patients with CIPD eventually converted to schizophrenia, and 47% converted to schizophrenia or bipolar disorder [61]. This conversion rate for substance induced psychosis to schizophrenia was higher in cannabis than any other drug examined including amphetamines, cocaine, and hallucinogens [62]. Local statistics reported by the Public Hospitals Authority show that admissions to Sandilands Rehabilitation Centre for marijuana related illness has more than doubled between 2014 and 2018 [63].

Physicians are advised to warn their patients about the short and long-term effects of habitual cannabis use and the potential for cannabis withdrawal syndrome, which is characterized by nausea, sweating, headaches, irritability, and depressed mood. A referral for appropriate treatment is recommended when symptoms are present.

Respiratory

The respiratory effects of cannabis have long been debated considering that the primary method of consumption is by inhalation. Unfortunately, isolating the hazardous effects of cannabis on lung function has been challenging because many users also consume tobacco in the form of cigarettes or in the leaves used to roll a “joint”. Only a few studies have evaluated lung function over time in cannabis users alone versus tobacco users alone and non-smokers. One such study concluded that there was no decline in Forced Expiratory Volume (FEV1), an important indicator of obstructive

lung disease, in habitual cannabis smokers when compared to tobacco smokers and nonsmokers [64]. An earlier study reported only mild reductions in FEV1 in cannabis only, tobacco only and combined smokers when compared to nonsmokers. Respiratory symptoms such as wheezing, cough, chest tightness and sputum production were more common in all smokers when compared to nonsmokers [65].

Even less evidence is available to confirm a relationship between cannabis smoking and lung cancer. Several well-designed epidemiological studies have been unable to establish a causal relationship between moderate cannabis inhalation and cancers of the lung and upper airway including oral (mouth) cancer [66,67,68]. It has been suggested that the antitumor effects of THC demonstrated in animal models may mitigate any carcinogenic (cancer causing) effects of cannabis smoke.

Physicians should caution frequent users of inhaled cannabis of the potential for chronic bronchitis and lower respiratory infections such as pneumonia. Co-use with tobacco has been found to increase smoking related lung disease [69].

The American College of Chest Physicians, The Canadian Lung Association and The European Respiratory Society have not yet endorsed the inhalation of cannabis for any medical illness and do recommend further research to identify the long-term effects of cannabis smoking on respiratory health.

Gastrointestinal Symptoms

Cannabis Hyperemesis Syndrome (CHS) is possibly the most common gastrointestinal symptom associated with habitual cannabis use. CHS is defined by cyclical bouts of severe nausea, vomiting and abdominal pain associated with frequent cannabis use for at least a year [70]. Vomiting is often described as incapacitating and overwhelming and may occur without warning. Patients may take prolonged hot showers or baths to control symptoms. Vomiting episodes are interspersed with symptom free periods and resolve following sustained cessation of cannabis. Laboratory investigations and imaging studies are typically unremarkable.

The paradoxical effect of Cannabis on nausea and vomiting in humans has been exploited for its therapeutic potential. In low doses, cannabis inhibits nausea and vomiting and as mentioned earlier, has shown benefit in chemotherapy induced nausea and vomiting. High potency THC and preparations with high THC: CBD ratios are thought to over stimulate cannabinoid receptors and may precipitate CHS.

Dependence/Addiction

Habitual cannabis users may require more cannabis to produce the same effect (also known as tolerance). About 8% of people who use cannabis may develop physical dependence during their lifetime. It should be noted that this is considerably lower than with tobacco (24%), alcohol (13%), or cocaine (16%) [71].

A cannabis withdrawal syndrome has been defined and categorized in the American Psychiatric Association’s Diagnostic and Statistical Manual of Mental Disorders (DSM-V). It occurs in up to 40% of long-term cannabis smokers and is characterized by symptoms of irritability, anxiety, insomnia, restlessness, and depression [72].

4. **The MAB supports unrestricted physician access to pharmaceutical grade cannabinoids that have undergone clinical trials to determine safety, efficacy, dosing, and side effects. Physicians should be allowed to prescribe these medications at their discretion.** These products include (but are not limited to) the following:

Table:1

Generic Name	Trade Name	Route of Administration	Active Ingredient	Indication
Nabiximols	Sativex ®	Oromucosal Spray	CBD:THC(1:1)	Multiple Sclerosis
Cannabidiol	Epidiolex	Oral liquid	CBD	LGS / DS*
Nabilone	Cesamet®	Capsule	Synthetic THC	CINV
Dronabinol	Marinol®	Tablet	Synthetic THC	CINV HIV Wasting Syndrome

