

LEGISLATIVE COMMITTEE MINUTES

SB420

Bill as Introduced

SB 420 - AS INTRODUCED

2020 SESSION

20-2753
01/04

SENATE BILL **420**

AN ACT permitting qualifying patients and designated caregivers to cultivate cannabis for therapeutic use.

SPONSORS: Sen. Reagan, Dist 17; Sen. Hennessey, Dist 5; Sen. Kahn, Dist 10; Rep. Cushing, Rock. 21

COMMITTEE: Health and Human Services

ANALYSIS

This bill permits qualifying patients and designated caregivers to cultivate cannabis for therapeutic use.

Explanation: Matter added to current law appears in ***bold italics***.
Matter removed from current law appears [~~in brackets and struck through~~].
Matter which is either (a) all new or (b) repealed and reenacted appears in regular type.

STATE OF NEW HAMPSHIRE

In the Year of Our Lord Two Thousand Twenty

AN ACT permitting qualifying patients and designated caregivers to cultivate cannabis for therapeutic use.

Be it Enacted by the Senate and House of Representatives in General Court convened:

1 1 Use of Therapeutic Cannabis for Therapeutic Purposes; Definitions. Amend RSA 126-X:1, IV
2 to read as follows:

3 IV. "Cultivation location" means a locked and enclosed site, ***under the control of the***
4 ***qualifying patient or designated caregiver, or*** under the control of an alternative treatment
5 center where cannabis is cultivated, secured with one or more locks or other security devices in
6 accordance with the provisions of this chapter. ***A cultivation location under the control of a***
7 ***qualifying patient or designated caregiver shall be at that person's residence.***

8 2 Use of Therapeutic Cannabis; Definitions. Amend RSA 126-X:1, VI to read as follows:

9 VI. "Designated caregiver" means an individual who:

10 (a) Is at least 21 years of age;

11 (b)(1) Has agreed to assist with one or more (not to exceed 5) qualifying ~~[patient's]~~
12 ***patients in the*** therapeutic use of cannabis, except if the qualifying patient and designated
13 caregiver each live greater than 50 miles from the nearest alternative treatment center, ~~[in which~~
14 ~~ease]~~ the designated caregiver may assist with the therapeutic use of cannabis for up to 9 qualifying
15 patients; ***or***

16 (2) ***Has agreed to cultivate cannabis for therapeutic use pursuant to this***
17 ***chapter for no more than one qualifying patient;***

18 (c) Has never been convicted of a felony or any felony drug-related offense; and

19 (d) Possesses a valid registry identification card issued pursuant to RSA 126-X:4.

20 3 New Paragraphs; Use of Cannabis for Therapeutic Purposes; Definitions. Amend RSA 126-X:1
21 by inserting after paragraph VI-a the following new paragraphs:

22 VI-b. "Immature cannabis plant" means a cannabis plant that has not flowered and which
23 does not have buds that may be observed by visual examination and which is at least 6 inches tall.

24 VI-c. "Mature cannabis plant" means a female cannabis plant that has flowered and that
25 has buds that may be observed by visual examination.

26 4 Use of Cannabis for Therapeutic Purposes; Definitions. Amend RSA 126-X:1, XII to read as
27 follows:

28 XII. "Seedling" means a cannabis plant that ~~[has no flowers and is less than 12 inches in~~
29 ~~height and less than 12 inches in diameter]~~ ***is less than 6 inches tall.***

30 5 Use of Therapeutic Cannabis; Definitions. Amend RSA 126-X:1, XIII(c) to read as follows:

1 (c) Cultivation by a designated caregiver or qualifying patient, *except as provided*
2 *under RSA 126-X:2, II-a or II-b.*

3 6 Use of Therapeutic Cannabis Purposes; Protections. Amend RSA 126-X:2, I-III to read as
4 follows:

5 I. A qualifying patient shall not be subject to arrest by state or local law enforcement,
6 prosecution or penalty under state or municipal law, or denied any right or privilege for the
7 therapeutic use of cannabis in accordance with this chapter, if the qualifying patient possesses an
8 amount of cannabis that does not exceed the following, *if the qualifying patient is not at the*
9 *cultivation location he or she reported to the department, or transporting cannabis as*
10 *allowed under paragraph II-a:*

11 (a) Two ounces of usable cannabis; and

12 (b) Any amount of unusable cannabis.

13 II. A designated caregiver shall not be subject to arrest by state or local law enforcement,
14 prosecution or penalty under state or municipal law, or denied any right or privilege for the
15 therapeutic use of cannabis in accordance with this chapter on behalf of a qualifying patient if the
16 designated caregiver possesses an amount of cannabis that does not exceed the following, *if the*
17 *designated caregiver is not at the cultivation location he or she reported to the department,*
18 *or transporting cannabis as allowed under paragraph II-b:*

19 (a) Two ounces of usable cannabis, or the total amount allowable for the number of
20 qualifying patients for which he or she is a designated caregiver; and

21 (b) Any amount of unusable cannabis.

22 *II-a. Except as provided in RSA 126-X:3, VII(b), a qualifying patient shall not be*
23 *subject to arrest by state or local law enforcement, prosecution or penalty under state or*
24 *municipal law, or be denied any right or privilege for the therapeutic use of cannabis in*
25 *accordance with this chapter, if the qualifying patient possesses or cultivates an amount of*
26 *cannabis that does not exceed the following:*

27 (a) *If the qualifying patient does not have a designated caregiver who is*
28 *authorized to cultivate cannabis for him or her, for the possession or cultivation, or both,*
29 *of cannabis that occurs at the cultivation location under the control of the patient reported*
30 *to the department, or while transporting cannabis and cannabis plants and seedlings to a*
31 *new cultivation location that has been reported to the department within the prior 21 days:*

32 (1) *Eight ounces of usable cannabis;*

33 (2) *Any amount of unusable cannabis; and*

34 (3) *Three mature cannabis plants, 3 immature cannabis plants and 12*
35 *seedlings, where the plants are not subject to public view, including view from another*
36 *private property, without the use of optical aids, with a total canopy of no more than 50*
37 *square feet.*

1 **(b) If more than one qualifying patient, designated caregiver, or both, share a**
2 **cultivation location, the total canopy of all cannabis plants shall not exceed 100 square**
3 **feet.**

4 **II-b. Except as provided in RSA 126-X:3, VII(b), a designated caregiver shall not be**
5 **subject to arrest by state or local law enforcement, prosecution or penalty under state or**
6 **municipal law, or denied any right or privilege for the therapeutic use of cannabis in**
7 **accordance with this chapter on behalf of a qualifying patient, an amount of cannabis**
8 **that does not exceed the following:**

9 **(a) If, at the cultivation location under control of the caregiver and that has**
10 **been reported to the department, or while transporting cannabis and cannabis plants and**
11 **seedlings to a new cultivation location that has been reported to the department within the**
12 **prior 21 days:**

13 **(1) Eight ounces of usable cannabis;**

14 **(2) Any amount of unusable cannabis; and**

15 **(3) Three mature cannabis plants, 3 immature cannabis plants and 12**
16 **seedlings, where the plants are not subject to public view, including to view from another**
17 **private property, without the use of optical aids, with a total canopy of no more than 50**
18 **square feet.**

19 **(b) If more than one qualifying patient, designated caregiver, or both, share a**
20 **cultivation location, the total canopy of all cannabis plants shall not exceed 100 square**
21 **feet.**

22 **III. A designated caregiver may receive compensation for costs, not to exceed \$500 per**
23 **calendar year, not including labor, associated with assisting a qualifying patient who has**
24 **designated the registered designated caregiver to assist him or her with the therapeutic use of**
25 **cannabis. Such compensation shall not constitute the sale of ~~controlled substances~~ a controlled**
26 **drug pursuant to RSA 318-B.**

27 **7 Use of Therapeutic Cannabis; Protections. Amend RSA 126-X:2, XV to read as follows:**

28 **XV. A laboratory, and the employees thereof, which conducts testing of cannabis ~~required~~**
29 **~~under rules for~~ delivered to it by alternative treatment centers, ~~adopted under this chapter, and~~**
30 **~~the employees thereof~~ qualifying patients, or designated caregivers, shall not be subject to**
31 **arrest by state or local law enforcement, prosecution or penalty under state or municipal law, or**
32 **search, for acting pursuant to this chapter and department rules to possess cannabis on the premises**
33 **of the laboratory for the purposes of testing, and, in the case of a laboratory employee, denied any**
34 **right or privilege for working for such a laboratory.**

35 **8 Use of Therapeutic Cannabis; Prohibitions and Limits. Amend RSA 126-X:3, I to read as**
36 **follows:**

1 I. A qualifying patient may use *and a qualifying patient or designated caregiver may*
2 *cultivate* cannabis on privately-owned real property only with written permission of the property
3 owner or, in the case of leased property, with the permission of the tenant in possession of the
4 property, except that a tenant shall not allow a qualifying patient to smoke cannabis on rented
5 property if smoking on the property violates the lease or the lessor's rental policies that apply to all
6 tenants at the property. *A tenant or guest of a tenant shall not cultivate cannabis on rented*
7 *property if the lessor has prohibited therapeutic cannabis cultivation.* However, a tenant
8 may permit a qualifying patient to use cannabis on leased property by ingestion or inhalation
9 through vaporization even if smoking is prohibited by the lease or rental policies. For purposes of
10 this chapter, vaporization shall mean the inhalation of cannabis without the combustion of the
11 cannabis.

12 9 New Subparagraph; Use of Therapeutic Cannabis; Registry Identification Cards. Amend RSA
13 126-X:4, I by inserting after subparagraph (h) the following new subparagraph:

14 (i) The qualifying patient's cultivation location, if any.

15 10 New Subparagraph; Use of Therapeutic Cannabis; Registry Identification Cards. Amend
16 RSA 126-X:4, II by inserting after subparagraph (g) the following new subparagraph:

17 (h) The designated caregiver's cultivation location, where he or she may cultivate
18 cannabis on behalf of a single qualifying patient who has not reported a cultivation location.

19 11 Use of Therapeutic Cannabis; Registry Identification Cards. Amend RSA 126-X:4, IX(a) to
20 read as follows:

21 (a) A qualifying patient shall notify the department before changing his or her
22 designated caregiver, *cultivation location*, or alternative treatment center. *A designated*
23 *caregiver shall notify the department before changing his or her cultivation location.*

24 12 Use of Therapeutic Cannabis; Registry Identification Cards. Amend RSA 126-X:4, XI(a)
25 through XI(b)(1)-(3) to read as follows:

26 XI.(a) The department shall create and maintain a confidential registry of each individual
27 who has applied for and received a registry identification card as a qualifying patient or a designated
28 caregiver in accordance with the provisions of this chapter. Each entry in the registry shall contain
29 the qualifying patient's or designated caregiver's name, mailing address, date of birth, date of
30 registry identification card issuance, date of registry identification card expiration, random 10-digit
31 identification number, *cultivation location, if any*, and registry identification number of the
32 qualifying patient's designated alternative treatment center, if any. The confidential registry and
33 the information contained in it shall be exempt from disclosure under RSA 91-A.

34 (b)(1) Except as specifically provided in this chapter, no person shall have access to any
35 information about qualifying patients or designated caregivers in the department's confidential
36 registry, or any information otherwise maintained by the department about providers and
37 alternative treatment centers, except for authorized employees of the department in the course of

1 their official duties and local and state law enforcement personnel who have detained or arrested an
2 individual who claims to be engaged in the therapeutic use of cannabis.

3 (2) If a local or state law enforcement officer submits a sworn affidavit to the
4 department affirming that he or she has probable cause to believe cannabis is possessed *or*
5 *cultivated* at a specific address, an authorized employee for the department may disclose whether
6 the location is associated with a qualifying patient, designated caregiver, or cultivation location [~~ef~~
7 ~~an alternative treatment center~~].

8 (3) If a local or state law enforcement officer submits a sworn affidavit to the
9 department affirming that he or she has probable cause to believe a specific individual possesses *or*
10 *cultivates* cannabis, an authorized employee for the department may disclose whether the person is
11 a qualifying patient or a designated caregiver, provided that the law enforcement officer provides the
12 person's name and address or name and date of birth.

13 13 New Paragraph; Use of Therapeutic Cannabis; Registry Identification Cards. Amend RSA
14 126-X:4 by inserting after paragraph XII the following new paragraph:

15 XIII.(a) No later than October 1, 2020, the department shall allow existing and new
16 qualifying patients and designated caregivers to designate a cultivation location provided that:

17 (1) A qualifying patient may only designate a cultivation location if he or she does
18 not have a designated caregiver who will cultivate for him or her.

19 (2) A designated caregiver may only cultivate for a single qualifying patient, and
20 may only cultivate for a patient who does not have a cultivation location.

21 (b) No individual shall designate a cultivation location if such individual's permission to
22 cultivate has been revoked.

23 14 Use of Therapeutic Cannabis; Affirmative Defense. Amend RSA 126-X:5, I to read as follows:

24 I. It shall be an affirmative defense for any person charged with manufacturing, possessing,
25 having under his or her control, selling, purchasing, prescribing, administering, transporting,
26 *cultivating*, or possessing with intent to sell, dispense, or compound cannabis, cannabis analog, or
27 any preparation containing cannabis, if:

28 (a) The actor is a qualifying patient who has been issued a valid registry identification
29 card, was in possession of *or was cultivating* cannabis in a quantity and location permitted
30 pursuant to this chapter, and was engaged in the therapeutic use of cannabis;

31 (b) The actor is a designated caregiver who has been issued a valid registry
32 identification card, was in possession of *or was cultivating* cannabis in a quantity and location
33 permitted pursuant to this chapter, and was engaged in the therapeutic use of cannabis on behalf of
34 a qualifying patient; [~~or~~]

35 (c) The actor is an employee of a laboratory conducting testing required for alternative
36 treatment centers pursuant to rules adopted under this chapter[~~-~~] *or that tests cannabis provided*
37 *to it by qualifying patients, and designated caregivers; or*

1 (d) *The actor is a person with a qualifying medical condition who does not*
2 *possess a registry identification card and, prior to the arrest, the actor submitted to the*
3 *department a completed application to become a qualifying patient, including a written*
4 *certification, but the actor had not yet received a registry identification card from the*
5 *department; provided that:*

6 (1) *The actor does not possess more than the amount of cannabis permitted*
7 *under RSA 126-X:2, I, if the cannabis is not on the actor's property; or*

8 (2) *If the cannabis is on the actor's property, the actor does not possess more*
9 *than the amount of cannabis permitted under RSA 126-X:2, II-a, which shall be in a locked*
10 *and enclosed location on the actor's property.*

11 15 New Subparagraph; Use of Therapeutic Cannabis; Alternative Treatment Centers. Amend
12 RSA 126-X:8, XIII by inserting after subparagraph (c) the following new subparagraph:

13 (d) A qualifying patient or designated caregiver shall not obtain from an alternative
14 treatment center more than 12 seedlings during a 3-month period.

15 16 Use of Cannabis for Therapeutic Purposes; Prohibitions and Limits. Amend RSA 126-X:3,
16 VII to read as follows:

17 VII.(a) The department may revoke the registry identification card of a qualifying patient or
18 designated caregiver for violation of rules adopted by the department or for a violation of any other
19 provision of this chapter, and the qualifying patient or designated caregiver shall be subject to any
20 other penalties established in law for the violation.

21 (b) *The department may revoke a qualifying patient's or designated caregiver's*
22 *permission to cultivate cannabis for a violation of the rules adopted by the department or*
23 *for a violation of any provision of this chapter.*

24 17 Use of Cannabis for Therapeutic Purposes; Alternative Treatment Centers. Amend RSA 126-
25 X:8, XV(a) to read as follows:

26 XV.(a)(1) An alternative treatment center shall not possess or cultivate cannabis in excess
27 of the following quantities:

28 ~~[(1)]~~ (A) Eighty *mature* cannabis plants, *160 immature cannabis plants*, ~~[160~~
29 ~~seedlings]~~, and 80 ounces of usable cannabis, or 6 ounces of usable cannabis per qualifying patient;
30 and

31 ~~[(2)]~~ (B) Three mature cannabis plants, *12 immature cannabis plants*, ~~[12~~
32 ~~seedlings]~~, and 6 ounces for each qualifying patient who has designated the alternative treatment
33 center to provide him or her with cannabis for therapeutic use.

34 (2) *An alternative treatment center shall not be limited in the number of*
35 *seedlings it can possess or cultivate.*

36 18 Use of Cannabis for Therapeutic Purposes; Departmental Rules. Amend RSA 126-X:6,
37 III(a)(15) to read as follows:

1 (15) Procedures for determining and enforcing the daily maximum amount of
2 therapeutic cannabis which an alternative treatment center may cultivate or possess pursuant to
3 RSA 126-X:8, XV(a)(1).

4 19 Effective Date. This act shall take effect July 1, 2020.

Committee Minutes

SENATE CALENDAR NOTICE

Health and Human Services

Sen Tom Sherman, Chair
Sen Martha Fuller Clark, Vice Chair
Sen Shannon Chandley, Member
Sen Jeb Bradley, Member
Sen James Gray, Member

Date: January 16, 2020

HEARINGS

Wednesday

01/22/2020

(Day)

(Date)

Health and Human Services

Legislative Office Building 101 1:00 p.m.

(Name of Committee)

(Place)

(Time)

1:00 p.m.	SB 420	permitting qualifying patients and designated caregivers to cultivate cannabis for therapeutic use.
1:20 p.m.	SB 548	relative to protections under the use of cannabis for therapeutic purposes program.
1:40 p.m.	SB 697-FN	allowing qualifying patients to access all the alternative treatment centers under the use of cannabis for therapeutic purposes law.
2:00 p.m.	SB 700-FN	adding autism to qualifying conditions for the use of cannabis for therapeutic purposes law.
2:20 p.m.	SB 703-FN	relative to the use of cannabis for therapeutic purposes program.
2:40 p.m.	SB 546	relative to management of chronic pain.

EXECUTIVE SESSION MAY FOLLOW

Sponsors:

SB 420

Sen. Reagan

Sen. Hennessey

Sen. Kahn

Rep. Cushing

SB 548

Sen. Reagan

Sen. French,

Sen. Kahn

Rep. McGuire

Rep. Seaworth

SB 697-FN

Sen. Reagan

Sen. Kahn

Rep. Cushing

Rep. McGuire

SB 700-FN

Sen. Reagan

Sen. Ward

Sen. French

Sen. Bradley

Rep. McGuire

Rep. Seaworth

Rep. Spillane

Rep. Roy

SB 703-FN

Sen. Reagan

Sen. Rosenwald

Sen. Bradley

Rep. Cushing

SB 546

Sen. Reagan

Monica Cooper - 271-8631

Tom Sherman
Chairman

Senate Health and Human Services Committee

Monica Cooper - 271-8631

SB 420, permitting qualifying patients and designated caregivers to cultivate cannabis for therapeutic use.

Hearing Date: January 22, 2020

Members of the Committee Present: Senators Sherman, Fuller Clark, Chandley, Bradley and Gray

Members of the Committee Absent : None

Bill Analysis: This bill permits qualifying patients and designated caregivers to cultivate cannabis for therapeutic use.

Sponsors:

Sen. Reagan
Rep. Cushing

Sen. Hennessey

Sen. Kahn

Who supports the bill: Sen. Kahn, Rep. Renny Cushing, Matt Simon (Marijuana Policy Project), Rep. Willis Griffith, Dr. Joe Hannon (NH Harm Reduction Coalition), Rep. Jim Whittemore, Alica Rainville, Lisa Powers, Michael Bisson, Jeanne Hruska (ACLU-NH), Melissa Harvey, Daniel Stockwell, Justin Killeen, Heather M. Brown, Tracey Bowman Kallman

Who opposes the bill: Rep. Bob Greene, Beth Sargent (NH Chiefs of Police)

Who is neutral on the bill: Michael Holt (DHHS), Chris R. (NH State Police)

Summary of testimony presented:

Senator John Reagan

Senate District 17

- SB 420 is far less permissive than other states. SB 420's language essentially mirrors the bills that have come up over the last several years to allow the cultivation of cannabis.
- A former Representative, who is a chronic pain patient, explained that she budgets \$400 per month in order to stay off of opioids for three days. She would need \$1,200 per month in order to be off of opioids for an entire month. If she could grow her own cannabis, she would be off of opioids entirely.

- People on opioids are constipated from being on opioids. The price paid for pain relief is constipation, on top of the worst pain ever. Cannabis does not cause constipation.
- The language of SB 420 has been crafted to keep many different groups happy.
- Senator Sherman asked if SB 420 is the same language that the Committee saw in HB 364 (2019).
 - Senator Reagan responded that, to his understanding, it was essentially the same.
- Senator Sherman asked Senator Reagan to go over the numbers on the costs for the former Representative.
 - Senator Reagan said that for \$400 she can buy enough cannabis to stop opioids for three days. She suffers from chronic regional pain syndrome what is known in medical circles as the suicide disease, because the suicide rate in patients is 70%.
- Senator Sherman asked if in 2019 the Committee heard testimony that there was an issue for people with the distance to the nearest dispensary and growing at home was very helpful.
 - Senator Reagan responded that there were other speakers who could provide more information.

Mike Holt – Provided Written Testimony

Administrator for the Therapeutic Cannabis Program

- DHHS is neutral on SB 420.
- Over the years, DHHS has addressed all of the technical issues that the various home cultivation bills have attracted.
- SB 420 is the bill that was on the Senate floor last year but removed the gifting provision, based on the Senator Sherman's floor amendment, and changed the effective date.
- In advance of the potential for home cultivation to pass last year, DHHS' annual patient satisfaction survey included a question about home cultivation. 15% of all patients answered the survey. 23% responded that they would definitely grow their own cannabis, 16% said that they were likely to grow their own, 30% said that they might grow their own, 19% said they likely would not grow their own, and 12% said that they definitely would not. Other questions relating to growing one's own medical cannabis were also included in the survey.
- The costs involved are a serious concern for patients. Many have said that if costs go down, they would use the program. Costs have not gone down.
- DHHS does not see any issues with implementing SB 420.
- Senator Sherman asked if the issues raised last year, the issue of fire hazards from growing lights and the issue of people growing cannabis and then selling it for a profit, have been seen in other states.

- Mr. Holt said that he could not comment on either of those scenarios. SB 420 prohibits the sale and gifting of cannabis.

Matt Simon – Provided Written Testimony

Marijuana Policy Project

- Mr. Simon made a joke about the 1993 film *Groundhog Day* and going through the same steps several times.
- A home cultivation bill passed in 2009 under a Democratic-majority legislature, HB 648 (2009) was passed but, under the threat of a veto from Governor Lynch the Committee of Conference rewrote the bill to remove home cultivation.
- Again, in 2012 under a Republican-supermajority legislature, SB 409 (2012) was passed to allow home cultivation but vetoed by Governor Lynch and the veto override failed in the Senate.
- Patients continue to complain about the high cost and difficult access to alternative treatment centers (ATCs), as well as the options for strains and types at ATCs.
- Maine makes it very easy for out-of-state patients to travel to Maine and access their services.
- It may also be cheaper to go to Massachusetts to access the adult use market there.
- Public opinion is now such that legalization of marijuana is more popular than any elected official in New Hampshire.

Former Representative Joe Hannon

Policy Director for the NH Harm Reduction Coalition

- Mr. Hannon served as a public member on the Commission to Study the Legalization, Regulation, and Taxation of Marijuana (2017 235:1).
- The Commission heard testimony comparing home brewing laws in New Hampshire to home cultivation laws in New Hampshire. Home brewing laws are much more lax than the home cultivation discussion.
- There is an easy way for help people address the costs of their care.
- Senator Sherman asked if home cultivation would allow a patient to grow specifically for their needs if they could not obtain what they needed from an ATC.
 - Mr. Hannon responded that there would be nothing to prohibit it.
- Senator Sherman asked if he remembered correctly that sometimes an ATC would not have the capacity to grow a certain strain but, through home cultivation, a patient could tailor their plants to meet their needs.
 - Mr. Hannon responded that he was not an expert on growing cannabis but added that not every patient or caregiver would be growing their own.

Alicia Rainville – Provided Written Testimony

Manchester

- If a patient wants to grow a specific strain, home cultivation would allow a patient to purchase seeds for their specific needs.
- With most indoor growing, a patient will get one to three ounces per flower. It takes two ounces of cannabis flowers per week to create enough cannabis oil for a cancer patient.
- In Maine and Massachusetts, patients are taking oil because they either cannot smoke or have been told not to smoke by a doctor.
- To get the amount of oil needed from an ATC, the cost would be over \$700 per week. Current prices are about \$350 per ounce.
- Outdoor growing is limited to the New England growing season, which would be limited to a single growing cycle. Growing 6 pounds of flowers in an outdoor setting is only 48 weeks of medicine.

Lisa Powers

Goffstown

- Ms. Powers is a cannabis nurse. They focus on helping people and providing information.
- Ms. Powers' son has severe epilepsy and needs to have medical cannabis regularly.
- Cost is the primary concern.
- A patient needs \$3,500 worth of flower for their oil per month. This is a plan for the rich. If you have money, you can have therapy.
- Not everyone is going to be able to grow their own.
- LED lights work great for home cultivation and costs less than traditional growing lights.