5. **The MAB does not recommend additional regulation for pharmaceutical cannabinoids as the side effect profile does not appear to be any more dangerous than narcotics or other controlled drugs that are currently available.**

Rationale: Although side effects produced by pharmaceutical cannabinoids have been reported in high doses, serious adverse events are rare. Clinical trials using purified CBD products have frequently (86%) reported mild to moderate adverse effects including drowsiness, decreased appetite, fever and diarrhea. Serious side effects were much less common (19%) and included drowsiness, fever, rash, convulsions, and elevated liver function tests [73]. Close monitoring of liver function tests is advised with some preparations, but regulation should not exceed what is currently applied to other pharmaceuticals [74]. Physicians should also be aware of the potential drug interactions, particularly in elderly patients and those with chronic diseases of the liver and kidney. THC, for example, is degraded by an enzyme in the liver (Cytochrome P450) that also metabolizes medications such as Coumadin (a blood thinner) and several antidepressants. High levels of THC may reduce the degradation of these drugs and lead to toxic levels in the blood [75,76].

6. **The MAB recommends that every precaution be taken to prevent cannabis exposure**

to children and adolescents. School-based substance abuse prevention programs should be strongly considered. Failure to do so can lead to catastrophic mental and emotional health, and irreversible cognitive performance.

Rationale: There are legitimate concerns that decriminalization of cannabis for personal use will increase accessibility to adolescents. Uruguay, the first country to fully legalize recreational use of cannabis, initially reported an increase in adolescent consumption after the production, sales and consumption of cannabis was legalized in 2013. More recent studies have shown no sustained increase in adolescent use since sales began [77]. It should be noted that the cannabis industry in Uruguay is heavily regulated by the government funded Institute for Regulation and Control of Cannabis (IRCCA). Its “seed to sale” policies control every aspect of the industry. Other reviews evaluating the impact of cannabis legalization on adolescent and young adult use have found no or only modest increases in consumption in this age group [78,79]. Legislative reforms that allow access to medical cannabis will likely increase unintentional marijuana exposures in pediatric patients as well [80,81].

The developing brain is particularly vulnerable to injury when exposed to psychoactive substances such as THC in the perinatal and adolescent periods. The adverse effects of cannabis can be severe in heavy early adolescent users and include educational failure, persistent mental health issues and progression to other substance use [82]. Numerous studies have shown that youth exposure to cannabis negatively impacts high school completion rates and employment status [83,84]. Evidence also suggests that early onset chronic cannabis use may precipitate schizophrenia and psychosis in predisposed individuals [85,86].

The government must be proactive in preventing cannabis (and alcohol) use in adolescents and teenagers. School based programs have been found to be effective and should focus particularly on at risk populations [87].

Concerns

Cannabis Contamination

There is a growing concern of cannabis contamination due to poor growing, harvesting and storage practices. The cannabis plant is highly susceptible to an array of insects, molds, and bacteria that are harmful if consumed by humans. In 1981 an outbreak of Salmonella enteritis (intestinal infection) was traced back to contaminated cannabis in 4 states confirming the potential of the plant as a carrier of infection [88]. Invasive Aspergillosis, a potentially fatal lung infection caused by the fungi *Aspergillus*, has been linked to contaminated inhaled cannabis in immune compromised patients [89]. Numerous recalls of cannabis products as a result of microbial infestations have led to growers using a variety of pesticides that are not intended for crops that will be used as food or for medicinal purposes. Other harmful elements and heavy metals have also been identified on cannabis plants. Clinicians must also be aware of the possibility of cannabis contamination and should caution their patients, particularly those at risk.

The potential for cannabis contamination could pose a significant threat to the most lucrative sector of the cannabis industry. Packaging for export must prevent the growth of mold and mildew that render it unsuitable for human consumption.

Cannabis and Driving

The data on cannabis and its impact on motor vehicle accidents is particularly concerning. Cannabis impairs many of the skills required for safe driving such as judgment, processing speed and cognitive function, but this impairment may be less for chronic users than for occasional users [90,91].

Despite these findings, overwhelming evidence confirms that driving under the influence of cannabis (DUIC) negatively impacts road traffic safety. A study conducted by the Insurance Institute for Highway Safety (IIHS) and Highway Loss Data Institute (HLDI) of the United States reported an increase of 6% in motor vehicle accidents in 4 states that have legalized recreational cannabis compared to 4 neighboring states that have not [92].

Additional reports from Canada, France and Australia also confirm an increased risk of traffic accidents when DUIC [93,94,95]. The risk is even higher when cannabis is co-consumed with alcohol [96,97,98].