Michael Bisson

- Being able to access multiple ATCs will help people who live in the Concord-Franklin area.
- There's no guarantee that the roads to the Plymouth ATC will be passable when a patient needs access.
- Changing an ATC costs \$50 and there is no guarantee that the new ATC will be even better.
- Mr. Bisson is not meeting his needs through the ATC and has had to go back to his doctor to take a pill. Now he is being monitored for organ damage for taking pills.

- Using a dispensary's analytics will help people identify what strains and seeds they need for their own growing system.
- Mr. Bisson has a Google Alert set up for the phrase "Marijuana" and "Fire". The smallest size of a fire Mr. Bisson has seen involved 25 plants. No one in New Hampshire will have that size of a home cultivation program. The space restrictions on New Hampshire's home cultivation program would make it next to impossible to have enough lights in place to start a fire.
- Planting outside is not easy and is not as safe as growing indoors.
- Most people can get by using an infused oil or butter. If there is a need for a great concentration, there are options available.
- The discussion is about treating people in need.

Melissa Harvey

New Boston

- Ms. Harvey has stage four breast cancer. She was able to access cannabis before she got her treatment card.
- Cannabis is not just THC. There are many aspects that can heal. CBDa is an enzyme that inhibits tumor growth that can be gotten very easily from eating a bud. It would not make her high from consumption.
- Home cultivation is not just about the THC content.
- Ms. Harvey pays \$650 to \$700 per month at the ATC. She has the financial resources, thankfully, to be able to pay that. There are many people, especially older people, who cannot. Using cannabis, Ms. Harvey was able to maintain a healthy diet and a positive lifestyle while people around her were sick and very ill from traditional medications.

Daniel Stockwell

Dublin

- Mr. Stockwell has Asperger's Syndrome. He felt that cannabis was something that he would need to get by in life.
- He works in schools and helps track children across the spectrum.
- Mr. Stockwell did not access the black market because he did not want to get in trouble with the law or losing access to his son.
- Mr. Stockwell's cannabis is unlike any other strain of cannabis that is available.
- Mr. Stockwell is working to legally grow hemp in Connecticut because none of the farmers in Connecticut are experienced in growing. The plot he managed was the only plot in the state that did not grow seeds.
- It is hard to grow cannabis, but people should be able to try.
- Mr. Stockwell is the caregiver for three other patients.

Justin Killeen

- The bar for access to medical cannabis is very high in New Hampshire.
- There are three companies that provide medical cannabis in the state.
- The current pricing for medical cannabis has gone down about \$0.50 in the last three years. The average cost is \$19.38 per gram. The three companies have the same price.
- For 72 ounces of cannabis in a calendar year, as is the limit set in statute, the cost is over \$26,000 out of pocket for medical cannabis.
- To purchase 100 milligrams of tincture at an ATC, the equivalent of half a gram of flower, comes out to a cost of \$120,000 per year.
- For edible and tincture products, the small scraps that are not aesthetically pleasing are used. One would assume that this would lower the cost of edibles and tinctures, but it does not.
- If home cultivation is allowed, people would be able to use and enjoy their flowers as well as using the scraps to make edibles and tinctures as a by-product of growing.
- If you can drive in New Hampshire without a seatbelt, people should be allowed to have a few plants in their closet with a light.

Heather Marie Brown

Barnstead

- SB 420 will be instrumental in helping many people.
- Ms. Brown is currently watching a child die, under the age of 16, who has a therapeutic cannabis card, but the family cannot access the ATC because of the costs involved.
- Another child with brain cancer was told by two hospitals that there was nothing that could be done, and the child needed to be taken home to die. The child got a therapeutic cannabis card but, again, the family could not afford to access the medication. It would have cost the family \$4,700 to treat the child with Full Extract Cannabis Oil (FECO). The family were able to travel to Maine and receive the full treatment for \$1,400, which they still needed a fundraiser for.
- Had SB 420 been in place, the cost would have been \$150 to provide the child with what she needed to save her years. It has been two years since the medical professionals gave up on her.
- Ms. Brown lives an hour from her ATC. It costs her \$40 to take a trip to the ATC. She needs 2 ounces of cannabis per month between CBD and THC, which is the combination that works best for her. That costs her \$700 per month. Her income is \$1,700 per month and her rent is \$1,400 per month, without utilities.
- Ms. Brown's yearly income is \$20,400. Each year, she is spending \$16,800 just for rent, \$480 on childcare to go to the ATC, and \$8,400 at the ATC. There is no

way for her to do that without being neglectful. Often, she has to suffer to take care of her children, keep the lights on, and keep the heat on.

- If home cultivation was an option, Ms. Brown would be an outside grower at a cost of \$150. It would save her \$8,730 per year and allow her to live life without having to struggle to get by.
- Ms. Brown does not want home cultivation in order to enter into a black market. She wants to make it so that her children have a mother who is present in their lives.
- Ms. Brown asked why no one questions if there is a danger to someone growing their own tomatoes or cucumbers but they question if there is a danger to growing their own cannabis.
- Only 23% of people surveyed by DHHS are interested in starting to grow. This would not put ATCs out of business. It could be cooperative in helping people get started and support them in their growing.

sc

Date Hearing Report completed: January 27, 2020

Speakers

Senate Health & Human Services Committee

SIGN-IN SHEET

Date: Tuesday, January 22nd, 2020 Time: 1:00 p.m.

SB 420 AN ACT permitting qualifying patients and designated caregivers to cultivate cannabis for therapeutic.

Name/Representing (please print neatly)

Name/Representing	Support	Neutral	Oppose	Speaking?	Yes	No
Sen Jay Kahn SD#10	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
Michael Holt / DHTS	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>
REP BOB GREENE Hills 37	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
My Renny Cushing	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
Matt Simon - Marijuana Policy project	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>
Rep. Willis Griffith	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
Dr Joe Hannon New Hampshire Harm Reduction coalition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>
Rep Jim Whittamore	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
Alicia Rainville	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>
LISA Powers	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>
MICHAEL BISSON	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>
Beth Sargent / NH Assn. of Chiefs of Police	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
CHRIS ROSLO MBSF	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>

Testimony

Monica Cooper

From: Douglas Marino <doug@603forward.org>
Sent: Tuesday, January 21, 2020 3:23 PM
To: Tom Sherman; Martha FullerClark; Jeb Bradley; James Gray; Shannon Chandley; Monica Cooper
Subject: Testimony in Support of SB 420 and SB 697-FN

Follow Up Flag: Follow up
Flag Status: Flagged

Thank you Chairman Sherman and members of the committee,

My name is Doug Marino, I am the Advocacy and Engagement Director for 603 Forward. 603 Forward is a new advocacy organization whose aim is to educate, engage, and activate the youth of New Hampshire to take political action at the state and local level. I am writing to you today to express our organization's support for strengthening New Hampshire therapeutic cannabis statute.

603 Forward strongly supports SB 420, allowing a sensible home grow option for therapeutic cannabis patients. New Hampshire's therapeutic cannabis program has been extremely successful since its inception in 2013. The program has allowed patients the opportunity to legally use cannabis for medical applications under the recommendation of their physician. Therapeutic cannabis has been an effective treatment for many patients dealing with chronic ailments. However, purchasing therapeutic cannabis from an alternative treatment center can be very expensive. Too many patients have a difficult time affording the medicine that they need. Implementing a well-regulated home grow option for patients is the right course of action to combat this problem. SB 420 is carefully crafted and narrowly focused to help therapeutic cannabis patients who have trouble affording medicine.

Additionally, our organization believes that allowing patients to access all of the alternative treatment centers is a logical step to take. Doing so would allow patients and designated caregivers to have more flexibility concerning where they can access therapeutic cannabis. We respectfully urge you to support both SB 420 and SB 697-FN.

Thank you for your consideration.

Best,

Doug Marino
Advocacy and Engagement Director
603 Forward
603.686.3283
doug@603forward.org

NH Therapeutic Cannabis Medical Oversight Board

SB 477, Chapter 228:2, Laws of 2018, RSA 126-X:12

Annual Report 2019

Membership¹

Jonathan Ballard, MD, Chief Medical Officer, NH DHHS
Virginia Brack, MD, Pediatrics
Heather Brown, Qualifying Patient
Corey Burchman, Alternative Treatment Center (ATC) Clinical Representative (Prime ATC)
David Conway, MD, Obstetrics and Gynecology
Bert Fichman, MD, Palliative Care
Jerry Knirk, MD, Physiatry/Orthopedics
Richard Morse, MD, Neurology
Molly Rossignol, DO, Family/Internal Medicine
Seddon Savage, MD, Addiction
Cornel Stanciu, MD, Psychiatry
Dennis Thapa, MD, Pain Management
Lisa Withrow, APRN, FNP-C, ACHPN, Oncology

Charge

In 2019, the Therapeutic Cannabis Medical Oversight Board (TCMOB; Board) was constituted pursuant to RSA 126-X:12. All members were appointed by the Commissioner of the NH Department of Health and Human Services (DHHS).

The Board's charge, pursuant to RSA 126-X:12, IV, is to "monitor and contribute to the oversight of the clinical, quality, and public health related matters of therapeutic cannabis under this chapter by:

- (a) Reviewing medical and scientific evidence pertaining to currently approved and additional qualifying conditions.
- (b) Reviewing laboratory results of required testing of cannabis cultivated and/or processed by an alternative treatment center and the use of pesticides on products under RSA 126-X:6, III(a)(16).
- (c) Monitoring clinical outcomes.
- (d) Reviewing training protocols for dispensary staff based on models from other states.
- (e) Receiving updates from alternative treatment centers on effectiveness of various strains, types of cannabinoids, and different routes of administration for specific conditions.
- (f) Reviewing best practices for medical providers regarding provider education, certification of patients, and patient access to the program.
- (g) Reviewing any other clinical, quality, and public health related matter relative to use of cannabis under this chapter."

In addition, the Board may make recommendations to the Commissioner of DHHS to add or remove qualifying medical conditions under RSA 126-X:1, IX based on its findings and after receiving input from the public through a public hearing process.

¹ Current members. Gilbert Fanciullo, MD, previously served as the ATC clinical representative.

Lastly, the Board shall make an annual report to the president of the senate, the speaker of the house of representatives, the oversight committee on health and human services established under RSA 126-A:13, the board of medicine, the board of nursing, and the therapeutic use of cannabis advisory council established in RSA 126-X:9.

Meeting Dates

The Board convened six times in 2019, at the offices of DHHS, as follows: March 22, June 5, July 17, September 4, October 9, and November 13.

Meetings were noticed on a webpage maintained by DHHS, <https://www.dhhs.nh.gov/oos/tcp/mob.htm>. Meeting minutes are posted at the same webpage.

Organizational Meeting Summary

Dr. Jonathan Ballard, Chief Medical Officer of DHHS, convened the first meeting on March 22, 2019. Dr. Ballard was elected chairperson for the first six meetings. Representative Jerry Knirk was elected alternate chairperson. DHHS staff presented the history of the Department's Therapeutic Cannabis Program (TCP), and the charge of the TCMOB was reviewed and discussed. Meeting dates were set, relevant legislation from the 2019 legislative session was discussed, and the Board introduced and discussed issues it wished to address in the upcoming year.

Qualifying Medical Conditions

The Board's primary focus in 2019 was on the evaluation of medical conditions proposed by the New Hampshire Legislature to be added as qualifying medical conditions for the therapeutic use of cannabis. In early 2019, the NH House of Representatives, Health and Human Services and Elderly Affairs (HHSEA) Committee retained two bills so that the TCMOB could review medical and scientific literature related to those medical conditions, evaluate whether cannabis use would be appropriate for those conditions, and make a recommendation to the Legislature whether to add or not add any of those conditions to the statutory list of qualifying medical conditions at RSA 126-X:1, IX.

- HB 366 would add opioid addiction, misuse and abuse
- HB 461 would add insomnia, anxiety, and Lyme disease

Early meetings were organizational in terms of developing the criteria for the evaluation of qualifying conditions and what levels of evidence would be used in making recommendations. The Board wished to rely as much as possible on published scientific evidence but would consider anecdotal and clinical evidence, given the relative lack of high quality scientific evidence. Subcommittees were identified for the review of the conditions under consideration in the retained bills described above. At a subsequent meeting those subcommittees reported their initial findings.

The Board recognized the importance of open public hearings when considering qualifying conditions in order to receive public input to help inform decision making. A public hearing on the four conditions was held on September 25 and written comments were accepted during an established written comment period. Administrative rule He-C 403, on the conduct of public hearings held by the TCMOB in order to receive input from the public regarding qualifying medical conditions, has since been approved by the Joint Legislative Committee on Administrative Rules, and adopted by the DHHS Commissioner:

Draft recommendation reports were prepared by a member of each of the subcommittees and were circulated to the Board for review prior to discussion at a subsequent meeting. The Board met on October 9 to discuss the reports and to vote on making recommendations to the NH House HHSEA Committee for their consideration when deciding the disposition of these bills.

The Board voted as follows:

- Recommend adding insomnia as a qualifying condition by a 9-1 vote;
- Recommend not adding anxiety as a qualifying condition by an 8-2 vote;
- Recommend not adding tick-borne illnesses as a qualifying condition by an 8-2 vote; and
- Recommend not adding opioid use disorder as a qualifying condition by a 6-4 vote.

The individual recommendation reports are included as Appendices A through E in this Annual Report. It is important to note that these documents do not reflect a consensus of the Board, but rather reflect the recommendations of the specific authors based on their experience, a literature review, and the public comments received. These are working documents of the Board, and are not intended, written, or edited for journal publication.

Representative Jerry Knirk, who also serves as the Board's legislative liaison, prepared a document for the HHSEA Committee which summarized the deliberations and recommendations of the TCMOB regarding these conditions (Appendix F). At the Board's November 13 meeting, Representative Knirk reported on the actions taken by the HHSEA Committee relative to the Board's recommendations:

- The Committee sustained the Board's recommendations on insomnia, anxiety, and tick-borne illnesses.
- The Committee ~~did not sustain~~ the Board's recommendation regarding opioid use disorder. Instead, the Committee voted to add opioid use disorder as a stand-alone condition, subject to the restrictions of certification only by a provider with specialized addiction training and only for the symptoms of cravings and/or withdrawal. Such restrictions were included in the motion the Board considered, and rejected, when voting on its own recommendation.
- HB 366 and HB 461, both amended by the HHSEA Committee based on the TCMOB recommendations, will next be considered by the full Legislature.

Also at the November 13 meeting, the Board considered the language of SB 175 (another retained bill from the 2019 legislative session), which proposed to remove all qualifying medical conditions from the therapeutic cannabis law and instead allow medical providers broad discretion to certify patients for the therapeutic use of cannabis due to any medical condition a provider believed could potentially be helped by therapeutic cannabis. The Board did not reach consensus on this issue, but the majority of members present voted in favor of a motion supporting the belief that the current knowledge base of the provider community in New Hampshire about therapeutic cannabis is insufficient to justify the proposed change at this time.

Looking Ahead to 2020

Jerry Knirk was elected to serve as Board chairperson for 2020, with Heather Brown serving as the alternate chairperson. The Board looks forward in 2020 to address its other charges. The Board expects that much of its attention over the next year will be to consider issues of provider best practices and clinician education, to continue evaluating qualifying conditions as necessary, driven by bills in the legislature, and to review other qualifying conditions and symptoms already established in statute.

Appendix A

NH Therapeutic Cannabis Medical Oversight Board Qualifying Medical Condition Recommendation Report: Insomnia October 2019

Condition: Insomnia

Recommendation

It is recommended that insomnia be included as a qualifying medical condition, paired with a recommendation that additional studies are needed to both determine the nature of the insomnia and response to treatment and to determine optimal dosing, ratio of CBD:THC or THC or CBD alone, and that perhaps consultation with a sleep disorders center be considered as well, to see if cannabis is appropriate for the type of insomnia for which treatment is being sought. The recommendation would strongly recommend that the sleep medicine providers study cannabis further in the management of sleep disorders, especially insomnia.

Special considerations

1. Pediatric population: unknown effects on the developing brain
2. Pregnant women: unknown effects on the developing fetus
3. Insomnia as a single diagnosis or secondary (associated) one. EX: it may be very useful for pain-mediated insomnia and not useful for depression-mediated insomnia
4. CBD vs. THC vs. whole plant extract containing both. It may be that the CBD alone is adequate and most therapeutic, as in epilepsy treatment.
5. Studies are limited in reaching any conclusions but overall point to beneficial effects more than deleterious effects.
6. At what point can we hope to apply a scientific approach to therapeutic cannabis, or should it be regarded in a different category, somewhere in the alternative medicine area, not subject to the standards of the allopathic medical profession?

Summary from the review of studies available

1. The majority of the studies suggests that the use of THC and THC derivatives, alone or in combination with CBD, may improve self-reported sleep quality, sleep disturbances, and decreased sleep onset latency.
2. Despite the importance of sleep, most of the studies examined sleep as a secondary outcome; there is a lack of placebo-controlled trials examining the use of cannabinoids specifically for treatment of sleep disorders.
3. Many of the available studies used non-standardized, non-validated questionnaires and subjective sleep measures, which leaves something to be desired in terms of the validity of data.
4. Available pharmacological treatments for insomnia and primary sleep disorders include medications such as benzodiazepines and non-benzodiazepine hypnotics. In addition, many other medications are used off label for the treatment of the symptoms. Many of these medications are limited by side effects, adverse effects, and in some cases addiction liability. Cannabinoids have also been associated with some

adverse events such as dizziness, cognitive impairment, increased risk of motor vehicle accidents, psychosis, dependence, depression, and anxiety.

5. Some medications currently used to treat insomnia can affect sleep architecture, but in the study of obstructive sleep apnea patients treated with dronabinol there was no effect seen on sleep architecture, suggesting that cannabinoid preparations (or dosing) may have fewer effects of sleep architecture compared to traditional medications. This does conflict with the results of other studies which demonstrate changes in objective sleep measures following various formulations of cannabis/cannabinoids. Thus, the particular preparation and dosing of cannabinoids may be an important factor, and again more research is needed.

6. Interpretation of the data from the studies is hampered by sample sizes which limits the statistical power of the results; the majority of studies were not looking at sleep as the primary outcome and focused on cannabinoids in the treatment of another primary illness, making it less clear that beneficial effects on sleep are secondary to the successful treatment of the underlying condition and not a direct effect.

7. Future studies are recommended with trial designs to investigate sleep as the primary outcome, have larger sample sizes, validated subjective measures, and objective assessments, to study the effects of cannabinoids in individuals with well-defined sleep disorders. Additionally, the optimal dosing and optimal balance of THC:CBD ratio for the treatment of sleep disorders remains unknown.

Therapeutic Cannabis and Insomnia

Background

1. Insomnia widespread with estimated 10% of adults having chronic insomnia and an additional one-third having occasional or intermittent insomnia on an annual basis.
2. Estimated cost of insomnia and sleep disorders on American economy: billions of dollars directly through health care costs or indirectly through loss of productivity or accidents.
3. Cannabis commonly reported to aid sleep, many report using cannabis to help them relax and achieve sleep.
4. There is thus a great deal of interest in the possible benefits of cannabis on sleep.

Summary of the literature

Numerous studies have investigated the effects of cannabis on sleep. There have been investigations of CBD, THC, THC:CBD, as plant extracts (or consumption of the cannabis plant by smoking or ingestion) and synthetic forms of THC and CBD (dronabinol, naliximols, nabilone). The various studies are difficult to interpret due to different methodologies, sample size, measured endpoints, and presence or lack of a control (untreated or treated with a different medication) group. Nonetheless, after reviewing the data that exists, there can be some conclusions reached, though further study is needed and should be a consideration. Interpretation of the published data must take into account the incomplete and uncertain information provided.

Summary of studies

Eighteen studies investigated effects of THC on sleep using synthetic equivalents of THC, to treat patients with various ailments. Note that sleep was measured as a secondary outcome, not a primary outcome (i.e. the point of the study was not to study sleep). However, the majority of these studies

reported that THC (synthetic) use improved subjective sleep quality. Seven of 18 studies also reported subjective decreases in sleep disturbances and in nightmare frequency.

In addition, in the 1970-80s there were studies looking at the effects of cannabinoids on sleep through the use of objective measurements. One assessed the effects on sleep at two doses of oral THC via EEG in 7 males with varying h/o pre-study cannabis use; showed inconsistent effects on slow wave sleep and REM sleep time. Another study gave drug naïve subjects (n=9) THC and measured the effects on EEG (sleep); they identified increases in stage 2 sleep and decreases in slow wave and REM sleep. A third study gave THC to four subjects just before sleep and showed increased stage 4 sleep and decreased REM in all subjects. Higher doses were associated with more rapid onset of sleep and decreased light sleep (stage 1).

THC for PTSD: findings relating to sleep: PTSD often associated with nightmares and poor sleep quality.

- One study treating with synthetic cannabinoid (nabilone, equivalent to THC) over 7 weeks for PTSD nightmares found improvements on a PTSD scale regarding distressing dreams; the study included subjects with a h/o poor response to standard treatments and showed significant relief in 70% of subjects, with only 22% of placebo-treated subjects showing improvement.
- These results have been replicated in additional studies (2) using other validated measures of sleep quality and other doses; all studies demonstrated significant improvement in sleep quality and frequency of nightmares. As it was not measured, it is unknown if this effect is mediated through suppression of REM sleep; further studies needed.

THC for chronic pain: findings relating to sleep: studies have examined THC effect on pain with sleep as a secondary outcome measure.

- One study looked at chronic pain and THC as adjunctive treatment to opioids and found a subjective decrease of pain interference during sleep as well as subjective decrease in sleep disturbance.
- Study compared oxycodone to nabilone (synthetic THC) and found less analgesia with nabilone and no difference in effect on sleep between the two.
- Study of 27 ALS patients with painful muscle spasms found no subjective change in sleep quality with dronabinol treatment; in contrast, a study of nabilone in diabetic painful neuropathy found dronabinol treatment led to subjective improvements in sleep quality and less sleep disruption by self-reporting.
- Overall, research on THC for chronic pain and sleep is limited and presents mixed results.
 - THC studied against amitriptyline in patients with fibromyalgia and chronic insomnia; both drugs had a favorable effect on sleep, but nabilone was superior.
 - THC vs gabapentin for diabetic neuropathy pain: nabilone group fared better with improvements in sleep, no change for gabapentin-treated group.

THC for obstructive sleep apnea: findings on sleepiness and apnea/hypopnea.

- Several studies reported subjective improvements on sleepiness scales; one study (limited, needs additional study) reported changes in the Apnea/hypopnea index (improvement) with no change in REM sleep or arousal. Overall, studies support benefits of dronabinol on treatment of OSA.

THC for HIV-related disorders: findings relating to sleep.

- One study treated HIV-positive chronic cannabis smokers with dronabinol and measured sleep latency, number of awakenings, and sleep efficiency. Dronabinol improved sleep for the first 8 nights of a 16 night study; no improvement on days 9-16. Unclear if tolerance played a role. Objective measures showed increased NREM sleep and decreased minutes awake. Subjective measures suggested increased quality of sleep and decreased awakenings.

Sleep and Nabiximols (1:1 CBD:THC)

- Nine studies total investigated the effects of Nabiximols as a treatment outcome for sleep. Subjects had MS or chronic pain. All studies were randomized, placebo-controlled, 4-14 weeks, and examined sleep as a secondary outcome. There was a range of doses. No study had objective measures or validated sleep measures, instead using visual analogue scales. 5/9 studies noted improvements in subjective sleep quality at various doses of Nabiximols, and 4/9 reported improvements in sleep disturbance related scores. Generally results reported significant improvements in sleep quality and overall sleep. Some results reported only on subgroups, making them less robust.

Nabiximols for MS and spasticity

- Several studies show that successful treatment of spasticity in MS can lead to improvements in sleep, but studies at times analyzed only subgroups and so results, though promising, are not as readily extrapolatable.

Nabiximols for Chronic Pain

- Five studies looked at nabiximols and chronic pain. Improvements reported in subjective measures of sleep quality and disturbances with administration of nabiximols. One study look for cannabinoids in individuals with rheumatoid arthritis and pain and reported positive treatment results and subjective data. There was good analgesic effects and improvement in subjective sleep quality. Another study looked at peripheral neuropathic pain and again demonstrated self-reported improvement in sleep quality. A larger study (246 patients) with peripheral neuropathic pain randomized to receive either placebo or nabiximols showed a significant improvement in sleep quality based on a 10 point rated sleep scale. Although sleep was a secondary outcome measure and the improvement may have been due to pain control, all studies reported improved overall sleep.

Sleep and Other Cannabis Preparations

- Fourteen studies look that the effects of combinations of cannabinoids treatments including smoked cannabis on sleep quality, sleep disturbances, and sleep onset latency. 6/14 reported favorable outcomes for cannabinoids treatments over placebo with significant improvements within the sleep domains. 2 studies included validated sleep measurement found patient's reported decreased sleep onset latency with the use of cannabinoid treatments. Another study examined patients with neuropathic pain in which they smoked cannabis (1 of 4 different strains with varying THC potencies). The higher THC potency cannabis was associated with less difficulty falling sleep and fewer sleep disturbances as measured on a sleep questionnaire. And another study with healthy volunteers for different treatments

including THC and CBD combinations and THC alone as well as placebo were examined. Measures included EEG performance, sleep onset latency, and subjective assessments of sleepiness and mood. There was no significant effect on sleep seen with the THC alone. The low and medium range dosing THC/CBD combinations showed a decrease in stage III sleep with the higher dose demonstrating increased wakefulness. It was concluded that the activating properties of CBD and the sedative properties of THC could function together to induce sleep while counteracting daytime sleepiness. There were no significant reported changes or effects on sleep in this study.

Conclusions from the review of studies available

1. The majority of the studies suggests that the use of THC and THC derivatives, alone or in combination with CBD, may improve self-reported sleep quality, sleep disturbances, and decreased sleep onset latency.
2. Despite the importance of sleep, most of the studies examined sleep as a secondary outcome; there is a lack of placebo-controlled trials examining the use of cannabinoids specifically for treatment of sleep disorders.
3. Many of the available studies used non-standardized, non-validated questionnaires and subjective sleep measures, which leaves something to be desired in terms of the validity of data.
4. Available pharmacological treatments for insomnia and primary sleep disorders include medications such as benzodiazepines and non-benzodiazepine hypnotics. In addition, many other medications are used off label for the treatment of the symptoms. Many of these medications are limited by side effects, adverse effects, and in some cases addiction liability. Cannabinoids have also been associated with some adverse events such as dizziness, cognitive impairment, increased risk of motor vehicle accidents, psychosis, dependence, depression, and anxiety.
5. Some medications currently used to treat insomnia can affect sleep architecture, but in the study of obstructive sleep apnea patients treated with dronabinol there was no effect seen on sleep architecture, suggesting that cannabinoid preparations (or dosing) may have fewer effects of sleep architecture compared to traditional medications. This does conflict with the results of other studies which demonstrate changes in objective sleep measures following various formulations of cannabis/cannabinoids. Thus the particular preparation and dosing of cannabinoids may be an important factor and again more research is needed.
6. Interpretation of the data from the studies is hampered by sample sizes which limits the statistical power of the results, the majority of studies were not looking at sleep as the primary outcome and focused on cannabinoids in the treatment of another primary illness, making it less clear that beneficial effects on sleep are secondary to the successful treatment of the underlying condition and not a direct effect.
7. Future studies are recommended with trial designs to investigate sleep as the primary outcome, have larger sample sizes, validated subjective measures, and objective assessments, to study the effects of cannabinoids in individuals with well-defined sleep disorders. Additionally, the optimal dosing and optimal balance of THC: CBD ratio for the treatment of sleep disorders remains unknown.

Public Comments

Two comments were received in favor of adding insomnia and anxiety to the list of qualifying conditions; insomnia was not separated out in the comments

References

1. Babson, KA, Sotille, J, Morabito, D. (2017) Cannabis, Cannabinoids, and Sleep: A Review of the Literature. *Current Psychiatry Rep* 19: 23.
2. Belendiuk, KA, Babson, KA, Vandrey, R, Bonn-Miller, MO (2015) Cannabis species and cannabinoid concentration preference among sleep disturbed medicinal cannabis users. *Addictive behaviors* 50, 178-181.
3. Klumpers, LE, Thacker, DL (2019) A Brief Background on Cannabis: From Plant to Medical Indications. *Journal of AOAC International*, Volume 102, #2, 412-420.
4. Opila-Lehman, J, Shannon, S (2016) Effectiveness of Cannabidiol Oil for Pediatric Anxiety and Insomnia as Part of Posttraumatic Stress Disorder: A Case Report. *Perm J* 20 (4): 16-005.
5. Vandrey, R, Smith, MT, McCann, UD, Budney, AJ, Curran, EM (2011) Sleep disturbance and the effects of extended release zolpidem during cannabis withdrawal. *Drug alcohol dependence* 117 (1): 38-44.
6. Up-To-Date 2019: Overview of the treatment of insomnia in adults. (Summary and review of the topic of insomnia).
7. Drazdowski, TK, Kliewer, WL, Marcel, M. (2019) college students' using marijuana to sleep relates to frequency, problematic use, and sleep problems. *Journal of American College health*, 1-11.
8. Dufort, A, Kuhathasan, N, Gottschalk, R, MacKillop, J, Minuzzi, L, Frey, BN (2019): The Use of Cannabinoids for Sleep: A Critical Review on Clinical Trials. *Experimental and Clinical Psychopharmacology* 27 (4): 383-401.

Appendix B

NH Therapeutic Cannabis Medical Oversight Board Qualifying Medical Condition Recommendation Report: Anxiety October 2019

Condition: Anxiety

Recommendation

- Do not approve as a qualifying diagnosis
- Do not recommend as a qualifying symptom
- Do not recommend as a stand-alone qualifying diagnosis/condition

Rationale

It would be irresponsible to recommend addressing “anxiety” in isolation, as a symptom rather than as part of a specific diagnosis, which requires careful assessment.

Recommend against chronic use of any THC-containing product (including whole plant) for management of any anxiety spectrum condition, or for use in anyone with any co-morbid anxiety disorder. THC has some evidence for harm in terms of worsening symptomatology particularly in adolescents where suicidality may arise. Acutely and situationally, there may be evidence that low dose THC can improve anxiety while high dose can worsen and induce panic attacks but findings are mixed.

The evidence for CBD-only products (including whole plant) is equivocal. Acute pretreatment (hence not chronic use) in those with the Social Anxiety Disorder type may be effective, although clear conclusions cannot be drawn (limited data). Chronic CBD when combined with THC may worsen anxiety exponentially.

Regarding anxiety as a symptom in those with pain conditions there is emerging evidence of worsening anxiety when whole plant cannabis is concomitantly used with (opioid) pain regimens.

If, however, this condition were to be approved as a qualifying medical condition, would recommend any decisions regarding certifications for any particular anxiety disorder be made by physicians trained in psychiatric disorders who can: make the specific anxiety diagnosis; recognize psychiatric and addictive comorbidities; and are able to provide interventions if suicidality arises. Additionally, extreme diligence is required when cannabinoids are used concomitantly with evidence based pharmacological treatment modalities for management of anxiety due to synergistic sedative effects and drug : herb interactions that can be lethal.

Important concepts to consider

1. Anxiety is not a single condition but an umbrella term, each subset with unique underlying neurobiological basis requiring specifically crafted management. Anxiety (Disorders) per DSM-5:
 - a. Generalized Anxiety Disorder
 - b. Phobias and Specific phobias
 - c. Agoraphobia

d. Social Anxiety Disorder

e. Separation Anxiety Disorder

2. Anxiety disorders are highly prevalent: 33.7% of population is affected by an anxiety disorder during their lifetime (highest of all mental illnesses).
3. Anxiety disorders are highly comorbid with other psychiatric and addictive disorders: >90% of individuals with an anxiety disorder have another concurrent psychiatric condition. Depressive disorder is most frequent (76.7%), followed by addictive disorders (35.9%) and bipolar (22.3%).
4. There is evidence for harm (worsening symptoms, increased disease burden, development of suicidality) when whole plant and THC only is used by those with bi- or uni-polar depression
5. Whole plants contains >500 constituents each found in various proportions with significant pharmacodynamics and pharmacokinetic interactions with other psychopharmacological agents.
6. American Psychiatric Association: "There is currently no scientific evidence to support the use of cannabis as an effective treatment for any psychiatric illness. Several studies have shown that cannabis use may in fact exacerbate or hasten the onset of psychiatric illnesses. This includes the contribution of cannabis to symptoms of mood disorders, anxiety and psychosis, particularly in young adulthood. Cannabis use is associated with the emergence of mood disorders, particularly symptoms of bipolar disorder, among those with a family history of mood disorder."
7. In adolescents, regular cannabis use is associated with increased incidence of anxiety disorders as well as increased depression, suicidal ideation, use of other substances, and risky behavior.
8. Regular cannabis use is associated with an increased risk of developing a cannabis use disorder (9% of episodic users become dependent, and 25-50% of daily users).
9. Acute THC-only administration is dose dependent – low doses anxiolytic while higher doses induce anxiety. Acute CBD co-administration has mixed findings (Boggs et al 2018).
10. Animal studies show chronic co-administration of CBD and THC; greater anxiety symptoms than induced by THC alone at high doses (Klein et al 2011).
11. National Academy of Sciences (2017): Moderate level of evidence supports that whole plant use is associated with: increased incidence of social anxiety disorder in regular users (also increased risk for developing depressive disorders; increased incidence of suicidal ideation and behavior).

Supporting evidence

1. American Psychiatric Association position statement on use of therapeutic cannabis for anxiety disorders.
2. Natural Sciences and Engineering Research Council of Canada (NSERC) and other epidemiological studies.
3. Results of a systematic and comprehensive literature review on the use of CBD only and THC only for treatment / management of anxiety spectrum conditions.
4. National Academy of Science Report.
5. Literature review of studies published since the National Academy of Science Report.

Notable references

Patton GC, Coffey C, Carlin JB, Degenhardt L, Lynskey M, Hall W. Cannabis use and mental health in young people: cohort study. *BMJ*. 2002;325 (7374):1195-1198.

- Crippa JA, Zuardi AW, Martín-Santos R, et al. Cannabis and anxiety: a critical review of the evidence. *Hum Psychopharmacol*. 2009;24(7):515-23.
- Hill KP. Medical marijuana for treatment of chronic pain and other medical and psychiatric problems: a clinical review. *JAMA*. doi:10.1001/jama.2015.6199.
- Scherma M, Masia P, Deidda M, Fratta W, Tanda G, Fadda P. New Perspectives on the Use of Cannabis in the Treatment of Psychiatric Disorders. *Medicines (Basel)*. 2018;5(4):107. Published 2018 Oct 2. doi:10.3390/medicines5040107
- Moore TH, et al. Cannabis use and risk of psychotic or affective mental health outcomes: a systematic review. *Lancet*. 2007 Jul 28;370(9584):319-28.
- Large M, Sharama S, Comptom MT, Slade T, Nielssen O. Cannabis use and earlier onset of psychosis: a systematic meta-analysis. *Arch Gen Psychiatry*. 2011 Jun;68(6): 555-61.
- van Laar M, van Dorsselaer S, Monshouwer K, de Graaf R. Does cannabis use predict the first incidence of mood and anxiety disorders in the adult population? *Addiction*. 2007 Aug;102(8): 1251-60.
- Degenhardt L, Coffey C, Romaniuk H, Swift W, Carlin JB, Hall WD, Patton GC. The persistence of the association between adolescent cannabis use and common mental disorders into young adulthood. *Addiction*. 2013 Jan;108(1):124-33.
- Duffy A, Horrocks L, Milin R, Doucette S, Persson G, Grof P. Adolescent substance use disorder during the early stages of bipolar disorder: a prospective high-risk study. *J Affect Disord*. 2012 Dec 15;142(1-3):57-64.
- Lynskey M, Glowinski A, Todorov A, Bucholz K, Madden P, Nelson E, Statham D, Martin N, Heath A, Phil D. Major depressive disorder, suicidal ideation, and suicide attempt in twins discordant for cannabis dependence and early-onset cannabis use. *Arch Gen Psychiatry*. 2004 Oct;61(10): 1026-32.
- Kahn RS, Linszen DH, van Os J, Wiersma D, Bruggerman R, Cahn W, de Haan L, Krabbendam L, Myin-Germeys O. Evidence that familial liability for psychosis is expressed as differential sensitivity to cannabis: An analysis of patient-sibling and sibling-control pairs. *Arch Gen Psychiatry*. 2011 Feb; 68(2): 138-147.
- Degenhardt L, Coffey C, Romaniuk K, Swift W, Carlin JB, Hall WD, Patton GH. The persistence of the association between adolescent cannabis use and common mental disorders into young adulthood. *Addiction*. 2013 Jan;108(1):124-33.
- Milin R, Walker S, Duffy A. Assessment and treatment of comorbid psychotic disorders and bipolar disorder. *Clinical Manual of Adolescent Substance Abuse Treatment*. Washington, DC: American Psychiatric Publishing Inc, 2011.
- Bandelow B, Michaelis S. Epidemiology of anxiety disorders in the 21st century. *Dialogues Clin Neurosci*. 2015;17(3):327-335.
- Nel C, Augustyn L, Bartman N, et al. Anxiety disorders: Psychiatric comorbidities and psychosocial stressors among adult outpatients. *S Afr J Psychiatr*. 2018;24:1138. Published 2018 May 24. doi:10.4102/sajpsychiatry.v24i0.1138.

Summary of findings of comprehensive literature search and analysis of CBD and THC impact on anxiety conditions

“Studies of CBD and THC for Anxiety Disorders”

Two small studies reported mixed findings on the impact of synthetic THC on various anxiety conditions. Another two studies of single dose CBD among people social anxiety disorders reported positive findings. The details of these studies are summarized below.

The anxiolytic properties of a synthetic THC compound, nabilone, were studied using a single dosing paradigm (Glass, Uhlenhuth, Hartel, Schuster, & Fischman, 1981). Here, eight symptomatic individuals diagnosed with either Anxiety Neurosis or Generalized Anxiety Disorder participated in receiving a single dose of 2 mg nabilone, placebo, and then once a week dosing of nabilone of various strengths ranging from 0.5mg to 5 mg over five weeks. Nabilone was not associated with any improvements in anxiety symptoms. Side effects included increase in heart rate and sedation while orthostatic hypotension was noted with higher doses.

A study of daily dosing for a month reported more promising findings. In this double-blinded trial, nabilone 1 mg TID or placebo was administered to 20 participants diagnosed with DSM-1 psychoneurotic anxiety disorders over 28 days followed by a four day washout (Fabre & McLendon, 1981). Anxiety improved in the nabilone group compared the to placebo group as measured by the Hamilton Anxiety Scale. However, Hamilton Anxiety Scale total scores range from 0-56, with scores of 18-24 indicating moderate levels of anxiety. The mean total scores shown for participants in this study were very low: 1.9 on the first treatment day compared to about 1.0 on day 28 in the nabilone group, and 1.7 in the placebo group, this it is unclear how applicable this study would be to patients with clinically significant anxiety disorders. Most participants continued for the duration of the trial despite reports of mild to severe dry mouth among 18 of the participants and drowsiness among three patients.

As for CBD trials, a crossover fMRI scanning study (Crippa et al., 2011) compared a single dose of 400mg oral CBD to placebo in ten treatment-naïve men diagnosed with generalized social anxiety disorder. A significant decrease in anxiety was observed in the CBD pre-treated group on exposure to anxiety-provoking stimulus without appreciable side effects. This was replicated in a subsequent study (Bergamaschi et al.) where 24 treatment-naïve patients diagnosed with social anxiety disorder were randomized to receive a single dose of 600mg oral CBD or placebo 90 minutes prior to a simulated public speaking test. The group receiving CBD experienced a significant difference during the speech phase ($p=0.012$) on the anxiety factor of the visual analog mood scale. Additionally, pretreatment with CBD also resulted in less cognitive impairment and less discomfort during both the anticipation and speech phases of the test. Total scores were not reported. No side effects were mentioned. We did not find any prospective trials of repeated or daily dosing of CBD among people with social anxiety or other anxiety disorders in which anxiety disorder symptoms were prospectively assessed. We did not find any studies of defined dose combinations of CBD and THC on people with anxiety disorders.”

Anecdotal Evidence

Public hearing testimony, written testimonies:

Four individuals submitted testimonies.

One from an RN who leads a large network of cannabis nurses. She has “witnessed several patients time and time again benefit from using cannabis oil drops for insomnia and other forms, including the drops for anxiety”. The exact composition of these drops, specific anxiety diagnoses, frequency of use and duration of time was not mentioned.

Second from the president of NH Herbal network and owner of “Mama Kiss Cannabis”. She advocates for use of this “life-changing plant” mainly to manage insomnia but also “symptoms of ADHD and anxiety” based on personal experience (has dealt with a multitude of symptoms related to insomnia, anxiety, pain and autoimmune conditions along others). She notes “legal CBD products” do not alleviate symptoms and it is rather the entire plant that has the effects.

Third from the partner of someone dealing with “severe anxiety as well as other ailments” for who “anti-anxiety medications” have historically led to undesirable adverse effects. Use of cannabis (?whole plant) have “reduced his anxiety without significant negative adverse effects”. The exact composition used, route of administration, specific anxiety diagnosis, frequency of use and duration of time was not mentioned.

Fourth discussed someone’s experience with anxiety symptoms starting at age 13 with past trials of clonazepam and sertraline which led to adverse effects. Ten years since the onset the anxiety has led to manifestation of headaches and insomnia. This individual is not a user but reports his friends have dealt with similar issues and obtaining a cannabis license has led to improved symptoms for them as witnessed over a one week period where he notes “he seems like a completely different person to me, it felt like someone else took over my friend’s body, he was so full of life and happy”. He attached several articles one noting: “low THC/high CBD cannabis was best for reducing perceived symptoms of depression, High THC/high CBD cannabis was best for reducing perceived symptoms of stress, and the use of cannabis to treat depression appears to exacerbate depression over time.”

Appendix C

New Hampshire Therapeutic Cannabis Medical Oversight Board
Qualifying Medical Condition Recommendation Report: Tick-borne Illnesses
October 2019

Condition: Tick-borne Illnesses

Recommendation

Approve as a stand-alone qualifying medical condition

Rationale

1. Currently, no evidence-based studies specific to cannabis use with regard to tick-borne illnesses are available; however, the anti-inflammatory, analgesic, anxiolytic and neuroprotective action of cannabis has been well documented, as has its clinical impact on reducing pain, nausea, anxiety, insomnia and discomfort from dermal rashes.
2. Patients with chronic persistent tick-borne illness infection typically suffer from multiple symptoms including fatigue, impaired cognition ("brain fog"), sleep disorders and pain syndromes. As attested by members of the public via written testimony, as well as noted by some clinicians, many of these symptoms have been reportedly relieved (or significantly reduced) through therapeutic cannabis use.
3. Due to the number of tick-borne illnesses (listed in summary), multitude of potential symptoms (listed in summary) and varying clinical presentation, recommend approval as a stand-alone qualifying medical condition.

Summary

1. Tick-borne illnesses are increasing nationally. Each year, the CDC reports approximately 30,000 cases of Lyme disease, but experts estimate that the true incidence is 10 times higher.
2. Listing of potential tick-borne illnesses in NH (based on types of ticks in the area – per CDC):
 - Lyme disease
 - Babesiosis
 - Ehrlichiosis
 - Bartonella
 - STARI
 - Rocky Mountain Spotted Fever
 - Anaplasmosis
 - Relapsing Fever
 - Powassan Virus disease
 - Heartland Virus
3. Tick-borne illnesses cause multiple symptoms, including:
 - Rash (various rashes dependent upon type of tick-borne illness)
 - Fever, chills

- Diaphoresis
 - Severe headache
 - Insomnia
 - Profound fatigue
 - Muscle and joint pain
 - Anxiety
 - Lymphadenopathy
 - Arthropathies
 - Neuropathic pain
 - Nausea/vomiting/diarrhea
 - Anorexia
 - Seizures
 - Muscular atrophy
 - Numbness in extremities
 - Tremors
4. Tick-borne Illness Rashes. Lyme disease, southern tick-associated rash illness (STARI), Rocky Mountain spotted fever (RMSF), ehrlichiosis, bartonella, and tularemia can result in distinctive rashes:
- Lyme disease: Erythema migrans
 - STARI: red, expanding “bulls’ eye” lesions
 - Rocky Mountain Spotted Fever: small, flat, pink, non-itchy macules on wrists, forearms, ankles and trunk. Can progress to red-to-purple spotted (petechial) rash.
 - Bartonella: unusual streaked rash that resembles stretch marks.
 - Tularemia: skin ulcer appears at the site where the organism entered the body. The ulcer is accompanied by swelling of regional lymph glands, usually in the armpit or groin.
 - Ehrlichiosis: rash ranges from macular to maculopapular to petechial.

References

Centers for Disease Control and Prevention website: *Geographic Distribution of Ticks that Bite Humans*, https://www.cdc.gov/ticks/geographic_distribution.html

Other Lyme Disease Co-Infections, <https://www.lymedisease.org/lyme-basics/co-infections/other-co-infections/>

Kowal MA et al. Review on clinical studies with cannabis and cannabinoids 2010-2014. *Cannabinoids*. 2016;11(special issue):1-18.

Marks DH, Friedman A. The Therapeutic Potential of Cannabinoids in Dermatology. *Skin Therapy Lett*. 2018;23(6):1–5.

Mounessa, Jessica S. et al. The role of cannabinoids in dermatology. *Journal of the American Academy of Dermatology*, Volume 77, Issue 1, 188 - 190

Nagarkatti P, Pandey R, Rieder SA, Hegde VL, Nagarkatti M. Cannabinoids as novel anti-inflammatory drugs. *Future Med Chem*. 2009;1(7):1333–1349.

Navarra G et al. Targeting Cannabinoid CB2 Receptors in the CNS. Medicinal Approaches with Focus on Neurodegenerative Disorders. *Front Neuro*. 2016 Sep; 10(406):1-11.

Onaivi ES. Commentary: Functional Neuronal CB2 Cannabinoid Receptors in the CNS. *Curr Neuropharmacol*. 2011 Mar; 9(1):205-208.

Small-Howard AL, et al. Anti-inflammatory potential of CB1-mediated cAMP elevation in mast cells. *Biochem J*. 2005 Jun 1;388(Pt 2):465-473.

Svizenska I. Cannabinoid receptors 1 and 2 (CB1 and CB2), their distribution, ligands and functional involvement in nervous system structures — A short review. *Pharmacol Biochem Behavior*. 2008;90:501–511.

AAD 2018: Topical Cannabidiol Recommended as Adjunct Treatment for Acne, Eczema, and Psoriasis, <http://www.practiceupdate.com/content/aad-2018-topical-cannabidiol-recommended-as-adjunct-treatment-for-acne-eczema-and-psoriasis/64728>

Amazing Results: The Healing Power of Cannabis Oil On Lyme Disease and Lyme Co-infections, <http://www.collective-evolution.com/2013/09/12/amazing-story-the-healing-power-of-cannabis-oil-on-lyme-disease-and-lyme-co-infections/>

Cannabis Relieves Nerve Pain from Lyme disease, Fibromyalgia, & Associated Conditions, <http://www.collective-evolution.com/2014/09/17/cannabis-relieves-nerve-pain-from-lyme-disease-fibromyalgia-associated-conditions/>

Cannabis Kicks Lyme Disease to the Curb, <http://www.realfarmacy.com/kicks-lyme-disease-to-the-curb/>

Medical Marijuana for Lyme Disease, <https://www.marijuanadoctors.com/conditions/lyme-disease/>

Project CBD, User's Manual: <https://www.projectcbd.org/guidance/cbd-users-manual>

Appendix D

NH Therapeutic Cannabis Medical Oversight Board Qualifying Medical Condition Recommendation Report: Opioid Addiction, Misuse or Abuse October 2019

Condition: Opioid addiction, misuse or abuse

Recommendation

Do NOT recommend adding opioid addiction, misuse or abuse as a qualifying medical condition for the therapeutic use of cannabis.

Note: CBD-only formulations may be effective for symptoms associated with opioid use disorder. However, cannabis products with THC (ie, whole plant cannabis) should be avoided and are not recommended.

Rationale

Cannabidiol (CBD) shows promise in reducing craving for opioids², reducing anxiety associated with withdrawal symptoms, and decreasing cognitive and emotional stress vulnerability. Thus a function for CBD in reducing the risk of relapse. CBD has low reinforcing properties with limited abuse potential and may inhibit drug seeking behavior.¹

Conclusions from both animal and human studies demonstrate that THC is a psychoactive compound with rewarding effects and addictive properties.¹ THC increases the use of illicit opioids, can cause significant anxiety in the individual, and is not recommended by authoritative individuals nor organizations to be associated with treating opioid use disorder.

While cannabis has been used for pain control and has been touted to reduce the use of opioids in pain conditions, thereby ostensibly reducing the risk of developing opioid use disorders, this is not the same as treating opioid use disorder. Currently there are FDA approved medications for opioid use disorder and these show significant reduction in overdose deaths, reduction in HIV and Hepatitis B and C transmission, among other therapeutic outcomes. The addition of cannabis in its whole form is controversial and organizations such as the American Society of Addiction Medicine hold a position against promoting cannabis for medical use, never mind treatment of OUD:

- https://www.asam.org/docs/default-source/public-policy-statements/marijuana-cannabinoids-and-legalization-9-21-20156d6e0f9472bc604ca5b7ff000030b21a.pdf?sfvrsn=e0d26fc2_0
- [https://www.asam.org/resources/publications/asam-weekly/asam-weekly-archive/asam-weekly-editorial-comment/2019/02/11/editorial-comment-cannabis-for-treatment-of-opioid-use-disorder-\(oud\)](https://www.asam.org/resources/publications/asam-weekly/asam-weekly-archive/asam-weekly-editorial-comment/2019/02/11/editorial-comment-cannabis-for-treatment-of-opioid-use-disorder-(oud))

Patients who have a diagnosis of an opioid use disorder have a higher risk of use disorders of other types as well. There have been suggestions that use of cannabis (ie, smoked, THC) increases the risk of use of other addictive substances including opioids.^{3,4} Additionally, treatment strategies for addiction include those that reduce the risk that the patient be using any psychoactive substances and work on managing the illness with behavioral health changes as well as medications.