In The Bahamas, motor vehicle accidents (MVA) have been steadily increasing over the past three years. The Royal Bahamas Police Force reported a 28% increase between 2015 and 2017 [99]. The MAB cautions the government to anticipate the potential impact that DUIC alone and in combination with alcohol, may have on road safety. Legislative reforms that decriminalize cannabis for personal use should be accompanied by those that seek to educate, prevent and penalize users who DUIC.

Cannabis Edibles

Food products containing cannabis extract (edibles) have become popular in countries where recreational and medicinal cannabis is legal. While edibles are generally considered to be safe, the delayed high (30-90 minutes) associated with oral cannabis ingestion may lead the user to unintentionally ingest more THC than intended. THC content in edibles may vary substantially and produce transient, psychotic symptoms such as hallucinations, delusions and anxiety, when consumed in high doses [100]. Edibles may also be packaged in forms that are appealing to children such as gummies, lollipops, and cookies. Unintentional pediatric exposures to cannabis have increased significantly as a result of cannabis legalization. Healthcare professionals should expect an increase in the number of accidental overdoses which may lead to respiratory depression, hypotension and bradycardia, particularly in children, and familiarize themselves with management guidelines.

Synthetic Cannabis

Synthetic Cannabis has become a public health crisis in many areas due to its severe life-threatening side effects. Synthetic cannabis products are unregulated and marketed under names such as Spice, K2, Kush, Black Mamba and Joker and sold as natural herbal incense mixtures in smoke shops, novelty stores and on the internet. The chemical structure of these products bears little resemblance to the psychoactive THC, making it difficult to detect in blood and urine. Synthetic cannabis can be 2-100 times more potent than THC and can cause heart attacks, seizures, hallucinations, and violent behavior. The Centers for Disease Control and Prevention (CDC) reports that one state has investigated over 700 synthetic cannabis related illnesses including 11 deaths. The Medical Association of The Bahamas urges the government to have a zero tolerance approach to synthetic cannabis products given their severe toxicity and potential for abuse.

Vaping

The popularity of electronic nicotine delivery systems of e-cigarettes has increased significantly since its introduction to the US market in 2006, particularly in young adults. E-cigarettes are battery operated devices that convert liquid compounds to vapors when heated. The term “vaping” refers to the use of e-cigarettes to inhale vaporized substances such as nicotine or cannabis. Although previously promoted as a safer alternative to traditional cigarette smoking, e-cigarettes were linked to an outbreak of acute lung injuries reported in various hospitals in the United States in 2019 [101]. Over 1600 cases of vaping associated lung injury (VALI), characterized by shortness of breath, cough chest pain, gastrointestinal symptoms and even death has been reported in the medical literature. The majority of cases were associated with cannabis containing compounds. In August 2019 the Centers for Disease Control (CDC) circulated a health alert to the public and the health community warning of the potential association between vaping and severe lung disease.

Surprisingly, VALI appears to be a phenomenon confined to North America with few, if any, cases having been reported outside of the United States. Laboratory investigations have identified Vitamin E Acetate (VEA), an additive in some cannabis containing e-cigarettes, as the causative agent for VALI. The CDC has since discouraged the use of VEA in any vaping product and warns the public against purchasing products from informal sources [102]. While the number of VALI cases does appear to be declining, the long-term health effects of e-cigarettes and vaping remain unknown. Medical practitioners should maintain a high index of suspicion when evaluating patients with a history of e-cigarette use who present with new, acute respiratory and gastrointestinal symptoms.

Lower Risk Cannabis Use Guidelines

Available evidence suggests that the vast majority of persons who use cannabis will not experience severe cannabis related illnesses, but recreational cannabis use is not always harmless. Particularly in chronic, frequent, high potency cannabis users and those who initiate cannabis at a younger age.

There is convincing evidence linking cannabis use to cognitive impairment, memory loss and mental health diseases such as psychosis, schizophrenia, and depression. Local statistics from the Sandilands Rehabilitation Centre show that the number of cannabis associated psychiatric admissions have increased. Cannabis related motor vehicle injuries not only confers risk to the user but to the general public as well.

In 2011, Canada developed Lower Risk Cannabis User Guidelines (LRUG) to reduce the adverse public health impacts among cannabis users [103]. Since initially being released, the LRUG have been endorsed by international agencies as a tool to identify and modify behaviors most associated adverse health outcomes. In anticipation of the legalization of cannabis use in Canada, an updated Lower-Risk Cannabis Use Guidelines (LRCUG) was published in the American Journal of Public Health in 2017.