Since the above recommendation would be to have restrictions on certifying for therapeutic cannabis, and limiting the product to CBD only, it is recommended to consider using a current product that is available to be prescribed off label. This is Epidiolex.

References

1. Hurd, YL et al. Early Phase in the Development of Cannabidiol as a Treatment for Addiction: Opioid Relapse Takes Initial Center Stage. *Neurotherapeutics* (2015) 12:807-815.
2. Hurd, YL. Cannabidiol for the Reduction of Cue-Induced Craving and Anxiety in Drug Abstinent Individuals with Heroin Use Disorder: A Double-Blind Randomized Placebo-Controlled Trial. *Am J Psychiatry* 2019.
3. Wiese, B. Emerging Evidence for Cannabis' Role in Opioid Use Disorder. *Cannabis and Cannabinoid Research Vol 3.1* 2018. Pp179-186.
4. Scavone, JL. Cannabinoid and Opioid Interactions: implications for opiate dependence and withdrawal. *Neuroscience*. 2013 September 17; 248: 637-654.

Appendix E

NH Therapeutic Cannabis Medical Oversight Board Qualifying Medical Condition Recommendation Report: Opioid Use Disorder October 2019

Condition: Opioid Use Disorder

Recommendation

- **That pure CBD be available** for use in management of opioid withdrawal and as an adjunct to evidence-based interventions for opioid use disorders. (Early studies are promising and to date no harm has been demonstrated with short term use, though it should be noted that long term use has not been studied so effects over time are not known.)
 - Possibilities for making CBD available to patients include:
 - Off label prescription of Epidiolex (pure FDA approved & regulated CBD)
 - Over the counter CBD that has been tested and certified as pure CBD
 - Certification to exclusively certify patients for CBD, not THC containing products.
- **That OUD not be an indication for therapeutic cannabis certification** through the current general therapeutic cannabis certification process.
- That certification
 - **May be provided as an adjunct in the context of evidence-based MAT** by a DATA 2001 waived clinician who is prescribing or authorizing the individual's MAT
 - **May be provided by an ABAM, APA or ACGME certified addiction medicine or addiction psychiatry physician** who follows the patient regularly, with or without other MAT treatment
- That such treatment **must be treated as a clinical trial** because the outcomes of the use of cannabis as a treatment or adjunct for OUD are unknown. To that end
 - The certifying clinician and/or patient must complete and submit a quarterly data sheet (TBD) to DHHS
 - Tracking/analysis of data must be performed
 - Policy may be changed based on clinical trial findings and on evolving scientific literature.

Key contextual information

According to the 2018 Substance Abuse and Mental Health Services Administration National Survey on Drug Use and Health (<https://www.samhsa.gov/data/report/2018-nsduh-annual-national-report>), opioid use disorder (OUD) is the third most common substance use disorder in the United States. Opioid use disorder affects approximately 2.2 million people in the United States, while cannabis use disorder affects 4.4 million and alcohol use disorder affects 14.8 million. However, because mis/overuse of opioids can cause severe respiratory depression, opioid misuse (with or without OUD), is associated with high risk of lethal overdose (47,736 drug overdose deaths in the US in 2017 involved an opioid <https://www.cdc.gov/drugoverdose/epidemic/index.html>) and OUD has become the most common substance use disorder for which people in the U.S. seek treatment. (NSDUH 2018)

Currently three pharmacologic agents are available to treat OUD, along with psychosocial treatment approaches. Strong evidence supports the efficacy of the opioid agonist methadone and the opioid partial agonist buprenorphine in supporting OUD recovery, reducing risk of overdose deaths from OUD,

and improving function. Evidence is accruing in support of the opioid antagonist naltrexone in treatment of OUD as well.

As psychotropic substances that can be associated with misuse, both methadone and buprenorphine require special authorization to use in treatment of opioid addiction; methadone is dispensed only through federally licensed treatment clinics and buprenorphine can be prescribed only by clinicians who receive special education and certification. Naltrexone, which has no demonstrated misuse potential, can be prescribed by any clinicians with prescriptive authority.

Cannabis is a psychotropic agent with demonstrated misuse and addiction potential. Moderate to severe cannabis (addiction) occurs in 9%-30% of users depending on age of onset of use and THC concentrations (active psychotropic cannabinoid) of cannabis used (Budney et al, 2019). Therefore, consideration of cannabis as a potential therapeutic agent in the context OUD must take into consideration potential risks for misuse and potential compounding of addiction and, if authorized for use in this context, care must appropriately structured to avoid potential harm.

Summary of findings

More studies on cannabis and individual cannabinoids are needed to clarify cannabis and cannabinoid actions on opioid reward, opioid misuse, and opioid use disorder. The current evidence on cannabis and opioid misuse/use disorder is somewhat conflicting; however, taken in aggregate available studies lean towards indicating that cannabis use is associated with greater risk of opioid misuse and poorer functional outcomes. The cannabinoid CBD, and possibly other specific cannabinoids under study, appear to have promise in treatment of OUD. Testimonials from individuals suggest some people with OUD may experience improvement with use of cannabis.

Specific points:

- CBD alone may be helpful in reducing anxiety and craving in early abstinence from opioids in OUD.
- Impact of cannabis on retention in OUD treatment is not clear (one study suggests increased retention, one the opposite).
- Cannabis use appears to be associated with higher risk of development of opioid use disorder in the future.
- Cannabis use during opioid therapy of pain appears to be associated with increased risk of opioid misuse and/or OUD.
- Persons with OUD who also have cannabis use disorder have poorer functional outcomes (homelessness and inpatient hospitalizations) but receive fewer prescriptions for opioids.
- Initially promising epidemiologic findings suggesting that therapeutic cannabis availability reduces opioid overdose deaths on a population wide basis have not held up over time.
- Numerous anecdotal reports suggest that a subset of persons find cannabis helpful in recovery from OUD. This could be through palliation of OUD associated symptoms (sleep disturbance, pain, etc)-or through direct effects on limbic reward and addiction mechanisms. Future studies might include analysis of the experiences of advocates who have recovered from OUD through use of cannabis.

Relevant Scientific Evidence

There is considerable scientific literature that addresses potential interactions between cannabis and opioids. Studies generally fall into three issue categories:

1. Impact of cannabis and/or cannabinoids on opioid dose requirements and opioid use in pain treatment
2. Impact of state cannabis laws on opioid use and opioid-related harm
3. Impact of cannabis and/or cannabinoids on opioid misuse and use disorder

It is clear that human endogenous/physiologic opioid and cannabinoid systems are closely inter-related based on observation of both anatomic co-location of opioid and cannabinoid receptors throughout the central and peripheral nervous systems and of the fact that manipulation of cannabinoid and opioid receptors can facilitate or block actions of the other system. It is further clear that these interrelationships are relevant to understanding all three issues above. However, in considering whether opioid use disorder should be an indication for therapeutic cannabis certification, only studies that consider impact of cannabis on opioid misuse and opioid use disorder (OUD) are directly relevant. These are discussed below. Brief note is made, however, of studies addressing the other two issues which are salient to cannabis use in OUD. (Bibliography at the end includes all identified cannabis and opioid citations, many of which are not directly relevant to the OUD issue and therefore not cited here in the narrative here. The bibliography is included in two formats: alphabetical and grouped by issue theme.)

Studies on cannabis and cannabinoid roles with respect to opioid misuse and OUD

Nine studies were identified that specifically address the relationship between cannabis or cannabinoid use and opioid misuse or use disorder.

- One high quality clinical trial found the cannabinoid CBD reduced anxiety and cue-induced craving in early abstinence (up to 7 days) from opioids in the context of OUD. (Hurd et al, 2019)
- One study suggested heavy cannabis use increased retention in treatment of OUD (Socias et al, 2018); however, this study was contrasted by a similar study that found higher dropout rates from OUD treatment in cannabis users. (Franklyn et al, 2017)
- One study examined a large national Veterans data base and found that persons with co-occurring OUD and CUD were at higher risk for homelessness and inpatient psychiatric admissions than persons with OUD or CUD alone, but that the co-occurring group received fewer prescriptions for opioids. (DeAquino et al, 2019)
- Two studies suggested that cannabis use during one period of time is associated with higher risk for development of non-medical use of opioids and/or OUD at a future time. (Butelman et al, 2018; Olfson et al, 2018)
- Three studies examined patients on opioid therapy of pain and found that patients who also used cannabis were at greater risk for misuse of prescribed opioids and/or for development of OUD than those who using opioids alone. Two of these studies evaluated patients with medical cannabis authorization and co-use (Caputi et al, 2018; Nugent et al, 2018), while one evaluated cannabis use noted on urine toxicology screens. (Dibenedetto et al, 2018)

Other studies that may be considered relevant

An epidemiologic study published in 2014 which received much public attention, examined data from 1999-2010 and found that states with therapeutic cannabis availability had lower rates of opioid overdose deaths. However, a replication of the study using the same methodology and extending the study through 2017 showed a reversal of the original findings with overdose deaths higher in states with

therapeutic cannabis. (Shover et al, 2019) If the initial findings had held however, this would still not provide relevant support for cannabis as a treatment for OUD, since it could not be assumed that reduction in deaths occurred in persons with OUD, as opposed to persons using opioids for pain treatment or other purposes.

There is conflicting evidence regarding opioid dosing for pain in the presence of co-use of cannabis; however, the evidence in both animals and humans appears to weigh towards suggesting reduced opioid dose requirements to treat pain in the presence of cannabis. (*See list of pain-related articles in bibliography.*) This reflexively suggests to many that if opioid use for pain is reduced in the presence of cannabis, opioid use must also be reduced in the presence of OUD. However, reductions in opioid dosing for pain likely reflects complementary (synergistic or additive) analgesic mechanisms which can not be reasonably extrapolated to an expectation of reduced opioid consumption in OUD which is mediated entirely different than pain. Indeed, the three studies noted above find higher rates opioid misuse and/or OUD in opioid therapy of pain when cannabis is also used.

Anecdotal Evidence

Public hearing testimony

A public hearing on opioid use disorder as an indication for cannabis was held at which two individuals testified.

One individual related the experience of his brother who had addiction to heroin and who experienced the use of cannabis as instrumental to his recovery from OUD. The reporter noted that use of cannabis alone has not been directly associated with overdose deaths and it is far safer than opioids, so he believed it should be available for use by individuals with OUD in order to reduce harm from opioids.

Another individual reported that she credited cannabis with helping to restore her to a functional life and feelings of normalcy in the presence of long-term, disabling PTSD, chronic pain, anxiety and dysfunctional use of alcohol, cocaine and opioids.

Other testimonials heard in other contexts

Many individuals who appear to be functioning well in recovery from opioid use disorder, have reported—in legislative hearings, on radio call-in shows, to their care providers, and in other contexts—their personal experiences that cannabis has helped them reduce or eliminate misuse of opioids and overcome OUD. Many report their perceptions that it has been life-saving.

While anecdotal evidence should generally be used to inform research, not to determine policy or clinical practice, in this context that includes including rapidly evolving and as yet unclear scientific evidence, it not easily dismissed. I believe it should be accommodated in policy if it is safe to do so.

Information from other states

Arizona, Massachusetts, Hawaii, Maine, Connecticut and New Mexico have reportedly considered OUD as an indication for therapeutic cannabis and have rejected it as qualifying conditions.

New Jersey, New York, Pennsylvania and Illinois recognize OUD as an indication for cannabis with various caveats.

- New York requires that practitioners certifying OUD for cannabis be waived to provide MAT to provide and that practitioners certifying ANY conditions for cannabis use must have taken a state approved therapeutic cannabis course.
https://www.health.ny.gov/regulations/medical_marijuana/
- New Jersey permits cannabis use to ease withdrawal symptoms and as an adjunct MAT treatment program. Patients must be enrolled in an MAT program.
https://www.nj.gov/health/medicalmarijuana/documents/agency_decision_letters/MMP_FAD_conditions_012319.pdf
- Pennsylvania permits cannabis use for opioid use disorder “for which conventional therapeutic interventions are contraindicated or ineffective, or for which adjunctive therapy is indicated in combination with primary therapeutic interventions.”
<https://www.health.pa.gov/topics/programs/Medical%20Marijuana/Pages/Medical%20Marijuana.aspx>
- Illinois permits cannabis as a “substitution” for opioids apparently for any conditions for which an opioid could be legitimately prescribed, presumably pain or OUD. Somewhat incomprehensible to this reader, but here is a link. <http://dph.illinois.gov/topics-services/prevention-wellness/medical-cannabis/opioid-alternative-pilot-program>

Bibliography (Alphabetical by first author)

<+Bachhuber MA, Saloner B, Cunningham CO, Barry CL. Medical cannabis laws and opioid analgesic overdose mortality in the United States, 1999-2010. JAMA Intern Med. 2014 Oct;174(10):1668-73.

>-Bauer FL, Donahoo WT, Hollis HW, Jr., Tsai AG, Pottorf BJ, Johnson JM, Silveira LJ, Husain FA. Marijuana's Influence on Pain Scores, Initial Weight Loss, and Other Bariatric Surgical Outcomes. Perm J. 22:18-002, 2018.

>+Baron EP, Lucas P, Eades J, Hogue O. Patterns of medicinal cannabis use, strain analysis, substitution effect among patients with migraine, headache, arthritis, and chronic pain in a medicinal cannabis cohort. Journal of Headache and Pain. 19(1), 2018.

<>+Bradford AC, Bradford WD. Medical marijuana laws reduce prescription medication use in medicare part d. Health Affairs. 35(7):1230-1236, 2016.

<>+Bradford AC, Bradford WD. Medical Marijuana laws may be associated with a decline in the number of prescriptions for medicaid enrollees. Health Affairs. 36(5):945-951, 2017.

<+Bradford AC, Bradford WD, Abraham A, Adams GB. Association Between US State Medical Cannabis Laws and Opioid Prescribing in the Medicare Part D Population. JAMA Internal medicine. 30602:1-6, 2018.

>+Boehnke KF, Litinas E, Clauw DJ. Medical cannabis associated with decreased opiate medication use in retrospective cross-sectional survey of chronic pain patients. The Journal of Pain. 17(6):739-744, 2016.

>+Boehnke KF, Scott JR, Litinas E, Sisley S, Williams DA, Clauw DJ. Pills to Pot: Observational Analyses of Cannabis Substitution Among Medical Cannabis Users With Chronic Pain. J Pain. 2019.

<+Budney AJ, Sofis MJ, Borodovsky JT. An update on cannabis use disorder with comment on the impact of policy related to therapeutic and recreational cannabis use. *Eur Arch Psychiatry Clin Neurosci.* 2019 Feb;269(1):73-86.

*-Butelman ER, et al. *Front Psychiatry.* 2018;9:283.

>-Caputi TL, Humphreys K. Medical Marijuana Users are More Likely to Use Prescription Drugs Medically and Nonmedically. *J Addict Med.* 12(4):295-299, 2018.

>-Campbell G, Hall WD, Peacock A, Lintzeris N, Bruno R, Larance B, Nielsen S, Cohen M, Chan G, Mattick RP, Blyth F, Shanahan M, Dobbins T, Farrell M, Degenhardt L. Effect of cannabis use in people with chronic non-cancer pain prescribed opioids: findings from a 4-prospective cohort study. *The Lancet Public Health.* 3(7):e341-e350, 2018.

<+Campbell G(1), Hall W(2)(3), Nielsen S(1)(4). What does the ecological and epidemiological evidence indicate about the potential for cannabinoids to reduce opioid use and harms? A comprehensive review. *Int Rev Psychiatry.* 2018 Oct;30(5):91-106. doi: 10.1080/09540261.2018.1509842.

>+Cooke AC(1), Knight KR(2), Miaskowski C(3). Patients' and clinicians' perspectives of co-use of cannabis and opioids for chronic non-cancer pain management in primary care. *Int J Drug Policy.* 2019 Jan;63:23-28. University of California, San Francisco CA.

*+De Aquino JP1, Sofuoglu M1,2, Stefanovics E1,2, Rosenheck R1,2. Adverse Consequences of Co-Occurring Opioid Use Disorder and Cannabis Use Disorder Compared to Opioid Use Disorder Only. *Am J Drug Alcohol Abuse.* 2019 May 21:1-1.

>-DiBenedetto DJ, et al. Weed VF(2), Wawrzyniak KM(1), Finkelman M(3), Paolini J(2), Schatman ME(4), Herrera D(5), Kulich RJ(6)(7). The Association between cannabis use and aberrant behaviors during chronic opioid therapy for chronic pain. *Pain Med.* 2018

*-Franklyn AM1, Eibl JK1, Gauthier GJ1, Marsh DC1,2. The impact of cannabis use on patients enrolled in opioid agonist therapy in Ontario, Canada. *PLoS One.* 2017 Nov 8;12(11):e0187633.

*+Hurd et al, CBD for reduction in cue related craving in drug abstinent individuals with heroin use disorder. *Am J Psych,* May 2019.

<+Liang D, et al. *Addiction.* 2018 [Epub ahead of print]

>+Lucas P, Walsh Z. Medical cannabis access, use, and substitution for prescription opioids and other substances: A survey of authorized medical cannabis patients. *International Journal of Drug Policy.* 42:30-35, 2017.

>+O'Connell et al Medical Cannabis: effects of opioid and benzodiazepine requirements. *Ann Pharm* 2019.

*-Olfson et al, Cannabis Use and Risk of Prescription Opioid Use Disorder in the U.S., Am J Psychiatry, 2018.

>-Nugent et al, Patterns and Correlates of Medical cannabis use for pain among patients prescribed long term opioid therapy, Gen Hosp Psych, 2018.

<+Raji et al, Association between cannabis laws and opioid prescription among privately insured adult (MIXED findings), Prev Med, 2019.

>-(*)Rogers AH(1), Bakhshaie J, Buckner JD, Orr MF, Paulus DJ, Ditre JW, Zvolensky MJ. Opioid and Cannabis Co-Use among Adults with Chronic Pain: Relations to Substance Misuse, Mental Health, and Pain Experience. J Addict Med. 2018.

<+Segura et al, Association of Medical Marijuana Laws with Non-Medical Prescription Opioid Use and Prescription Opioid Use Disorder, JAMA Network Open, July 2019.

<+Shi Y(1), Liang D(2), Bao Y(3), An R(4), Wallace MS(5), Grant I(6). Recreational marijuana legalization and prescription opioids received by Medicaid enrollees. Drug Alcohol Depend. 2019 Jan 1;194:13-19. University of California San Diego.

<-Shover et al, Association of Medical Cannabis and Opioid Overdose has Reversed over Time, Proceedings of the National Academies of Science, June 2019.

*+Socias ME, Wood E, Lake S, Nolan S, Fairbairn N, Hayashi K, Shulha HP, Liu S, Kerr T, Milloy MJ. High-intensity cannabis use is associated with retention in opioid agonist treatment: a longitudinal analysis. Addiction. 2018 Dec;113(12):2250-2258.

Wiese B, Wilson-Poe AR, Emerging Evidence for Cannabis' Role in Opioid Use Disorder. Cannabis Cannabinoid Res. 2018 Sep 1;3(1):179-189. (*review+)

Bibliography by Focus Groupings

Studies focused on Cannabis impact on Opioid Use Disorder & Opioid Misuse

+(CBD only) Hurd et al, CBD for reduction in cue related craving in drug abstinent individuals with heroin use disorder. Am J Psych, May 2019.

+Socias ME, Wood E, Lake S, Nolan S, Fairbairn N, Hayashi K, Shulha HP, Liu S, Kerr T, Milloy MJ. High-intensity cannabis use is associated with retention in opioid agonist treatment: a longitudinal analysis. Addiction. 2018 Dec;113(12):2250-2258.

+De Aquino JP1, Sofuoglu M1,2, Stefanovics E1,2, Rosenheck R1,2. Adverse Consequences of Co-Occurring Opioid Use Disorder and Cannabis Use Disorder Compared to Opioid Use Disorder Only. Am J Drug Alcohol Abuse. 2019 May 21:1-11.

-Butelman ER, et al. Non-medical Cannabis Self-Exposure as a Dimensional Predictor of Opioid Dependence Diagnosis: A Propensity Score Matched Analysis. Front Psychiatry. 2018 Jun 27;9:283. Front Psychiatry. 2018;9:283.

-Franklyn AM1, Eibl JK1, Gauthier GJ1, Marsh DC1,2. The impact of cannabis use on patients enrolled in opioid agonist therapy in Ontario, Canada. PLoS One. 2017 Nov 8;12(11):e0187633.

-Olson et al, Cannabis Use and Risk of Prescription Opioid Use Disorder in the U.S., Am J Psychiatry, 2018.

-Caputi TL, Humphreys K. Medical Marijuana Users are More Likely to Use Prescription Drugs Medically and Nonmedically. J Addict Med. 12(4):295-299, 2018.

-DiBenedetto DJ, et al. Pain Med. Weed VF(2), Wawrzyniak KM(1), Finkelman M(3), Paolini J(2), Schatman ME(4), Herrera D(5), Kulich RJ(6)(7). The Association Between Cannabis Use and Aberrant Behaviors During Chronic Opioid Therapy for Chronic Pain. Pain Med. 2018;19:1997-2008.

-Nugent et al, Patterns and Correlates of Medical cannabis use for pain among patients prescribed long term opioid therapy, Gen Hosp Psych, 2018.

Studies focused on cannabis use in context of opioids used for pain

+Baron EP, Lucas P, Eades J, Hogue O. Patterns of medicinal cannabis use, strain analysis, substitution effect among patients with migraine, headache, arthritis, and chronic pain in a medicinal cannabis cohort. Journal of Headache and Pain. 19(1), 2018.

+Boehnke KF, Litinas E, Clauw DJ. Medical cannabis associated with decreased opiate medication use in retrospective cross-sectional survey of chronic pain patients. The Journal of Pain. 17(6):739-744, 2016.

+Boehnke KF, Scott JR, Litinas E, Sisley S, Williams DA, Clauw DJ. Pills to Pot: Observational Analyses of Cannabis Substitution Among Medical Cannabis Users With Chronic Pain. J Pain. 2019.

+Lucas P, Walsh Z. Medical cannabis access, use, and substitution for prescription opioids and other substances: A survey of authorized medical cannabis patients. International Journal of Drug Policy. 42:30-35, 2017.

+O'Connell et al. Medical Cannabis: effects of opioid and benzodiazepine requirements. Ann Pharm 2019.

+Cooke AC(1), Knight KR(2), Miaskowski C(3). Patients' and clinicians' perspectives of co-use of cannabis and opioids for chronic non-cancer pain management in primary care. Int J Drug Policy. 2019 Jan;63:23-28. University of California, San Francisco CA.

-Bauer FL, Donahoo WT, Hollis HW, Jr., Tsai AG, Pottorf BJ, Johnson JM, Silveira LJ, Husain FA. Marijuana's Influence on Pain Scores, Initial Weight Loss, and Other Bariatric Surgical Outcomes. Perm J. 22:18-002, 2018.

-Caputi TL, Humphreys K. Medical Marijuana Users are More Likely to Use Prescription Drugs Medically and Nonmedically. J Addict Med. 12(4):295-299, 2018.

-Campbell G, Hall WD, Peacock A, Lintzeris N, Bruno R, Larance B, Nielsen S, Cohen M, Chan G, Mattick RP, Blyth F, Shanahan M, Dobbins T, Farrell M, Degenhardt L. Effect of cannabis use in people with chronic non-cancer pain prescribed opioids: findings from a 4-prospective cohort study. *The Lancet Public Health*. 3(7):e341-e350, 2018.

-DiBenedetto DJ, et al. *Pain Med*. Weed VF(2), Wawrzyniak KM(1), Finkelman M(3), Paolini J(2), Schatman ME(4), Herrera D(5), Kulich RJ(6)(7). The Association Between Cannabis Use and Aberrant Behaviors During Chronic Opioid Therapy for Chronic Pain. *Pain Med*. 2018;19:1997-2008.

-Nugent et al, Patterns and Correlates of Medical cannabis use for pain among patients prescribed long term opioid therapy, *Gen Hosp Psych*, 2018

-(*-)Rogers AH(1), Bakhshaei J, Buckner JD, Orr MF, Paulus DJ, Ditre JW, Zvolensky MJ. Opioid and Cannabis Co-Use among Adults with Chronic Pain: Relations to Substance Misuse, Mental Health, and Pain Experience. *J Addict Med*. 2018

Epidemiologic studies focused on associations between cannabis availability and opioid use

+Bachhuber MA, Saloner B, Cunningham CO, Barry CL. Medical cannabis laws and opioid analgesic overdose mortality in the United States, 1999-2010. *JAMA Intern Med*. 2014 Oct;174(10):1668-73

<>+Bradford AC, Bradford WD. Medical marijuana laws reduce prescription medication use in medicare part d. *Health Affairs*. 35(7):1230-1236, 2016.

<>+Bradford AC, Bradford WD. Medical Marijuana laws may be associated with a decline in the number of prescriptions for medicaid enrollees. *Health Affairs*. 36(5):945-951, 2017.

<+Bradford AC, Bradford WD, Abraham A, Adams GB. Association Between US State Medical Cannabis Laws and Opioid Prescribing in the Medicare Part D Population. *JAMA Internal medicine*. 30602:1-6, 2018.

<+Campbell G(1), Hall W(2)(3), Nielsen S(1)(4). What does the ecological and epidemiological evidence indicate about the potential for cannabinoids to reduce opioid use and harms? A comprehensive review. *Int Rev Psychiatry*. 2018 Oct;30(5):91-106. doi: 10.1080/09540261.2018.1509842.

<+Liang D, et al. *Addiction*. 2018 Misuse, Mental Health, and Pain Experience. *J Addict Med*. 2018.

<+Raji et al, Association between cannabis laws and opioid prescription among privately insured adult (MIXED findings), *Prev Med*, 2019.

<+Segura et al, Association of Medical Marijuana Laws with Non-Medical Prescription Opioid Use and Prescription Opioid Use Disorder, *JAMA Network Open*, July 2019 (Increased Non-Med use, trend not significant decreased OUD among non-med users.)

<+Shi Y(1), Liang D(2), Bao Y(3), An R(4), Wallace MS(5), Grant I(6). Recreational marijuana legalization and prescription opioids received by Medicaid enrollees. *Drug Alcohol Depend*. 2019 Jan 1;194:13-19. University of California San Diego.

<-Shover et al, Association of Medical Cannabis and Opioid Overdose has Reversed over Time, Proceedings of the National Academies of Science, June 2019.

Review articles, no new study

<+Budney AJ, Sofis MJ, Borodovsky JT. An update on cannabis use disorder with comment on the impact of policy related to therapeutic and recreational cannabis use. Eur Arch Psychiatry Clin Neurosci. 2019 Feb;269(1):73-86.

(*review+)Wiese B, Wilson-Poe AR, Emerging Evidence for Cannabis' Role in Opioid Use Disorder. Cannabis Cannabinoid Res. 2018 Sep 1;3(1):179-189.

Appendix F

RECOMMENDATIONS OF THE THERAPEUTIC CANNABIS MEDICAL OVERSIGHT BOARD REGARDING HB 366 AND HB 461

Rep. Jerry Knirk, TCMOB member and liaison to the legislature

Oct 12, 2019

The Therapeutic Cannabis Medical Oversight Board (TCMOB) is composed of the medical director of DHHS, a qualifying patient, a clinical representative from an ATC and ten medical providers from various fields, who have the task of advising the therapeutic cannabis program on medical issues, including qualifying conditions. The TCMOB devoted a great deal of time to considering the conditions included in HB 366 and HB 461.

We had preliminary discussions at one meeting and appointed subcommittees to consider each condition. At a subsequent meeting those subcommittees reported their initial findings. We held a public hearing on the four conditions on September 25 and written comments were accepted. Draft reports were prepared by a member of each of the subcommittees and circulated to the board. The board then met on October 9 to finalize recommendations on these four conditions to advise the Health and Human Services and Elderly Affairs Committee of the House of Representatives for their consideration when deciding the disposition of these bills.

The group was very diligent utilizing their personal experience, exhaustive literature reviews, and testimonials from patients to make their recommendations.

Final reports have not been completed at this time. I am summarizing the findings in this document utilizing portions of the draft reports and have obtained permission to circulate the draft reports for the two conditions upon which we had good agreement on the recommendation, agreeing with the report. For the conditions in which the board had conflicting reports or when the decision was not in agreement with the report, I have summarized the reports and the discussion.

INSOMNIA (HB 461)

Recommendation: Include as a qualifying symptom

Vote: 9-1

Summary:

1. The majority of the studies suggests that the use of THC and THC derivatives, alone or in combination with CBD, may improve self-reported sleep quality, sleep disturbances, and decreased sleep onset latency
2. Despite the importance of sleep, most of the studies examined sleep as a secondary outcome; there is a lack of placebo-controlled trials examining the use of cannabinoids specifically for treatment of sleep disorders.

3. Many of the available studies used nonstandardized, non-validated questionnaires and subjective sleep measures, which leaves something to be desired in terms of the validity of data.

4. Available pharmacological treatments for insomnia and primary sleep disorders include medications such as benzodiazepines and non-benzodiazepine hypnotics. In addition, many other medications are used off label for the treatment of the symptoms. Many of these medications are limited by side effects, adverse effects, and in some cases addiction liability. Cannabinoids have also been associated with some adverse events such as dizziness, cognitive impairment, increased risk of motor vehicle accidents, psychosis, dependence, depression, and anxiety.

5. Some medications currently used to treat insomnia can affect sleep architecture, but in the study of obstructive sleep apnea patients treated with dronabinol there was no effect seen on sleep architecture, suggesting that cannabinoid preparations (or dosing) may have fewer effects of sleep architecture compared to traditional medications. This does conflict with the results of other studies which demonstrate changes in objective sleep measures following various formulations of cannabis/cannabinoids. Thus the particular preparation and dosing of cannabinoids may be an important factor and more research is needed.

6. Interpretation of the data from the studies is hampered by sample sizes which limits the statistical power of the results. The majority of studies were not looking at sleep as the primary outcome and focused on cannabinoids in the treatment of another primary illness, making it less clear that beneficial effects on sleep are secondary to the successful treatment of the underlying condition and not a direct effect.

7. Future studies are recommended with trial designs to investigate sleep as the primary outcome, have larger sample sizes, validated subjective measures, and objective assessments and to study the effects of cannabinoids in individuals with well-defined sleep disorders. Additionally, the optimal dosing and optimal balance of THC: CBD ratio for the treatment of sleep disorders remains unknown.

Public comments:

Two comments were received in favor of adding insomnia and anxiety to the list of qualifying conditions; insomnia was not separated out in the comment

Special considerations:

- i. Pediatric population: unknown effects on the developing brain
- ii. Pregnant women: unknown effects on the developing fetus
- iii. Insomnia as a single diagnosis or secondary (associated) one. EX: it may be very useful for pain-mediated insomnia and not useful for depression-mediated insomnia
- iv. CBD vs. THC vs. whole plant extract containing both. It may be that the CBD alone is adequate and most therapeutic, as in epilepsy treatment.
- v. Studies are limited in reaching any conclusions, but overall point to beneficial effects more than deleterious
- vi. At what point can we hope to apply a scientific approach to medical marijuana, or should it be regarded in a different category, somewhere in the alternative medicine area, not subject to the standards of the allopathic medical profession?

Discussion:

Discussion reflected the points made in the report and the above noted vote was taken to include insomnia as a qualifying symptom. Motion was made to make insomnia a free-standing condition and that motion was defeated.

ANXIETY (HB 461)

Recommendation: Do not approve as a qualifying symptom, diagnosis or free-standing diagnosis/condition

Vote: 8-2

Summary:

It would be irresponsible to recommend addressing "anxiety" in isolation, as a symptom rather than as part of a specific diagnosis - which requires careful assessment.

Recommend against chronic use of any THC-containing product (including whole plant) for management of any anxiety spectrum condition, or for use in anyone with any co-morbid anxiety disorder. THC has some evidence for harm in terms of worsening symptomatology particularly in adolescents where suicidality may arise. Acutely and situationally, there may be evidence that low dose THC can improve anxiety while high dose can worsen and induce panic attacks but findings are mixed.

The evidence for CBD-only products (including whole plant) is equivocal. Acute pretreatment (hence not chronic use) in those with the Social Anxiety Disorder type may be effective, although clear conclusions cannot be drawn (limited data). Chronic CBD when combined with THC may worsen anxiety exponentially.

Regarding anxiety as a symptom in those with pain conditions there is emerging evidence of worsening anxiety when whole plant cannabis is concomitantly used with (opioid) pain regimens.

If however anxiety is approved as a qualifying symptom or condition, would recommend any decisions regarding certifications for any particular anxiety disorder to physicians trained in psychiatric disorders who can: make the specific anxiety diagnosis; recognize psychiatric and addictive comorbidities; and are able to provide interventions if suicidality arises. Additionally, extreme diligence is required when cannabinoids are used concomitantly with evidence based pharmacological treatment modalities for management of anxiety due to synergistic sedative effects and drug : herb interactions that can be lethal.

Important concepts to consider:

1. Anxiety is not a single condition but an umbrella term, each subset with unique underlying neurobiological basis requiring specifically-crafted management:

Anxiety (Disorders) per DSM-5:

- a. Generalized Anxiety Disorder
- b. Phobias and Specific phobias
- c. Agoraphobia

- d. Social Anxiety Disorder
- e. Separation Anxiety Disorder

2. Anxiety disorders are highly prevalent - 33.7% of population is affected by an anxiety disorder during their lifetime (highest of all mental illnesses).
3. Anxiety are highly comorbid with other psychiatric and addictive disorders - >90% of individuals with an anxiety disorder have another concurrent psychiatric condition. Depressive disorder is most frequent (76.7%), followed by addictive disorders (35.9%) and bipolar (22.3%)
4. There is evidence for harm (worsening symptoms, increased disease burden, development of suicidality) when whole plant and THC only is used by those with bi- or uni-polar depression
5. Whole plant contains >500 constituents each found in various proportions with significant pharmacodynamics and pharmacokinetic interactions with other psychopharmacological agents
6. American Psychiatric Association – “There is currently no scientific evidence to support the use of cannabis as an effective treatment for any psychiatric illness. Several studies have shown that cannabis use may in fact exacerbate or hasten the onset of psychiatric illnesses. This includes the contribution of cannabis to symptoms of mood disorders, anxiety and psychosis, particularly in young adulthood. Cannabis use is associated with the emergence of mood disorders, particularly symptoms of bipolar disorder, among those with a family history of mood disorder.”
7. In adolescents, regular cannabis use is associated with increased incidence of anxiety disorders as well as increased depression, suicidal ideation, use of other substances and risky behavior.
8. Regular cannabis use is associated with an increased risk of developing a cannabis use disorder (9% of episodic users become dependent, and 25-50% daily users).
9. Acute THC-only administration is dose dependent – low doses anxiolytic while higher induce anxiety. Acute CBD co-administration has mixed findings (Boggs et al 2018)
10. Animal studies show chronic co-administration of CBD and THC; greater anxiety symptoms than induced by THC alone at high doses (Klein et al 2011)
11. National Academy of Sciences (2017): Moderate level of evidence supports that whole plant use is associated with: increased incidence of social anxiety disorder in regular users (also increased risk for developing depressive disorders; increased incidence of suicidal ideation and behavior)

Public comments:

Comments from four people, discussing personal experience, observed experience in a friend or in patients being treated and one from a person from the retail sector. All supported cannabis for anxiety with anecdotes but no study data.

Discussion:

Discussion reflected the points made in the report, specifically noting the need to diagnose the cause of the anxiety and consider specific treatment, the uncertain of response to cannabis and dose-dependence, and the associated risks. The above noted vote was taken to not include anxiety as a qualifying symptom or condition.

OPIOID USE DISORDER (OUD) (HB 366)

Recommendation: Do not approve as a qualifying condition.

Vote: 4-6 on a vote to approve the following motion [edited here for brevity]:

- That OUD not be an indication for therapeutic cannabis certification through the current general therapeutic cannabis certification process.
- That certification for OUD:
 - May be provided as an adjunct in the context of evidence-based MAT by a DATA 2001 waived clinician who is prescribing or authorizing the individual's MAT
 - May be provided by an ABAM, APA or ACGME certified addiction medicine or addiction psychiatry physician who follows the patient regularly, with or without other MAT treatment
 - Can only be used for treatment of symptoms of cravings and/or withdrawal
- That such treatment for OUD must be treated as a clinical trial because the outcomes of the use of cannabis as a treatment or adjunct for OUD are unknown.

Summary of presented reports:

Two draft reports were submitted, one with recommendation that OUD not be approved as a qualifying condition and the other report proposing a restricted approval.

The report opposing approval noted:

1. Cannabidiol (CBD) shows promise in reducing craving for opioids, reducing anxiety associated with withdrawal symptoms and decreasing cognitive and emotional stress vulnerability. Thus a function for CBD in reducing the risk of relapse. CBD has low reinforcing properties with limited abuse potential and may inhibit drug seeking behavior.
2. Conclusions from both animal and human studies demonstrate that THC is a psychoactive compound with rewarding effects and addictive properties. THC increases the use of illicit opioids, can cause significant anxiety in the individual and is not recommended by authoritative individuals nor organizations to be associated with treating opioid use disorder.
3. While cannabis has been used for pain control and has been touted to reduce the use of opioids in pain conditions, thereby ostensibly reducing the risk of developing opioid use disorders, this is not the same as treating opioid use disorder. Currently there are FDA approved medications for opioid use disorder and these show significant reduction in overdose deaths, reduction in HIV and Hep B and C transmission among other therapeutic outcomes. The addition of cannabis in its whole form is controversial and organizations such as the American Society of Addiction Medicine hold a position against promoting cannabis for medical use never mind treatment of OUD.

4. Patients who have a diagnosis of an opioid use disorder have a higher risk of use disorders of other types as well. There have been suggestions that use of cannabis (ie, smoked, THC) increases the risk of use of other addictive substances including opioids. Additionally, treatment strategies for addiction include those that reduce the risk that the patient be using any psychoactive substances and work on managing the illness with behavioral health changes as well as medications.

5. Since the above recommendation would be to have restrictions on certifying for therapeutic cannabis, and limiting the product to CBD only, it is recommended to consider using a current product that is available, Epidiolex, to be prescribed off label.

The report supporting limited approval recommended:

- That pure CBD be available for use in management of opioid withdrawal and as an adjunct to evidence-based interventions for opioid use disorders. (Early studies are promising and to date no harm has been demonstrated with short term use, though it should be noted that long term use has not been studied so effects over time are not known).
 - Possibilities for making CBD available to patients include:
 - Off label prescription of Epidiolex (pure FDA approved & regulated CBD)
 - Over the counter CBD that has been tested and certified as pure CBD
 - Certification to exclusively certify patients for CBD, not THC containing products.
- That OUD not be an indication for therapeutic cannabis certification through the current general therapeutic cannabis certification process.
- That certification
 - May be provided as an adjunct in the context of evidence-based MAT by a DATA 2001 waived clinician who is prescribing or authorizing the individual's MAT
 - May be provided by an ABAM, APA or ACGME certified addiction medicine or addiction psychiatry physician who follows the patient regularly, with or without other MAT treatment
- That such treatment must be treated as a clinical trial because the outcomes of the use of cannabis as a treatment or adjunct for OUD are unknown. To that end:
 - The certifying clinician and/or patient must complete and submit a **quarterly data sheet (TBD)** to DHHS
 - Tracking/analysis of data must be performed
 - Policy may be changed based on clinical trial findings and on evolving scientific literature.

Summary of findings of report supporting approval:

More studies on cannabis and individual cannabinoids are needed to clarify cannabis and cannabinoid actions on opioid reward, opioid misuse, and opioid use disorder. The current evidence on cannabis and opioid misuse/use disorder is somewhat conflicting; however, taken in aggregate, available studies lean towards indicating that cannabis use is associated with greater risk of opioid misuse and poorer functional outcomes. The cannabinoid CBD, and possibly other specific cannabinoids under study, appear to have promise in treatment of OUD. Testimonials from individuals suggest some people with OUD may experience improvement with use of cannabis.

Consideration of cannabis as a potential therapeutic agent in the context of OUD must take into consideration potential risks for misuse and potential compounding of addiction and, if authorized for use in this context, care must appropriately structured to avoid potential harm.

Specific points:

- CBD alone may be helpful in reducing anxiety and craving in early abstinence from opioids in OUD
- Impact of cannabis on retention in OUD treatment is not clear (one study suggests increased retention, one the opposite)
- Cannabis use appears to be associated with higher risk of development of opioid use disorder in the future
- Cannabis use during opioid therapy of pain appears to be associated with increased risk of opioid misuse and/or OUD
- Persons with OUD who also have cannabis use disorder have poorer functional outcomes (homelessness and inpatient hospitalizations) but receive fewer prescriptions for opioids.
- Initially promising epidemiological findings suggesting that therapeutic cannabis availability reduces opioid overdose deaths on a population wide basis have not held up over time.
- Numerous anecdotal reports suggest that a subset of persons find cannabis helpful in recovery from OUD. This could be through palliation of OUD associated symptoms (sleep disturbance, pain, etc) or through direct effects on limbic reward and addiction mechanisms. Future studies might include analysis of the experiences of advocates who have recovered from OUD through use of cannabis.

Public comments:

Two people. One noted that cannabis helped his brother in recovery from OUD. The other noted that cannabis helped her personally in recovery from dysfunctional use of alcohol, cocaine and opioids.

Discussion:

Robust discussion ensued but agreement could not be reached. Approval of CBD alone was considered but the current certification process does not provide for CBD-only certification and most CBD (except Epidiolex) contains some THC. Approval restricted to certain providers was discussed and became the motion but was defeated as noted in the vote above. It is important to note that there are three addiction specialists on the board and they each voted against adding OUD as a qualifying condition at this time. The board looks forward to more data and potentially revisiting this condition in the future.

LYME DISEASE (HB 461)

HB 461 requested Lyme Disease as a qualifying condition but the sponsor wished to broaden it to tick-borne illnesses (TBI).

Recommendation: Do not include as a qualifying condition.

Vote: 2-8 on the recommendation to approve TBI as a qualifying diagnosis.

Summary:

The draft report recommended approval as a free-standing condition with the following rationale:

1. Currently, no evidence-based studies specific to cannabis use with regard to Tickborne Diseases are available - however, the anti-inflammatory, analgesic, anxiolytic and neuroprotective action of cannabis has been well documented, as has its clinical impact on reducing pain, nausea, anxiety, insomnia and discomfort from dermal rashes.
2. Patients with chronic persistent Tickborne Disease infection typically suffer from multiple symptoms including fatigue, impaired cognition ("brain fog"), sleep disorders and pain syndromes. As attested by [public providing comment] (written testimony) as well as noted by some clinicians, many of these symptoms have been reportedly relieved (or significantly reduced) through therapeutic cannabis use.
3. Potential TBI in NH
 - ~ Lyme disease
 - ~ Babesiosis
 - ~ Ehrlichiosis
 - ~ Bartonella
 - ~ STARI
 - ~ Rocky Mountain Spotted Fever
 - ~ Anaplasmosis
 - ~ Relapsing Fever
 - ~ Powassan Virus disease
 - ~ Heartland Virus
4. Tickborne diseases cause multiple symptoms- including:
 - ~ Rash (various rashes dependent upon type of TBD)
 - ~ Fever, chills
 - ~ Diaphoresis
 - ~ Severe headache
 - ~ Insomnia
 - ~ Profound fatigue
 - ~ Muscle & joint pain
 - ~ Anxiety
 - ~ Lymphadenopathy
 - ~ Arthropathies
 - ~ Neuropathic pain
 - ~ Nausea/vomiting/diarrhea
 - ~ Anorexia
 - ~ Seizures
 - ~ Muscular atrophy
 - ~ Numbness in extremities
 - ~ Tremors
5. Due to the number of Tickborne Diseases, multitude of potential symptoms and varying clinical presentation, recommend approval as a free-standing qualifying condition.

Though there are no evidence-based studies specifically regarding cannabis with TBI, the report included many references – some studies referencing specific symptom management with

cannabis (though not in the context of TBI), some professional statements, and statements from others regarding their success with regard to using cannabis to reduce symptom burden and two written responses submitted as part of the public hearing.

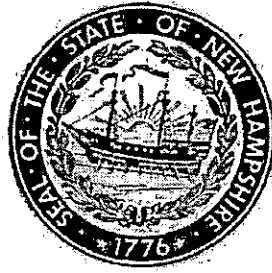
Discussion:

The board noted the lack of any evidence-based studies and expressed concern about approval based only on anecdotal evidence.

It was pointed out that many of the symptoms of TBI are already included as qualifying symptoms in the therapeutic cannabis statute and could be approved using the current statutory language of RSA 126-X:1-IX.(a) (1) "...one or more injuries or conditions that has resulted in one or more qualifying symptoms under subparagraph (2)."

Concern was expressed about people being certified for early-stage TBI rather than receiving appropriate antibiotic treatment.

After discussion, the vote noted above was taken to not include tick-borne illness as a qualifying condition.



**New Hampshire Department of Health and Human Services
Division of Public Health Services
Therapeutic Cannabis Program
2019 Data Report**

Table of Contents

Introduction	1
Therapeutic Cannabis Program Registry Data	2
Qualifying Patients	2
Designated Caregivers	9
Medical Providers	13
Conditions/Symptoms	18
Alternative Treatment Center Annual Reports Summary	20
Qualifying Patient Satisfaction Survey Results	26
Addendum: Alternative Treatment Center Expansion Reports	29
Region 1 (Belknap, Rockingham, and Strafford counties)	30
Region 2 (Hillsborough and Merrimack counties)	33
Current State vs. Future State Comparison	36

Introduction

Pursuant to RSA 126-X:10, the Commissioner of the Department of Health and Human Services shall report annually on the Therapeutic Cannabis Program established under RSA 126-X. The report shall be made to the NH Health and Human Services Oversight Committee established under RSA 126-A:13, the NH Board of Medicine, and the NH Board of Nursing.

The report shall allow for identification of patterns of certification by qualifying patient and designated caregiver, location, age, medical condition, symptom or side effect, and medical provider, and for analysis and research to inform future policy, educational, and clinical decisions.

Therapeutic Cannabis Program (TCP) Registry Data

The data presented in this section reflects data in the Therapeutic Cannabis Program Registry Database as of June 30, 2019. In order to protect the confidentiality of patients and caregivers, where fewer than five individuals are affected with regard to city or town the number of individuals has not been published.

Alternative Treatment Center (ATC) Annual Report Summary

The data presented in this section is a summary of the ATC Annual Reports submitted to the Department pursuant to He-C 402.10(q), showing data from July 1, 2018 to June 30, 2019.

Qualifying Patient Satisfaction Survey Results

The data presented in this section reflects data gathered from qualifying patients between mid-July and mid-September 2019.

Alternative Treatment Center Expansion

The reports in this section support the Therapeutic Cannabis Program's patient needs assessment required by NH Senate Bill 335 (Laws of 2019) for the approval of second dispensary locations to be operated by Temescal Wellness, the licensed ATC serving qualifying patients in NH TCP Region 1 (Belknap, Rockingham, and Strafford counties), and Prime ATC, the licensed ATC serving qualifying patients in NH TCP Region 2 (Hillsborough and Merrimack counties). Temescal Wellness currently operates its regional ATC in Dover, and Prime ATC currently operates its regional ATC in Merrimack. All results in this analysis are relative to registered TCP patients as of June 30, 2019.

Therapeutic Cannabis Program Web Page: <http://www.dhhs.nh.gov/oos/tcp/index.htm>

Therapeutic Cannabis Program Registry Data

Qualifying Patients

	<u># of Patients</u>
Active Qualifying Patients	8302
Minor Patients	15
Patients with a Designated Caregiver	503

Qualifying Patients by Alternative Treatment Center

<u>ATC Name</u>	<u># of Patients</u>
Prime ATC - Merrimack	3238
Sanctuary ATC - Plymouth	2113
Temescal Wellness - Dover	1942
Temescal Wellness - Lebanon	1009
TOTAL	8302

Qualifying Patients by County

<u>County</u>	<u># of Patients</u>	<u>County</u>	<u># of Patients</u>
Belknap	621	Hillsborough	2022
Carroll	538	Merrimack	1032
Cheshire	480	Rockingham	1517
Coos	326	Strafford	803
Grafton	595	Sullivan	368
		TOTAL	8302

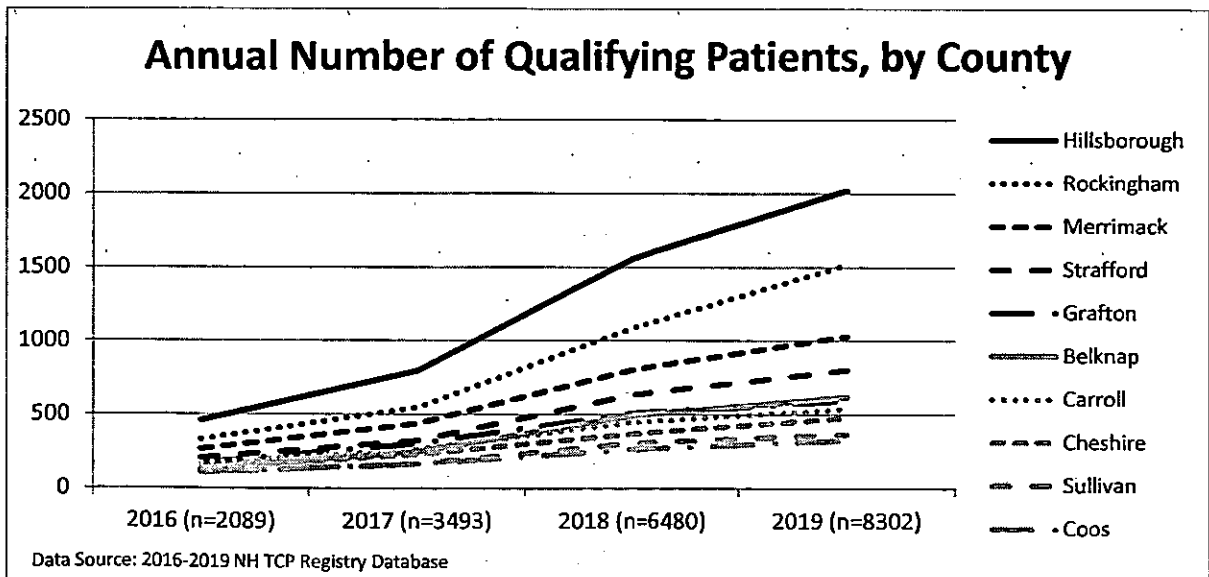


Table 1. Annual number of qualifying patients by county.