A decision to pursue permissive cannabis policy reforms in the Bahamas, should be accompanied by a public health campaign to educate users about these potential health risks of cannabis use. These recommendations have been reprinted below:

Recommendation 1: The most effective way to avoid any risks of cannabis use is to abstain from use. Those who decide to use need to recognize that they incur risks of a variety of acute and long-term adverse health and social outcomes. These risks will vary in their likelihood and severity with user characteristics, use patterns, and product qualities, and so may not be the same from user to user or use episode to another.

Recommendation 2: Early initiation of cannabis use (i.e., most clearly that which begins before age 16 years) is associated with multiple subsequent adverse health and social effects in young adult life. These effects are particularly pronounced in early-onset users who also engage in intensive and frequent use. This may be in part because frequent cannabis use affects the developing brain. Prevention messages should emphasize that, the later cannabis use is initiated, the lower the risks will be for adverse effects on the user's general health and welfare throughout later life.

Recommendation 3: High THC-content products are generally associated with higher risks of various (acute and chronic) mental and behavioral problem outcomes. Users should know the nature and composition of the cannabis products that they use, and ideally use cannabis products with low THC content. Given the evidence of CBD's attenuating effects on some THC-related outcomes, it is advisable to use cannabis containing high CBD:THC ratios.

Recommendation 4: Recent reviews on synthetic cannabinoids indicate markedly more acute and severe adverse health effects from the use of these products (including instances of death). The use of these products should be avoided.

Recommendation 5: Regular inhalation of combusted cannabis adversely affects respiratory health outcomes. While alternative delivery methods come with their own risks, it is generally preferable to avoid routes of administration that involve smoking combusted cannabis material (e.g., by using vaporizers or edibles). Use of edibles eliminates respiratory risks, but the delayed onset of psychoactive effect may result in the use of larger than intended doses and subsequently increased (mainly acute, e.g., from impairment) adverse effects.

Recommendation 6: Users should avoid practices such as “deep inhalation,” breath-holding, or the Valsalva maneuver to increase psychoactive ingredient absorption when smoking cannabis, as these practices disproportionately increase the intake of toxic material into the pulmonary system.

Recommendation 7: Frequent or intensive (e.g., daily or near daily) cannabis use is strongly associated with higher risks of experiencing adverse health and social outcomes related to cannabis use. Users should be aware and vigilant to keep their own cannabis use – and that of friends, peers, or fellow users – occasional (e.g., use only on 1 day/week, weekend use only, etc.) at most.

Recommendation 8: Driving while impaired from cannabis is associated with an increased risk of involvement in motor-vehicle accidents. It is recommended that users categorically refrain from driving (or operating other machinery or mobility devices) for at least 6 hours after using cannabis. This wait time may need to be longer, depending on the user and the properties of the specific cannabis product used. Besides these behavioral recommendations, users are bound by locally applicable legal limits concerning cannabis impairment and driving. The use of both cannabis and alcohol results in increased impairment and risks for driving, and categorically should be avoided.

Recommendation 9: There are some populations at probable higher risk for cannabis-related adverse effects who should refrain from using cannabis. These include individuals with predisposition for, or a first-degree family history of, psychosis and substance use disorders, as well as pregnant women (primarily to avoid adverse effects on the fetus or newborn). These recommendations, in part, are based on precautionary principles.

Recommendation 10: While data are sparse, it is likely that the combination of some of the risk behaviors listed above will magnify the risk of adverse outcomes from cannabis use. For example, early-onset use involving frequent use of high-potency cannabis is likely to disproportionately increase the risks of experiencing acute or chronic problems. The combination of these high-risk patterns of use should be avoided by the user and a focus for prevention.

Medical Cannabis Implementation Strategy: A Phased Approach

The foundation of a medical cannabis industry should utilize an approach that is least likely to result in abuse and misuse of cannabis therapies while maximizing medical benefits. Particular attention should be paid to preventing use by adolescents and children.

The first phase could involve an amendment of the Dangerous Drugs Act to exclude hemp products (<0.3% THC) which would allow the immediate importation of non-toxic herbal supplements with no known potential for abuse. Hemp products such as cosmetics and hair supplies are already widely available in the country without special importation licenses. Medical hemp products, which are predominantly CBD based therapies, should be accompanied by a certificate of analysis outlining cannabinoid percentages and safe manufacturing processes.

The second phase would require a more detailed revision of the Dangerous Drugs Act to include pharmaceutical grade cannabinoids such as Dronabinol, Nabilone, and Nabiximols that contain THC above the limit for Phase 1 drugs. Approved medications must meet current pharmacy regulations for importation and dispensing and should only be prescribed by a physician licensed and registered with the Bahamas Medical Council. Physicians seeking to prescribe cannabinoids should be encouraged to familiarize themselves with prescribing guidelines, potential side effects and drug interactions.