Qualifying Patients by City/Town

<u>City/Town</u>	<u># of Patients</u>	<u>City/Town</u>	<u># of Patients</u>
ACWORTH	<5	COLUMBIA	<5
ALBANY	8	CONCORD	272
ALEXANDRIA	16	CONWAY	170
ALLENSTOWN	35	CORNISH	15
ALSTEAD	19	CROYDON	<5
ALTON	49	DALTON	5
AMHERST	74	DANBURY	11
ANDOVER	29	DANVILLE	20
ANTRIM	27	DEERFIELD	30
ASHLAND	24	DEERING	8
ATKINSON	25	DERRY	226
AUBURN	28	DORCHESTER	<5
BARNSTEAD	25	DOVER	184
BARRINGTON	64	DUBLIN	8
BARTLETT	30	DUMMER	<5
BATH	8	DUNBARTON	15
BEDFORD	98	DURHAM	34
BELMONT	71	EAST KINGSTON	9
BENNINGTON	9	EATON	10
BENTON	<5	EFFINGHAM	10
BERLIN	128	ENFIELD	46
BETHLEHEM	16	EPPING	29
BOSCAWEN	21	EPSOM	26
BOW	46	ERROL	<5
BRADFORD	16	EXETER	64
BRENTWOOD	20	FARMINGTON	56
BRIDGEWATER	5	FITZWILLIAM	21
BRISTOL	40	FRANCESTOWN	5
BROOKFIELD	5	FRANCONIA	5
BROOKLINE	17	FRANKLIN	102
CAMPTON	37	FREEDOM	19
CANAAN	32	FREMONT	23
CANDIA	38	GILFORD	82
CANTERBURY	14	GILMANTON	29
CARROLL	10	GILSUM	5
CENTER HARBOR	24	GOFFSTOWN	63
CHARLESTOWN	53	GORHAM	22
CHATHAM	<5	GOSHEN	10
CHESTER	31	GRAFTON	10
CHESTERFIELD	22	GRANTHAM	21
CHICHESTER	13	GREENFIELD	11
CLAREMONT	118	GREENLAND	7
CLARKSVILLE	<5	GREENVILLE	11
COLEBROOK	20	GROTON	<5

Patients by City/Town (cont.)

<u>City/Town</u>	<u># of Patients</u>	<u>City/Town</u>	<u># of Patients</u>
HALES LOCATION	<5	MEREDITH	76
HAMPSTEAD	48	MERRIMACK	165
HAMPTON	71	MIDDLETON	15
HAMPTON FALLS	9	MILAN	18
HANCOCK	15	MILFORD	94
HANOVER	34	MILTON	30
HARRISVILLE	10	MONROE	5
HAVERHILL	26	MONT VERNON	15
HEBRON	7	MOULTONBOROUGH	37
HENNIKER	29	NASHUA	408
HILL	9	NELSON	<5
HILLSBOROUGH	51	NEW BOSTON	35
HINSDALE	22	NEW CASTLE	7
HOLDERNESS	10	NEW DURHAM	28
HOLLIS	36	NEW HAMPTON	26
HOOKSETT	77	NEW IPSWICH	16
HOPKINTON	28	NEW LONDON	35
HUDSON	95	NEWBURY	21
JACKSON	11	NEWFIELDS	5
JAFFREY	39	NEWINGTON	5
JEFFERSON	6	NEWMARKET	36
KEENE	130	NEWPORT	60
KENSINGTON	<5	NEWTON	13
KINGSTON	29	NORTH HAMPTON	27
LACONIA	173	NORTHFIELD	47
LANCASTER	43	NORTHUMBERLAND	16
LANGDON	<5	NORTHWOOD	32
LEBANON	81	NOTTINGHAM	29
LEE	29	ORANGE	<5
LEMPSTER	13	ORFORD	7
LINCOLN	18	OSSIPEE	43
LISBON	8	PELHAM	43
LITCHFIELD	46	PEMBROKE	49
LITTLETON	24	PETERBOROUGH	50
LONDONDERRY	143	PIERMONT	7
LOUDON	42	PITTSBURG	7
LYMAN	<5	PITTSFIELD	28
LYME	10	PLAINFIELD	16
LYNDEBOROUGH	8	PLAISTOW	26
MADBURY	10	PLYMOUTH	41
MADISON	27	PORTSMOUTH	113
MANCHESTER	518	RANDOLPH	<5
MARLBOROUGH	21	RAYMOND	74
MARLOW	5	RICHMOND	7
MASON	5	RINDGE	24







Patients by City/Town (cont.)

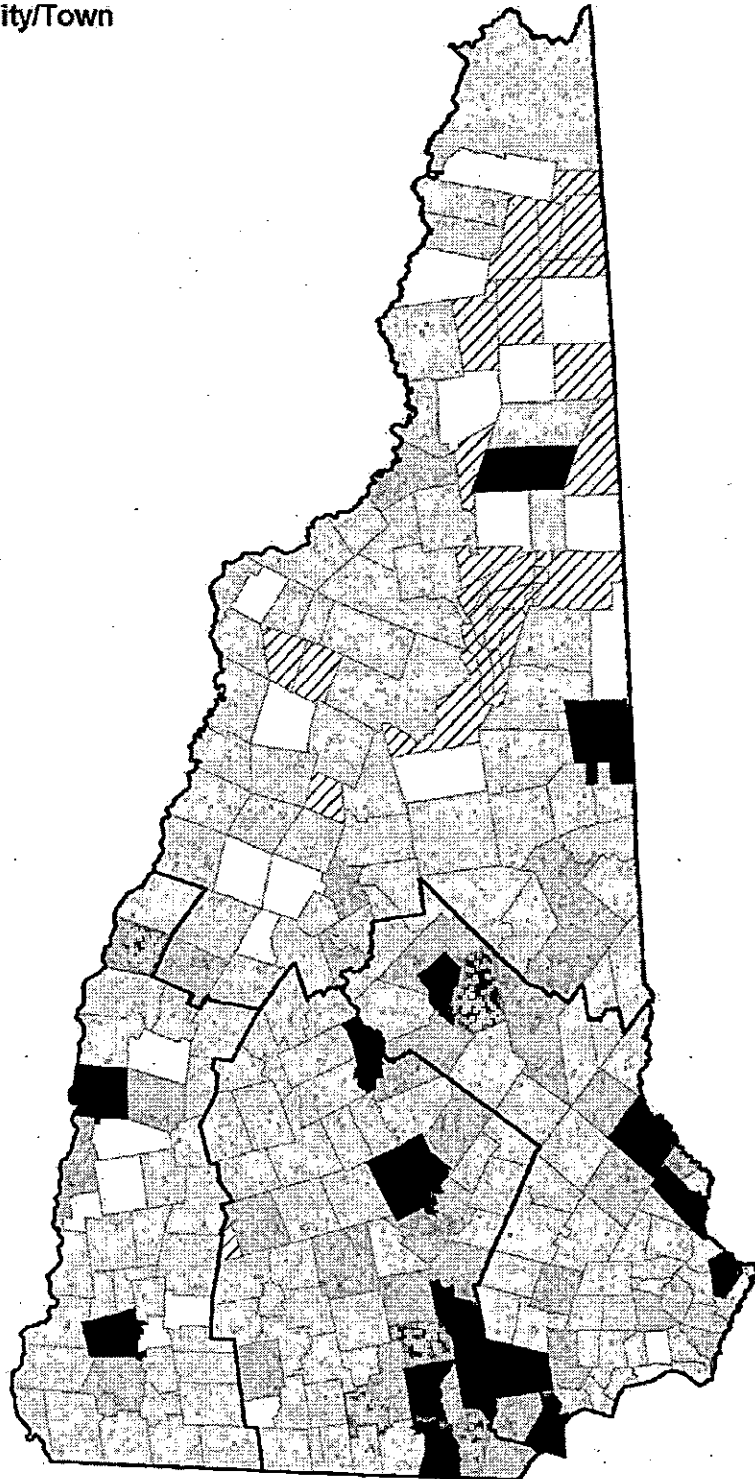
<u>City/Town</u>	<u># of Patients</u>
ROCHESTER	223
ROLLINSFORD	14
ROXBURY	<5
RUMNEY	20
RYE	21
SALEM	113
SALISBURY	20
SANBORNTON	26
SANDOWN	42
SANDWICH	17
SEABROOK	36
SHARON	<5
SHELBURNE	<5
SOMERSWORTH	88
SOUTH HAMPTON	<5
SPRINGFIELD	9
STARK	<5
STEWARTSTOWN	9
STODDARD	8
STRAFFORD	28
STRATFORD	11
STRATHAM	33
SUGAR HILL	5
SULLIVAN	7
SUNAPEE	27
SURRY	5
SUTTON	5
SWANZEY	46
TAMWORTH	32
TEMPLE	11
THORNTON	11
TILTON	40
TROY	17
TUFTONBORO	21
UNITY	<5
WAKEFIELD	37
WALPOLE	19
WARNER	14
WARREN	6
WASHINGTON	13
WATERVILLE VALLEY	<5
WEARE	54
WEBSTER	16
WENTWORTH	7
WESTMORELAND	10

<u>City/Town</u>	<u># of Patients</u>
WHITEFIELD	19
WILMOT	15
WILTON	31
WINCHESTER	27
WINDHAM	48
WOLFEBORO	45
WOODSTOCK	15
TOTAL 8302	

Registered Qualifying Patients

Number of Patients, by City/Town

-  No TCP Patients
-  < 5 Patients
-  5 - 39 Patients
-  40 - 79 Patients
-  80 - 99 Patients
-  100 - 518 Patients



0 10 20 40 Miles

Data Source: 2019 NH TCP Registry Database

Qualifying Patients by Age

<u>Age of Patient</u>	<u># of Patients</u>	<u>Age of Patient</u>	<u># of Patients</u>
3	1	54	201
7	1	55	209
10	1	56	247
11	1	57	251
12	2	58	244
14	3	59	284
15	1	60	282
16	1	61	250
17	4	62	280
18	1	63	238
19	10	64	220
20	18	65	227
21	16	66	196
22	32	67	198
23	31	68	187
24	41	69	183
25	41	70	159
26	44	71	136
27	49	72	119
28	55	73	109
29	62	74	77
30	67	75	58
31	78	76	96
32	87	77	54
33	86	78	56
34	99	79	31
35	102	80	41
36	96	81	32
37	114	82	28
38	101	83	29
39	93	84	26
40	123	85	23
41	116	86	17
42	125	87	17
43	114	88	13
44	129	89	11
45	116	90	11
46	151	91	7
47	153	93	4
48	171	94	3
49	167	95	3
50	177	97	1
51	162	98	4
52	203		
53	195		
			TOTAL 8302

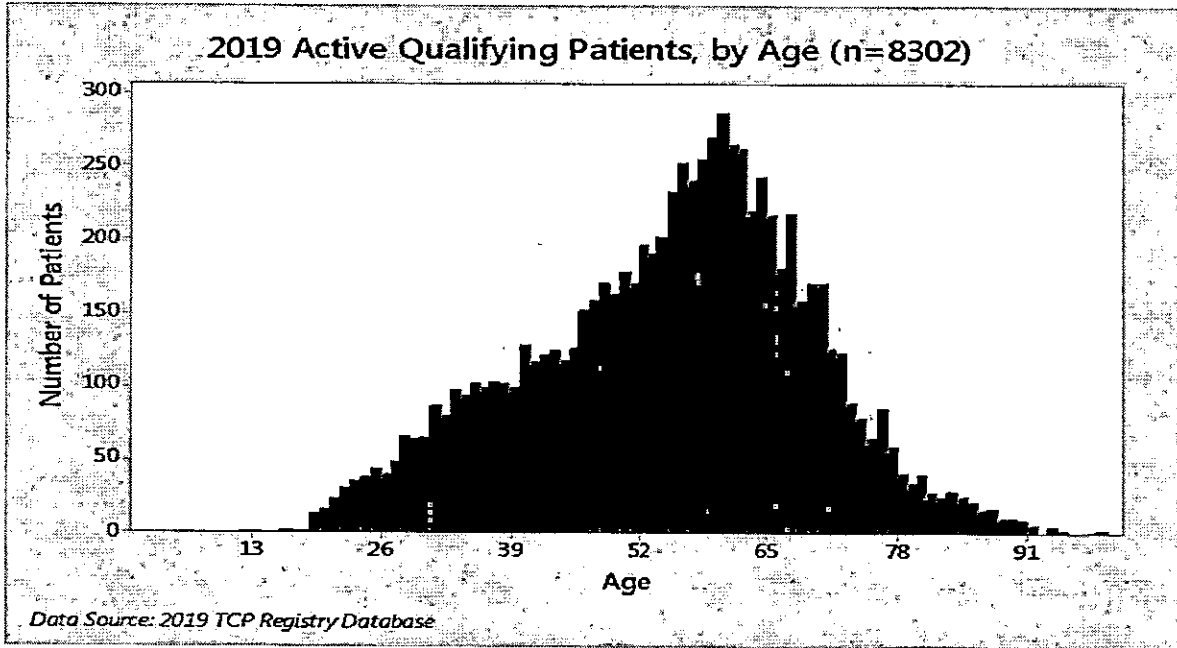


Table 2. Qualifying patients by age.

Designated Caregivers

	<u># of Caregivers</u>
Active Designated Caregivers	480
Caregivers with 1 Qualifying Patient	467
Caregivers with 2–5 Qualifying Patients	13
Caregivers with 6 or more Qualifying Patients	0

Designated Caregivers by NH County

<u>County</u>	<u># of Caregivers</u>
Belknap	40
Carroll	26
Cheshire	24
Coos	14
Grafton	31
Hillsborough	134
Merrimack	65
Rockingham	97
Strafford	34
Sullivan	12

*Three registered caregivers do not reside in NH.

TOTAL 477*

Designated Caregivers by NH City/Town

City/Town	# of Caregivers	City/Town	# of Caregivers
ACWORTH	<5	FARMINGTON	<5
ALBANY	<5	FITZWILLIAM	<5
ALLENSTOWN	<5	FRANKLIN	<5
ALSTEAD	<5	FREEDOM	<5
ALTON	5	FREMONT	<5
AMHERST	6	GILFORD	5
ANDOVER	3	GILMANTON	<5
ATKINSON	<5	GILSUM	<5
AUBURN	<5	GOFFSTOWN	<5
BARNSTEAD	<5	GORHAM	<5
BARRINGTON	<5	GRAFTON	<5
BARTLETT	<5	GREENFIELD	<5
BATH	<5	GREENLAND	<5
BEDFORD	7	HAMPSTEAD	<5
BELMONT	<5	HAMPTON	5
BENNINGTON	<5	HANCOCK	<5
BERLIN	<5	HANOVER	<5
BOW	<5	HARRISVILLE	<5
BRADFORD	<5	HAVERHILL	<5
BRENTWOOD	<5	HILL	<5
BRIDGEWATER	<5	HILLSBOROUGH	<5
BRISTOL	<5	HOLDERNESS	<5
BROOKLINE	5	HOLLIS	<5
CAMPTON	<5	HOOKSETT	<5
CANDIA	6	HOPKINTON	<5
CANTERBURY	<5	HUDSON	6
CENTER HARBOR	<5	JAFFREY	<5
CHARLESTOWN	<5	JEFFERSON	<5
CHESTERFIELD	<5	KEENE	5
CHICHESTER	<5	KINGSTON	<5
CLAREMONT	<5	LACONIA	14
CONCORD	20	LANCASTER	<5
CONWAY	8	LEBANON	<5
DANBURY	<5	LEE	<5
DANVILLE	<5	LINCOLN	<5
DEERFIELD	<5	LITCHFIELD	<5
DERRY	7	LONDONDERRY	10
DOVER	5	LOUDON	<5
DUBLIN	<5	MADISON	<5
DUNBARTON	<5	MANCHESTER	39
DURHAM	<5	MARLBOROUGH	<5
EAST KINGSTON	<5	MARLOW	<5
ENFIELD	<5	MASON	<5
EPPING	<5	MEREDITH	5
EXETER	<5	MERRIMACK	6

Caregivers by City/Town (cont.)

<u>City/Town</u>	<u># of Caregivers</u>	<u>City/Town</u>	<u># of Caregivers</u>
MILAN	<5	SUNAPEE	<5
MILFORD	<5	SURRY	<5
MILTON	<5	SWANZEY	<5
MONROE	<5	TEMPLE	<5
MOULTONBOROUGH	<5	TILTON	<5
NASHUA	27	TUFTONBORO	<5
NELSON	<5	WAKEFIELD	<5
NEW BOSTON	<5	WARREN	<5
NEW DURHAM	<5	WASHINGTON	<5
NEW HAMPTON	<5	WATERVILLE VALLEY	<5
NEW IPSWICH	<5	WEARE	5
NEW LONDON	<5	WEBSTER	<5
NEWINGTON	<5	WHITEFIELD	<5
NEWMARKET	<5	WILMOT	<5
NEWPORT	<5	WINDHAM	5
NEWTON	<5	<u>WOLFEBORO</u>	<u><5</u>
NORTH HAMPTON	<5		
NORTHFIELD	6		
NORTHUMBERLAND	<5		
NORTHWOOD	<5		
NOTTINGHAM	<5		
OSSIPEE	<5		
PELHAM	<5		
PEMBROKE	<5		
PETERBOROUGH	<5		
PIERMONT	<5		
PITTSBURG	<5		
PITTSFIELD	<5		
PLAISTOW	<5		
PLYMOUTH	5		
PORTSMOUTH	5		
RAYMOND	<5		
RINDGE	<5		
ROCHESTER	9		
RUMNEY	<5		
RYE	<5		
SALEM	8		
SANBORNTON	<5		
SANDOWN	<5		
SEABROOK	<5		
SHELBURNE	<5		
SOMERSWORTH	5		
SPRINGFIELD	<5		
STRAFFORD	<5		
STRATHAM	<5		

Three caregivers do not reside in NH. TOTAL 477

Designated Caregivers by Age

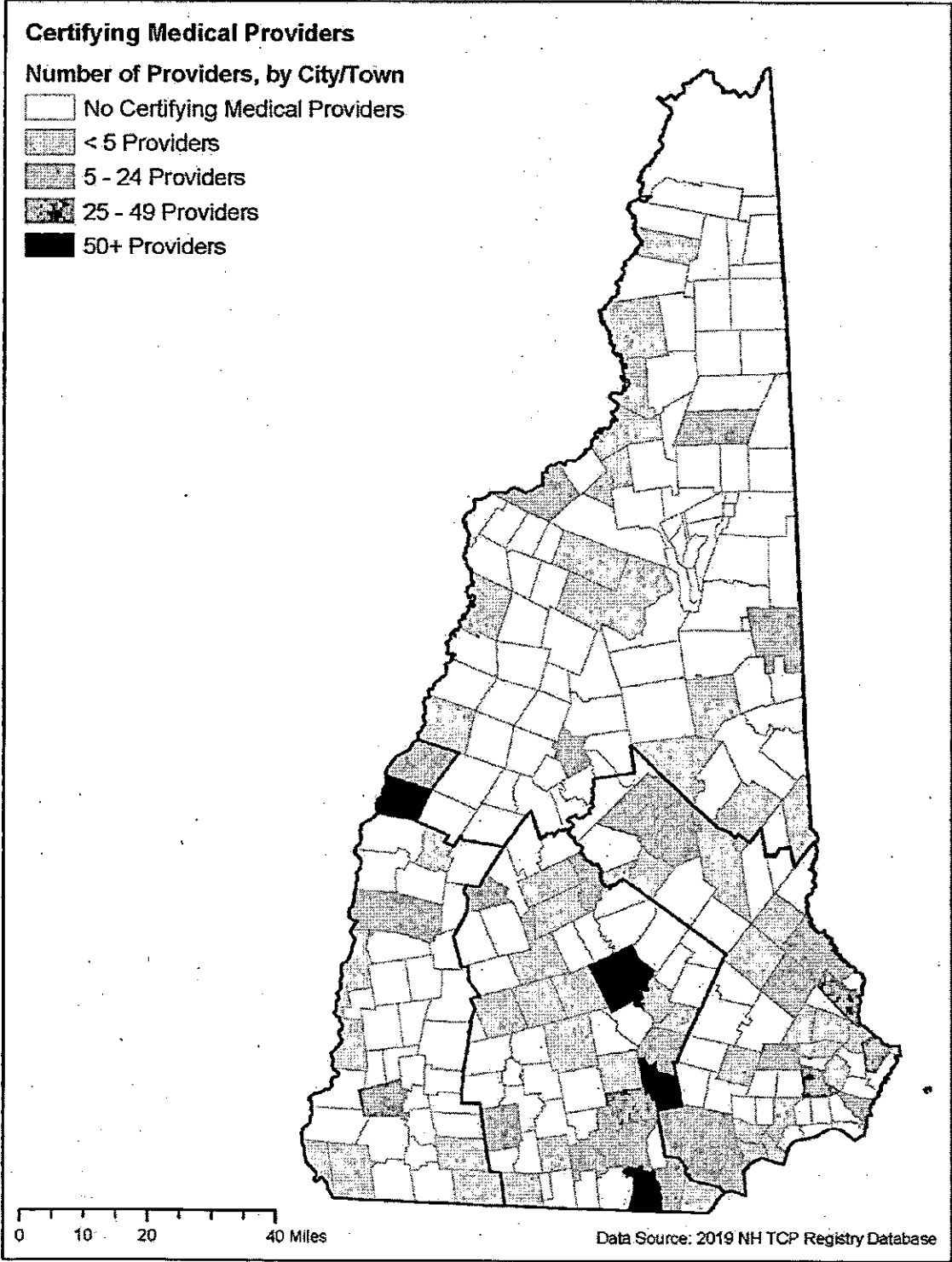
<u>Age of Caregiver</u>	<u># of Caregivers</u>	<u>Age of Caregiver</u>	<u># of Caregivers</u>
22	1	69	11
23	1	70	8
24	1	71	9
25	2	72	10
27	1	73	7
28	2	74	9
29	2	75	10
30	3	76	6
31	4	77	8
32	3	78	5
34	4	79	2
35	4	80	2
36	7	81	2
37	9	82	1
38	3	84	3
39	4	85	1
40	6	86	1
41	4	87	1
42	3	92	1
43	3		
44	8		
45	5		
46	2		
47	8		
48	8		
49	6		
50	17		
51	11		
52	16		
53	4		
54	15		
55	18		
56	14		
57	18		
58	16		
59	12		
60	14		
61	18		
62	15		
63	18		
64	11		
65	14		
66	16		
67	12		
68	20		
			TOTAL 480

Certifying Medical Providers

<u>Provider Type</u>	<u># of Providers</u>	<u># of Patients</u>
APRN	277	2840
Physician	807	5462
TOTAL	1084	8302

Provider Location by New Hampshire County

<u>County</u>	<u>Provider Type</u>	<u># of Providers</u>
Belknap	APRN	9
	Physician	29
	County TOTAL	38
Carroll	APRN	13
	Physician	20
	County TOTAL	33
Cheshire	APRN	18
	Physician	33
	County TOTAL	53
Coos	APRN	9
	Physician	9
	County TOTAL	18
Grafton	APRN	31
	Physician	143
	County TOTAL	174
Hillsborough	APRN	58
	Physician	184
	County TOTAL	242
Merrimack	APRN	37
	Physician	90
	County TOTAL	127
Rockingham	APRN	42
	Physician	124
	County TOTAL	166
Strafford	APRN	29
	Physician	60
	County TOTAL	89
Sullivan	APRN	9
	Physician	11
	County TOTAL	20
TOTAL		960



Out-of-State Providers

State	Provider Type	# of Providers	
Mass	APRN	11	
	Physician	77	
	State TOTAL	88	
Maine	APRN	5	
	Physician	8	
	State TOTAL	13	
Vermont	APRN	6	
	Physician	17	
	State TOTAL	23	
		TOTAL	124

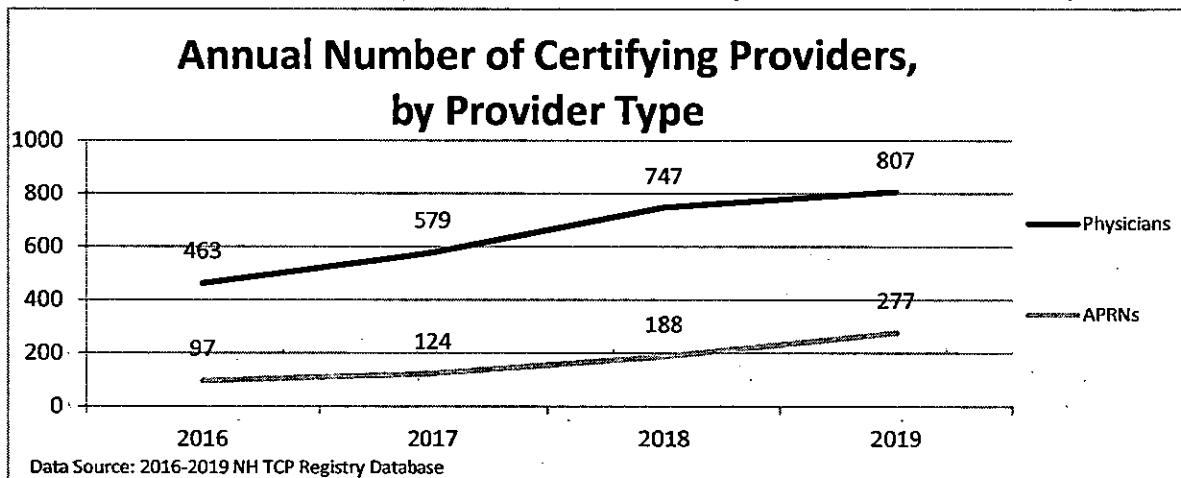


Table 3. Annual number of certifying providers, by provider type (combined in-state and out-of-state).

Physicians by Specialty

<u>Physician Specialty</u>	<u># of Physicians</u>
Addiction Medicine	2
Anesthesiology	5
Cardiac Electrophysiology	1
Clinical Pathology	1
Emergency Medicine	1
Family Practice/Family Medicine	298
Gastroenterology	21
General Practice	4
General Surgery	3
Geriatric Medicine – FP	2
Geriatric Medicine – IM	3
Geriatric Psychiatry	2
Gynecological Oncology	3
Gynecology	1
Head & Neck Surgery	1
Hematology	12
Hematology – Oncology	31
Infectious Disease	7
Internal Medicine	188
Maternal & Fetal Medicine	1
Medical Oncology	21
Musculoskeletal Oncology	1
Neurodevelopmental Disabilities – Neurology	2
Neurological Surgery	1
Neurology	52
Obstetrics & Gynecology	2
Occupational Medicine	1
Ophthalmology	7
Orthopedic Surgery	14
Pain Management	24
Pain Medicine	3
Palliative Medicine	5
Pediatric Surgery – Neurological PCC	1
Pediatrics	13
Physical Medicine & Rehabilitation PS	6
Psychiatry	25
Radiation Oncology	3
Rheumatology	27
Sleep Medicine	1
Spine Surgery	1
Surgical Critical Care	1
Thoracic Surgery	1
Urology	7
Vascular Medicine	1

Number of Patients per Provider

<u>Patients per Provider</u>	<u># of Providers</u>	<u>Patients per Provider</u>	<u># of Providers</u>
1	341	53	1
2	177	59	1
3	89	64	1
4	58	69	1
5	65	77	1
6	46	80	1
7	53	85	1
8	41	89	1
9	24	95	1
10	16	97	1
11	18	100	1
12	15	102	1
13	20	105	1
14	9	113	1
15	15	116	1
16	7	163	1
17	7	236	1
18	5	252	1
19	6	520	1
20	7		
21	6		
22	3		
23	2		
24	3		
25	4		
26	3		
27	1		
28	1		
29	2		
30	2		
31	2		
32	2		
33	3		
35	1		
36	1		
39	2		
42	2		
43	1		
44	1		
45	1		
46	1		
48	2		

Qualifying Medical Conditions

<u>Qualifying Medical Condition</u>	<u># of Patients</u>
Acquired immune deficiency syndrome	32
Alzheimer's disease	23
Amyotrophic lateral sclerosis	17
Cancer	756
Chronic pancreatitis	49
Crohn's disease	161
Ehlers-Danlos syndrome	67
Epilepsy	180
Glaucoma	96
Hepatitis C	33
Lupus	73
Moderate to severe post-traumatic stress disorder	881
Moderate to severe chronic pain	3639
Multiple sclerosis	376
Muscular dystrophy	27
One or more injuries or conditions that has resulted in one or more qualifying symptoms	1773
Parkinson's disease	145
Positive status for human immunodeficiency virus	23
Severe pain that has not responded to treatment	1508
Spinal cord injury or disease	1089
Traumatic brain injury	166
Ulcerative colitis	71

Note: Patients may be certified for more than one qualifying medical condition.

Symptoms/Side Effects

<u>Symptom/Side Effect</u>	<u># of Patients</u>
Agitation of Alzheimer's disease	26
Cachexia	212
Chemotherapy-induced anorexia	198
Constant or severe nausea	569
Elevated intraocular pressure	87
Moderate to severe vomiting	118
Seizures	232
Severe pain that has not responded to treatment	3262
Severe, persistent muscle spasms	1382
Wasting syndrome	72

Note: Patients may be certified for more than one qualifying symptom.

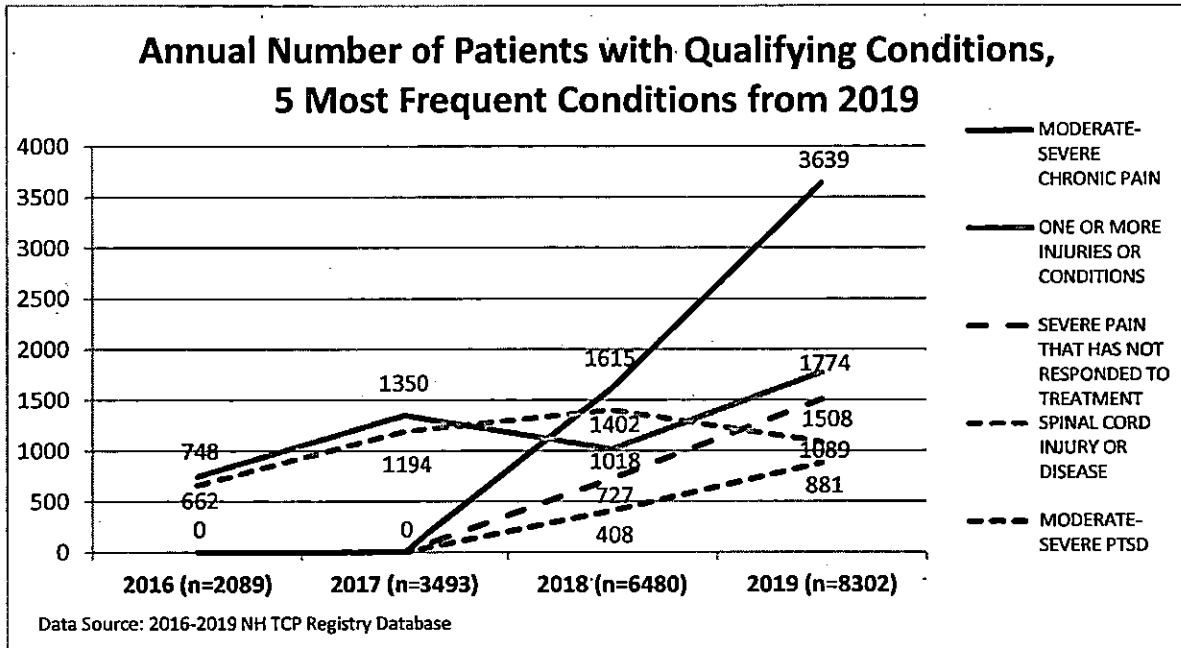


Table 4. Annual number of patients with most frequent qualifying medical conditions in 2019.

Alternative Treatment Center Annual Reports Summary

The data presented in this section is a summary of the ATC Annual Reports submitted to the Department pursuant to He-C 402.10(q), showing data from July 1, 2018 to June 30, 2019.

Qualifying Patients Served

ATC	Patients Served
Prime	3,254
Sanctuary	2,054
Temescal – Dover	1,802
Temescal – Lebanon	941

Strains of Cannabis Dispensed

ATC	Strains of Cannabis Dispensed
Prime	31
Sanctuary	36
Temescal	16

Forms of Prepared Cannabis Dispensed

ATC	Forms of Prepared Cannabis Dispensed
Prime	<ul style="list-style-type: none"> • Cannabis flower • Capsules • Concentrates • Edibles • Oral Syringes • Pre-rolled joints • Suppositories • Tinctures • Topicals • Transdermal Patches • Vaporizer Cartridges
Sanctuary	<ul style="list-style-type: none"> • Cannabis flower • Capsules • Concentrates (shatter, sauce, diamonds, hash, bubble hash, kief) • Edibles (brownies, chocolate bars, cookies, fruit chews, infused beverages, lozenges, peanut butter cups) • Pre-rolled joints • Suppositories • Tinctures • Topicals (massage oil, salves, transdermal gel) • Transdermal patches • Vaporizer cartridges
Temescal	<ul style="list-style-type: none"> • Cannabis flower • Capsules • Concentrates (bubble hash, cold brew concentrate, rosin) • Edibles (chocolate bars, cookies, fruit chews, honey sticks, coconut butter, lozenges) • Powdered drink mix • Pre-rolled joints • Sublingual spray • Tinctures • Topical salve • Transdermal patches • Vaporizer cartridges

Effectiveness of Cannabis

ATC	Patients Providing Effectiveness Responses (% of Total Patients)	Effectiveness
Prime	493 (15%)	Positive: 72% Neutral: 26% Negative: 3%
Sanctuary	331 (16%)	Positive: 98% Neutral: 1% Negative: 1%
Temescal – Dover	46 (3%)	Positive: 98% Neutral: 2% Negative: 0%
Temescal – Lebanon	28 (3%)	Positive: 89% Neutral: 0% Negative: 0%

Education Efforts for Qualifying Patients and Designated Caregivers

Education Methods	Education Topics
<u>Prime</u> <ul style="list-style-type: none"> • Paper handouts • Patient consultation (initial and ongoing) • Patient education handbook • Email newsletters • Website and social media • Product labeling • Patient data tracking • In-store education • Independent support group education (outside of Prime ATC) • Support group education (inside of Prime ATC) • Third-party informational sessions • New patient orientation • Complimentary wellness education 	<u>Prime</u> <ul style="list-style-type: none"> • Dosage instructions • Edible recipe instructions (baked goods, capsules, tinctures) • Strains of cannabis • Routes of administration (including onset and duration of effects) • Titration process (finding optimal dosage) • Cannabinoids and terpenes • Side effects (and strategies to avoid or minimize adverse side effects) • Potential drug interactions • Cannabis abuse disorder (dependence) • Child safety • Avoiding operating a vehicle or heavy machinery (if impairment occurs) • Alternative complimentary therapies
<u>Sanctuary</u> <ul style="list-style-type: none"> • Patient consultations (initial & ongoing) • Patient outreach • Educational literature • Patient handbook • Email newsletter • Website • Patient data tracking • Product labeling • Educational group classes for patients and caregivers 	<u>Sanctuary</u> <ul style="list-style-type: none"> • Strains of cannabis • Routes of administration and potential effects • Cannabinoids and terpenes • Dosing information for different routes of administration • Cannabis preparation and uses • Laws and responsible use • Side effects and strategies to minimize adverse effects • Cannabis use disorder • Tolerance, dependence, and withdrawal

Education Methods	Education Topics
<p><u>Sanctuary (continued)</u></p>	<ul style="list-style-type: none"> • Substance abuse signs and symptoms • Referral information to substance abuse treatment programs • Growing methods and product testing • Child safety tips • Safe transport and storage • Preventing diversion • Program rules and laws • Preparation of cannabis infused products • Classes on how to make your own edibles and how to use different preparations of cannabis
<p><u>Temescal</u></p> <ul style="list-style-type: none"> • Patient outreach • Patient consultations (initial and ongoing) • Patient educational handbook • Email newsletters • Website and social media • Patient data tracking • Product labeling • In-store handouts 	<p><u>Temescal</u></p> <ul style="list-style-type: none"> • What are cannabinoids? (cannabis science) • Introduction to terpenoids • Cannabis categories and classifications • Delivery methods (onset and duration) • Proper dosing • Vaping vs. smoking • Product descriptions • References for clinical journal articles and pertinent organizations and sources • Patient strain and product logs • Using cannabis safely • Potential side effects • Information on addiction • Child safety tips • Preventing youth use • Laws and responsible use/storage • Substance misuse signs and symptoms • Testing limitations

Patient Affordability Programs

ATC	Affordability Program Elements	Patients Enrolled (% of Total Patients)	Total Discount
Prime	<p>Financial Hardship (including SSI, SSDI, Medicaid, and Low Income), Veterans, Seniors (65+)</p> <p>All categories are eligible for 10% discount on all purchases, all the time, including accessories and ancillary products</p>	<p>Financial Hardship: 213 (6%) Veterans: 242 (7%) Seniors: 311 (9%)</p>	\$245,267
Sanctuary	<p>SSI/SSDI: 35% discount on up to ¼ ounce of cannabis every 10 days Medicaid: 30% discount on up to ¼ ounce of cannabis every 10 days Veteran: 10% discount on total purchase</p>	<p>SSDI/SSI: 907 (44%) Medicaid: 172 (8%) Veterans: 251 (12%)</p>	\$402,906
Temescal – Dover	<p>SSI/SSDI/Medicaid/Low-Income: 15% discount all purchases of cannabis or accessories. Veterans: 22% discount all purchases of cannabis or accessories.</p> <p>These discounts can be used every visit, every day for qualifying patients</p>	<p>SSI/SSDI/Medicaid/Low-Income: 1,185 (70%) Veterans: 260 (15%)</p>	\$363,383
Temescal – Lebanon	Same as above.	<p>SSI/SSDI/Medicaid/Low-Income: 499 (53%) Veterans: 82 (9%)</p>	\$223,270

Patient Complaints Received by ATCs

ATC	Nature of Complaint
Prime	<ul style="list-style-type: none"> • Pricing for cannabis flower and CIP products should be lowered • Increased discount for patients enrolled in hardship program • Increased variety of cannabis flower • More consistent variety of cannabis flower • Increased THC content in cannabis flower • Increased variety of CIP products • Increased THC milligram concentration in CIP products per serving • Increased CBD-rich offerings • Additional ATC location for more convenience (reduced driving) • Expanded operating hours
Sanctuary	N/A
Temescal	<ul style="list-style-type: none"> • Complaints persist regarding the reported difficulty and redundancy of the yearly renewal process for a registry ID card, especially from those with chronic conditions or terminal illnesses • Patients continually ask why they cannot visit more than one ATC at one time • Pricing has been a common complaint since opening. Patients look at other legal markets and wonder why NH is so expensive

ATC Recommendations for Program Improvement

ATC	Recommendations for Program Improvement
Prime	<ul style="list-style-type: none"> • Therapeutic Cannabis Program sponsored educational events for medical providers and prospective patients • State sanctioned program awareness notifications and outreach • Monthly meetings or conference calls with ATC stakeholders to discuss potential rule or regulatory changes / updates, and to discuss ways to improve the program as a group
Sanctuary	<ul style="list-style-type: none"> • Adding a virtual gateway for medical providers and patients to help streamline the process of applying to the NH Therapeutic Cannabis Program • Continue to expand the list of qualifying medical conditions and symptoms • Allow patients to visit any ATC in NH • Remove the 3-month waiting period for new, qualifying patients* • Change the 2-ounce limit for patients that need higher doses or who live far away • Eliminate the non-profit requirement, which significantly constrains ATCs' cash flow, programmatic reinvestment, and overall financial management
Temescal	<ul style="list-style-type: none"> • Streamline the patient application process, eliminating the all-paper process and requirement that applicants submit a photo on a CD-ROM* • Allow patients who live beyond a certain distance or travel time to obtain more than 2 ounces in a 10-day period. • Eliminate the non-profit requirement, which significantly constrains ATCs' cash flow, programmatic reinvestment, and overall financial management. The non-profit requirement prevents businesses from exchanging equity for investment as a for-profit entity is allowed to do. Instead, ATCs are limited to taking loans, which creates debt-service, akin to a home mortgage. The loan is repaid each month, at a set amount, regardless of economic conditions. Whereas in the case of a for-profit business, equity is granted for a specific dollar investment and monthly loan payments do not exist, which is why equity is considered "patient." The current structure limits the ATCs' ability to make timely investments in the business (e.g., equipment, technology, people, and patient discounts). If ATCs were not constrained by these "non-profit shackles," Temescal Wellness would have been able to have an even more robust product offering for patients, deeper patient discounts, lower prices, and a larger employee base to accelerate product innovation. We believe that modifying this structure will allow more patients to be served and benefit from the use of therapeutic cannabis.

*Note: SB 88, from the 2019 Legislative Session, removed the requirements for a 3-month provider-patient relationship and for a photo to be submitted as part of the application process.

Charitable Activities

ATC	Efforts/Activities that Contribute to the ATC's Mission as a Charitable Trust to Benefit Qualifying Patients
Prime	<p>Prime ATC strives daily to provide the best care and service to its patient base and the community that surrounds it. The decisions made are intended to benefit Qualifying Patients, and to improve the quality of life that patients can find from incorporating therapeutic cannabis.</p> <p>We take pride in the cleanliness of the facility that is available to patients and want our facility to feel as comfortable and safe as any other upstanding business establishment our Qualifying Patients might frequent. We are advocates for the health of our Qualifying Patients and provide education and classes that speak to complementary therapies, which could assist in symptom management and improved quality of life. All the products we make available to Qualifying Patients continues to be tested prior to packaging or further processing so we can ensure it is safe for consumption and usage. Our education platform is robust and provides above and beyond information to our Qualifying Patients so that the products we make available can be used safely and responsibly, by all Qualifying Patients. Our goal is to aid Qualifying Patients in finding the maximum benefit at the lowest dosage so that cost can remain low, but the efficacy remains. Prime ATC spends a significant amount of time upfront with each Qualifying Patient to provide a well-rounded and robust education platform, so they fully understand how to best incorporate the available products and find their optimal dosage. We follow-up with Qualifying Patients and continue to provide education and guidance until they have found the intended benefit and will stick with them until successful, or until they decide to not include Cannabis any longer.</p> <p>Over the next year, we will be expanding our cultivation footprint so we can increase the supply and variety available to Qualifying Patients. With our ability to take advantage of economy of scale, we also anticipate having the ability to adjust our pricing and lower the cost of certain products. We have confidence that these efforts will only aid in our ability to contribute to our mission and increase the benefits currently available to Qualifying Patients.</p>
Sanctuary	<ul style="list-style-type: none"> • Ongoing food drives to benefit local non-profits • Monetary Donations to patients participating in fundraising activities (Lupus Walk, Crohn's Charity, etc.) • Winnepesaukee Playhouse • Greater Tilton Area Family Resource Center • Patient assistance program
Temescal	<ul style="list-style-type: none"> • Making charitable donations to local non-profit • Staff volunteering at local non-profit • Collecting donations through a drive at the ATC to involve patients • Collecting donations in store for local non-profit <p>Temescal Wellness, Inc. is heavily involved with Hero Pups, a local non-profit that trains and matches service dogs with veterans and first responders.</p>

Qualifying Patient Satisfaction Survey Results

1. Which ATC facility are you registered with?

	Responses	Participation Rate*
Prime ATC - Merrimack	286	12.33%
Sanctuary ATC - Plymouth	210	13.05%
Temescal Wellness – Dover	432	27.39%
Temescal Wellness – Lebanon	346	38.57%
Total	1,274	19.9%

*Note: Participation rate based on the number of patients served at each ATC, as reported by the ATCs on page 20.

2. How would you rate the process of registering for the Therapeutic Cannabis Program with DHHS?

1 (Very Easy)	2	3	4	5 (Very Difficult)
459 (36.03%)	306 (24.02%)	314 (24.65%)	128 (10.05%)	67 (5.26%)

3. How would you rate the convenience of the ATC's days and hours of operation?

1 (Very Convenient)	2	3	4	5 (Very Inconvenient)
691 (54.24%)	347 (27.24%)	164 (12.87%)	38 (2.98%)	34 (2.67%)

4. How would you rate the current selection of the therapeutic cannabis products available?

1 (Sufficient)	2	3	4	5 (Not Sufficient)
644 (50.55%)	279 (21.90%)	214 (16.80%)	87 (6.83%)	50 (3.92%)

5. How would you rate the customer service of the ATC overall?

1 (Excellent)	2	3	4	5 (Very Poor)
1,162 (91.21%)	81 (6.36%)	22 (1.73%)	9 (0.71%)	0 (0.00%)

6. How would you rate the quality of guidance provided by the ATC? (e.g., recommending dosage, routes of administration, strain, etc.)

1 (Very Helpful)	2	3	4	5 (Not Very Helpful)
1,2025 (80.46%)	170 (13.34%)	68 (5.34%)	7 (0.55%)	4 (0.31%)

7. How knowledgeable is the staff at the ATC?

1 (Very Knowledgeable)	2	3	4	5 (Not Knowledgeable)
1,066 (83.67%)	158 (12.40%)	42 (3.30%)	7 (0.55%)	1 (0.08%)

8. Has your wellness and quality of life improved since becoming a patient of the ATC?

1 (Very Much)	2	3	4	5 (Not At All)
809 (63.50%)	317 (24.88%)	121 (9.50%)	20 (1.57%)	7 (0.55%)

9. Have you been able to reduce the amount of prescription medication you take since becoming a patient of the ATC?

Yes, all prescriptions	Yes, most prescriptions	Yes, some prescriptions	No prescriptions
205 (16.09%)	360 (28.26%)	511 (40.11%)	198 (15.54%)

10. How would you rate the ATC overall?

1 (Excellent)	2	3	4	5 (Not Good)
941 (73.86%)	251 (19.70%)	70 (5.49%)	11 (0.86%)	1 (0.08%)

11. NH Legislation may permit qualifying patients and designated caregivers to grow and cultivate cannabis for therapeutic use, as of October 1, 2019. How likely are you, or your caregiver, to grow cannabis for your own use?*

1 (Definitely Won't)	2 (Not Likely)	3 (Might)	4 (Likely)	5 (Definitely Will)
154 (12.09%)	243 (19.07%)	374 (29.36%)	208 (16.33%)	295 (23.16%)

*Note: HB 364 was vetoed by the Governor and a veto override by the NH Legislature was not successful.

12. If you are interested in growing cannabis for your own use, will you: [Note: can select more than one option]

Question	Patients Responding
Grow it yourself?	634 (49.76%)
Ask your designated caregiver to grow it for you?	71 (5.57%)
Reduce the amount of cannabis purchased at your ATC?	203 (15.93%)
Continue to purchase cannabis infused products (e.g. edibles, tinctures, topicals, etc.) at the ATC?	567 (44.51%)
Need access to seeds or seedlings?	538 (42.23%)
I am NOT interested in growing cannabis for therapeutic use.	297 (23.31%)

13. Would you recommend the Therapeutic Cannabis Program to others?

1 (Yes)	2 (No)
1,260 (98.90%)	14 (1.10%)

14. In what areas would you like to see improvement with the Therapeutic Cannabis Program?

Area of Improvement	Patients Commenting on Area of Improvement
1. Cost of product	1,090 (85.56%)
2. Dispensary locations	490 (38.46%)
3. Strain availability	423 (33.20%)
4. Public education	378 (29.67%)
5. Product availability	353 (27.71%)
6. Qualifying medical conditions	236 (18.52%)
7. Program registration process	235 (18.45%)
8. Hours of operation	223 (17.50%)
9. Other issues	63 (4.95%)
10. Dispensary staff knowledge	36 (2.83%)

Addendum
Alternative Treatment Center Expansion Reports
(HB 335, Laws of 2019)

Region 1 – Belknap, Rockingham, and Strafford Counties
Region 2 – Hillsborough and Merrimack Counties

NH Department of Health and Human Services
 Division of Public Health Services – Therapeutic Cannabis Program
 Region 1 ATC Expansion – Dispensary Location Analysis
 September 2019

Introduction

This analysis supports the Therapeutic Cannabis Program’s (TCP) patient needs assessment required by NH House Bill 335 (Laws of 2019) for the approval of a second dispensary location to be operated by Temescal Wellness, the licensed alternative treatment center (ATC) serving qualifying patients in NH TCP Region 1. Temescal operates its regional ATC in Dover, NH in Strafford County. All results in this analysis are relative to TCP patients as of June 30, 2019.