Consideration for whole plant cannabis for medical use would be the last and final stage and should be based on available scientific evidence supporting its use. This will require a more robust national discourse that must ultimately consider the decriminalization of cannabis for recreational use, cultivation, supply chain, testing and quality control.

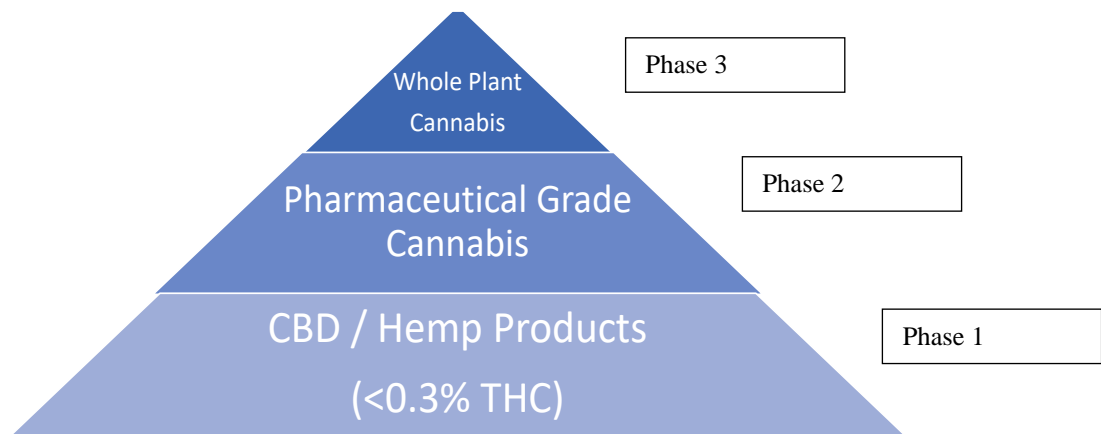


Figure 1. Medical Cannabis Implementation Strategy

Conclusion

The time has come for us to re-evaluate our position on cannabis given the scientific evidence that supports its therapeutic value in several disease states and shows its potential in others. We can no longer allow the history of marijuana to eclipse the benefits of cannabis in the future. The Bahamas should seek to contribute to the body of research that will determine how cannabis is used by the medical community.

There is sufficient evidence to suggest that the harmful effects of cannabis are considerably less than those of alcohol, but there is one exception. The impairments to mental well-being may be substantial and often permanent, particularly when cannabis consumption begins in adolescence. In addition, the negative impact on social determinants of health (education, employment, income potential) in this most vulnerable population, could neutralize the perceived economic benefits the government seeks to gain.

Whether support for decriminalization and legalization is fueled primarily by economic opportunity, criminal justice reform, or scientific evidence is debatable. A decision to allow

cultivation of the cannabis plant for medicinal use must be preceded by a realistic regulatory framework that will demand quality controls and ensure reproducible levels and maximum concentration limits of the main cannabinoid THC. Most important should be the protection of public health and safety. The economic potential of the cannabis industry should be a secondary consideration and should not jeopardize the physical, mental, and social welfare of the country. It is important to mention that the promotion of cannabis as medicine may change the perception of some, particularly the youth, who currently see it as an illegal, addictive drug. The incorporation of cannabis into more acceptable edible forms such as brownies, gummies, and hard candies, could attract new users who find smoking offensive. The looming threat of synthetic cannabis must be acknowledged and anticipated. Any subsequent increase in cannabis use by adolescents and young adults as a result of new legislation can have deleterious social effects and compound the challenges we already face in education and unemployment. A survey conducted on prison inmates at the Bahamas Department of Correctional Services reported that 60% of inmates admitted to smoking marijuana on a daily basis in the 6 months prior to their arrest. The study also found that 57%, 54% and 52% of inmates admitted to using marijuana within 6 hours of being in possession of an illegal firearm, committing attempted murder and committing aggravated assault, respectively [104].

The path to regulating a cannabis industry for medicinal and non-medicinal purposes should not take a “one size fits all” approach. A “cut and paste” methodology will not adequately consider the unique social situation that the Bahamas finds itself in. The Medical Association of The Bahamas urges the government to lead the Caribbean community in implementing legislation that promotes public education, health and safety above economic interests. Policies should be dynamic with the ability to respond to our environment and the scientific data as it evolves. A cautious, stepwise approach that seeks to maximize benefit while reducing harm, particularly in those who are most vulnerable, seems prudent.

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