Current State

Region 1 is comprised of three New Hampshire counties (Belknap, Rockingham, and Strafford counties) and is not as rural as NH TCP Regions 3 and 4. There are 2,941 registered qualifying patients residing in 77 municipalities in this region. There are 1,587 patients residing in Region 1 (54.0% of the regional TCP population) who have designated Temescal Dover as their ATC for dispensing therapeutic cannabis.

Based on the Department’s analysis, 684 (43.1%) Temescal patients from Region 1 (n=1,587) experience a *travel burden*:

- 240 (15.1%) patients experience a *significant travel burden*, defined as *both* more than 25 miles in travel distance *and* more than 30 minutes in travel time from their town center *each way* to Dover; and
- 444 (28.0%) patients experience a *limited travel burden*, defined as *either* more than 25 miles in travel distance *or* more than 30 minutes in travel time from their town center *each way* to Dover.

HB 335 authorizes the Department to allow a second dispensary location (satellite dispensary) to be established in Region 1. DHHS has determined that the travel burden on patients has created a need for an additional location for the dispensing of therapeutic cannabis to patients in the region.

Analysis

To assess whether a satellite dispensary would relieve travel burden for qualifying patients, DHHS analyzed geographic access to potential satellite dispensaries in four communities in Region 1 (Alton, Laconia, Salem, and Seabrook). Other factors impacting access also exist, including provider certification and out-of-pocket expenses, but these are not assessed here. Results were determined by finding the drive time and distance from each patient’s town to Dover, and then to the proposed satellite location (using community centers rather than individual addresses), and then estimating changes in patient travel burden with the addition of a satellite dispensary.

Results

Table 1 estimates the relative effectiveness of each satellite location on relieving patient travel burden.

Satellite Location	Patients not experiencing a travel burden	Patients <i>still experiencing</i> a significant travel burden	Patients <i>still experiencing</i> a limited travel burden
Seabrook	75.5% (1,198)	6.4% (101)	18.1% (288)
Salem	66.3% (1,052)	6.7% (107)	27.0% (428)
Alton	67.0% (1,063)	10.8% (171)	22.2% (353)
Laconia	57.8% (917)	11.8% (187)	30.4% (483)

Table 1: Impact estimates of satellite locations on the travel burden for Temescal patients from Region 1 (n=1,587).

Results (continued)

- Laconia and Salem have the greatest potential to relieve the travel burden of TCP patients living in Region 1.
- The Laconia location has the potential to deliver the greatest total savings to patients living in Region 1, by reducing the time travelled (Figure 1) and miles driven (Figure 2) to access their designated ATC.
- The majority of savings with Laconia would come from Region 1 patients residing in Belknap County who currently utilize the Region 4 ATC located in Plymouth, but who would likely switch to Laconia to reduce their travel burden.
- Likewise, the majority of savings with Salem would come from Region 1 patients residing in Rockingham County who currently utilize the Region 2 ATC located in Merrimack, but who would likely switch to more proximal Salem.
- If the analysis removes the assumption that patients will switch from Merrimack or Plymouth, the Seabrook location offers Region 1 Temescal patients the greatest reduction in significant travel burden (time travelled and miles driven), and the greatest overall reduction in travel burden (Figure 3).

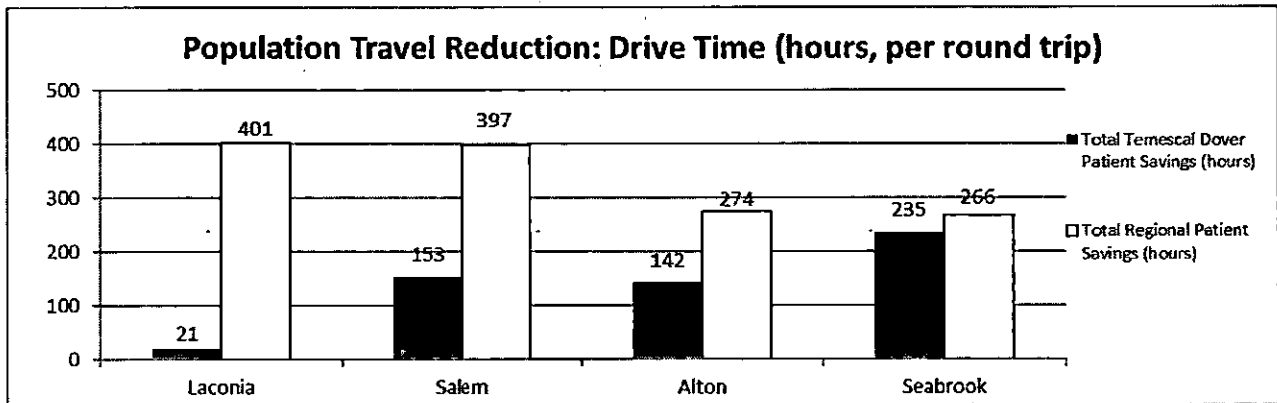


Figure 1: Reductions in per-trip patient drive time associated with each satellite location. Grey bar shows savings for Region 1 patients registered with Temescal Dover. White bar shows savings for all Region 1 patients registered with Temescal Dover or with other ATCs outside Region 1.

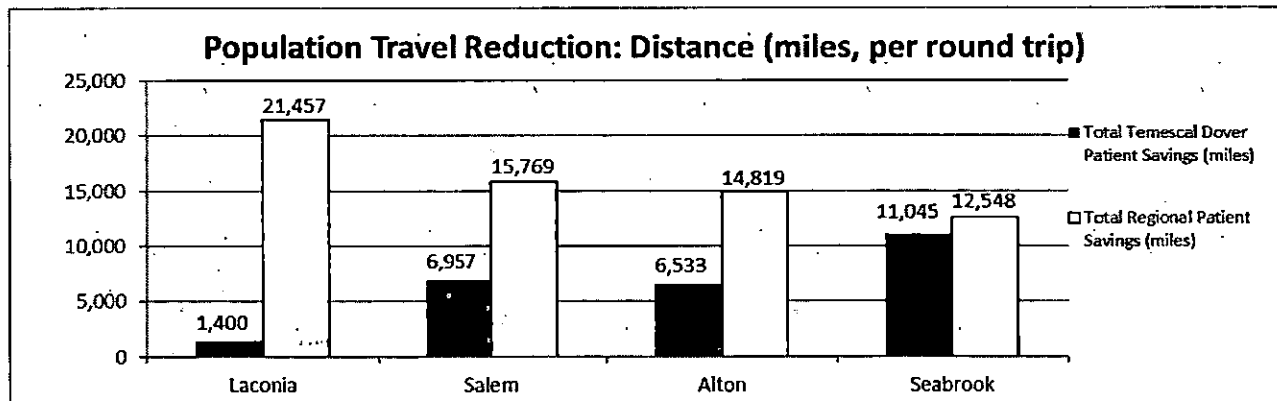


Figure 2: Reductions in per-trip patient miles driven associated with each satellite location. Grey bar shows savings for Region 1 patients registered with Temescal Dover. White bar shows savings for all Region 1 patients registered with Temescal Dover or with other ATCs outside Region 1.

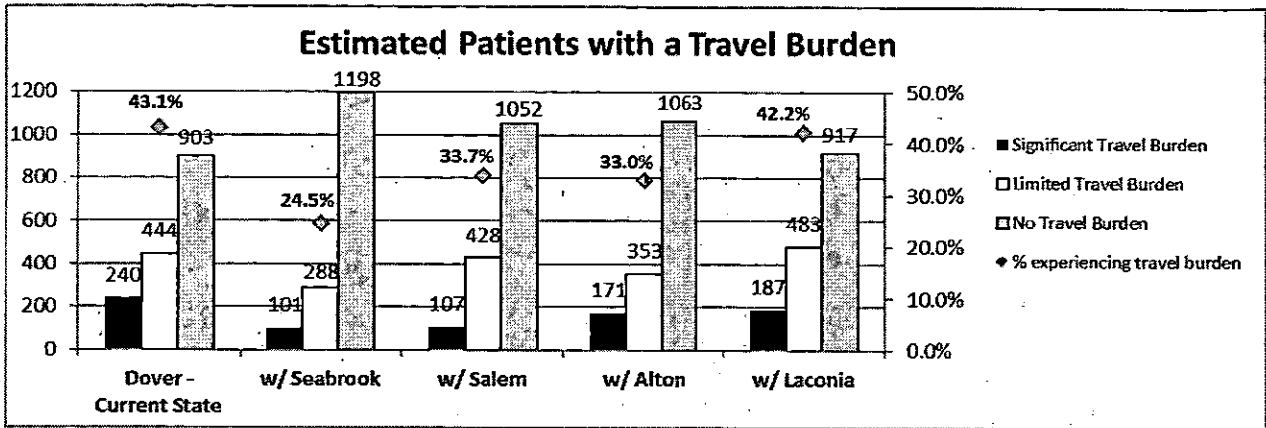


Figure 3: Region 1 Temescal Dover patients experiencing a travel burden to Dover, and changes realized with the addition of the satellite location.

This analysis also used geospatial data to estimate the **current travel burden** in hours and distance travelled *per round trip* by the Region 1 Temescal Dover patient population, and compared it to the **future state travel burden** associated with each of the satellite locations (Figures 4 and 5). Seabrook results in the fewest hours and miles driven by the Region 1 patient population currently utilizing Temescal Dover, saving 235 hours and 11,045 miles per round trip.

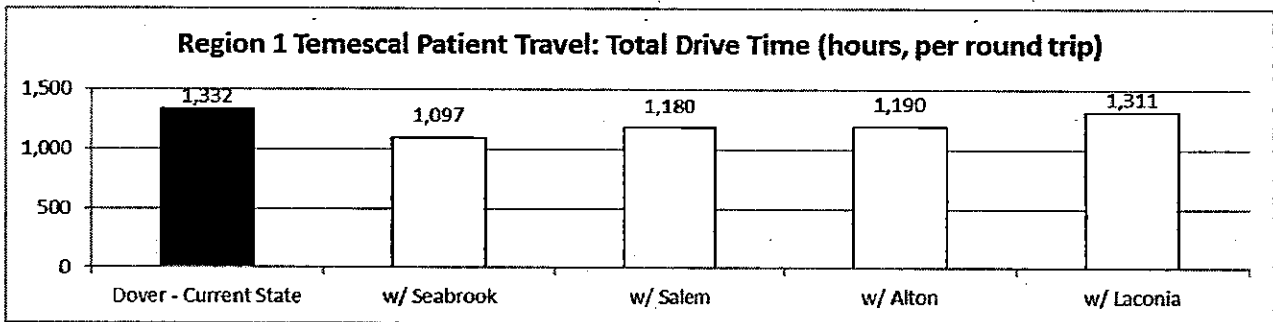


Figure 4: Future state patient hours spent driving per round trip; each satellite location relative to Dover.

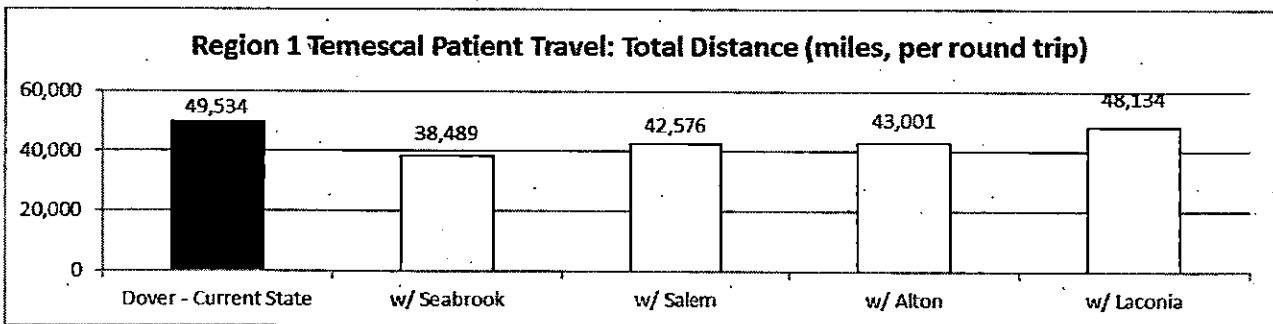


Figure 5: Future state patient miles driven per round trip; each satellite location relative to Dover.

Additional Considerations

All satellite location options considered in this analysis offer significant improvement for relieving Region 1 patients' travel burden. None of the locations, however, completely relieves the travel burden for all patients in the region (see Table 1). This is in part due to the adjustment of the definition of "travel burden" for patients in less rural counties. Despite the potential for Laconia or Salem locations to relieve regional travel burden, these locations would do little to relieve the burden for Region 1 Temescal patients, the majority of whom do not have a reasonable choice among ATCs. A satellite dispensary located in Seabrook likely would have the greatest benefit to these Region 1 Temescal patients, and it would also have the least negative impact on existing ATCs with regard to patients transferring to a closer ATC.

NH Department of Health and Human Services
 Division of Public Health Services – Therapeutic Cannabis Program
 Region 2 ATC Expansion – Dispensary Location Analysis
 September 2019

Introduction

This analysis supports the Therapeutic Cannabis Program’s (TCP) patient needs assessment required by NH House Bill 335 (Laws of 2019) for the approval of a second dispensary location to be operated by Prime ATC, the licensed alternative treatment center (ATC) serving qualifying patients in NH TCP Region 2. Prime operates its regional ATC in Merrimack, NH in Merrimack County. All results in this analysis are relative to TCP patients as of June 30, 2019.

Current State

Region 2 is comprised of two New Hampshire counties (Hillsborough and Merrimack counties) and is not as rural as NH TCP Regions 3 and 4. There are 3,057 registered qualifying patients residing in 65 municipalities in this region. There are 2,281 patients residing in Region 2 (74.6% of the regional TCP population) who have designated Prime ATC as their ATC for dispensing therapeutic cannabis.

Based on the Department’s analysis, 695 (30.5%) Prime patients from Region 2 (n=2,281) experience a *travel burden*:

- 475 (20.8%) patients experience a *significant travel burden*, defined as *both* more than 25 miles in travel distance *and* more than 30 minutes in travel time *each way* from their town center to Merrimack; and
- 220 (9.6%) patients experience a *limited travel burden*, defined as *either* more than 25 miles in travel distance *or* more than 30 minutes in travel time *each way* from their town center to Merrimack.

HB 355 authorizes the Department to allow a second dispensary location (satellite dispensary) to be established in Region 2. DHHS has determined that the travel burden on patients has created a need for an additional location for the dispensing of therapeutic cannabis to patients in the region.

Analysis

To assess whether a satellite dispensary would relieve travel burden for qualifying patients, DHHS analyzed geographic access to potential satellite dispensaries in four communities in Region 2 (Concord, Warner, Hillsborough, and Franklin). Other factors impacting access also exist, including provider certification and out-of-pocket expenses, but these are not assessed here. Results were determined by finding the drive time and distance from each patient’s town to Merrimack, and then to the proposed satellite location (using community centers rather than individual addresses), and then estimating changes in patient travel burden with the addition of a satellite dispensary.

Results

Table 1 estimates the relative effectiveness of each satellite location on relieving patient travel burden.

Satellite Location	Patients not experiencing a travel burden	Patients <i>still experiencing</i> a significant travel burden	Patients <i>still experiencing</i> a limited travel burden
Concord	85.8% (658)	6.6% (32)	7.7% (83)
Warner	74.9% (648)	8.1% (85)	17.0% (40)
Hillsborough	79.4% (602)	12.0% (39)	8.6% (132)
Franklin	77.3% (501)	12.1% (184)	10.7% (88)

Table 1: Impact estimates of satellite locations on the travel burden for Prime patients from Region 2 (n=2,281).

Results (continued)

- Concord has the greatest potential to relieve the travel burden of TCP patients living in Region 2.
- The Concord location also has the potential to deliver the greatest total savings to patients living in Region 2, by reducing the time travelled (Figure 1) and miles driven (Figure 2) to access their designated ATC.
- A Concord satellite location would reduce travel for a number of cities and towns north of Manchester that have larger patient populations and would be more proximal to the satellite.
- A majority of savings with a Concord satellite would come from Region 2 patients residing in Merrimack County who currently utilize the ATC in Region 3, located in Lebanon, or the ATC in Region 4, located in Plymouth, who would likely switch to more proximal Concord.
- If the analysis removes the assumption that patients will switch from Lebanon and Plymouth, the Concord location still offers Region 2 Prime patients the greatest reduction in significant travel burden (time travelled and miles driven), and the greatest overall reduction in travel burden (Figure 3).

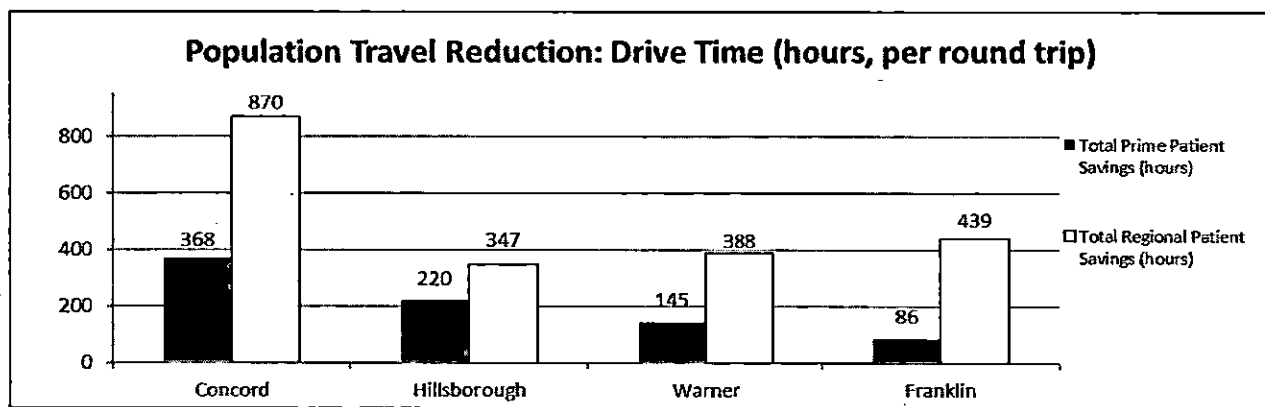


Figure 1: Reductions in per-trip patient drive time associated with each satellite location. Grey bar shows savings for Region 2 patients registered with Prime ATC. White bar shows savings for all Region 2 patients registered with Prime ATC or with other ATCs outside Region 2.

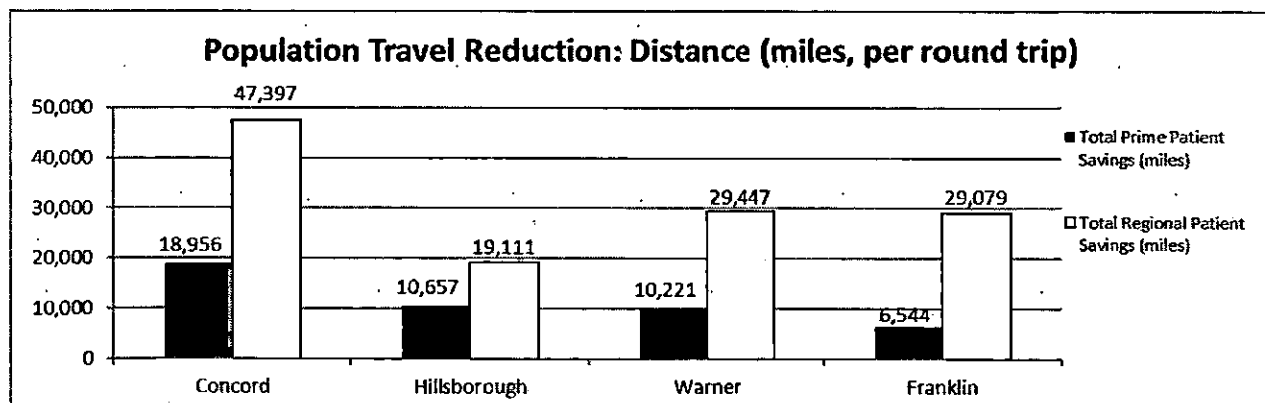


Figure 2: Reductions in per-trip patient miles driven associated with each satellite location. Grey bar shows savings for Region 2 patients registered with Prime ATC. White bar shows savings for all Region 2 patients registered with Prime ATC or with other ATCs outside Region 2.

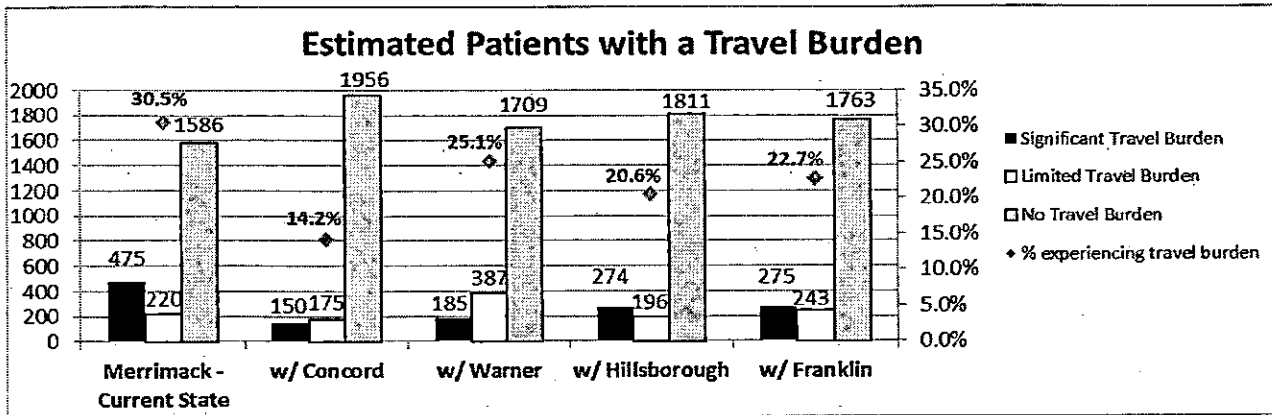


Figure 3: Region 2 Prime patients experiencing a travel burden to Merrimack, and changes realized with the addition of the satellite location.

This analysis also used geospatial data to estimate the **current travel burden** in hours and distance travelled *per round trip* by the Region 2 Prime ATC patient population, and compared it to the **future state travel burden** associated with each of the satellite locations (Figures 4 and 5). Concord results in the fewest hours and miles driven by the Region 2 patient population currently utilizing Prime ATC.

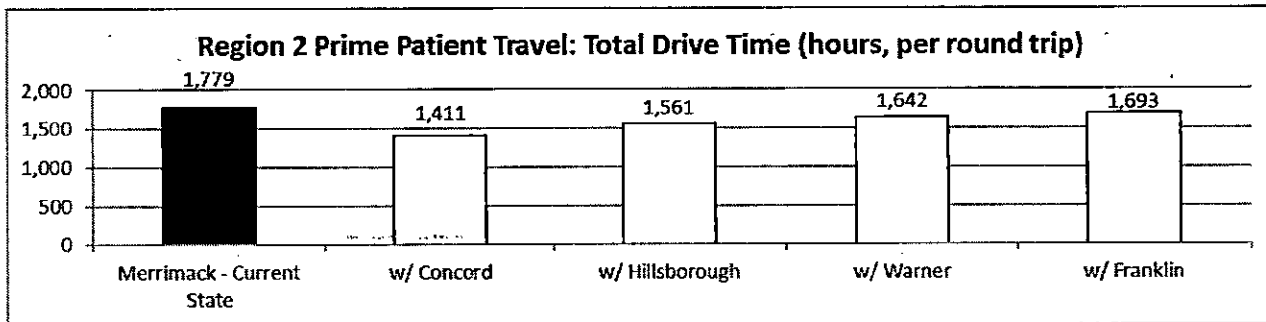


Figure 4: Future state patient hours spent driving per round trip; each satellite location relative to Merrimack.

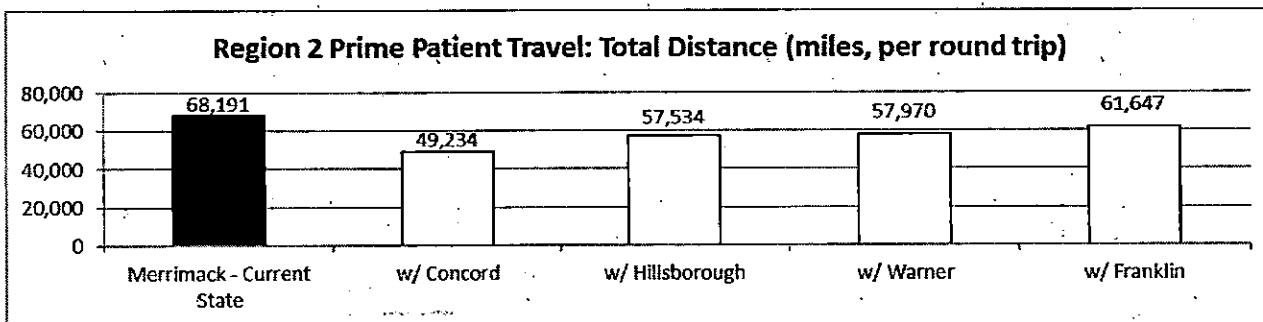


Figure 5: Future state patient miles driven per round trip; each satellite location relative to Merrimack.

Additional Considerations

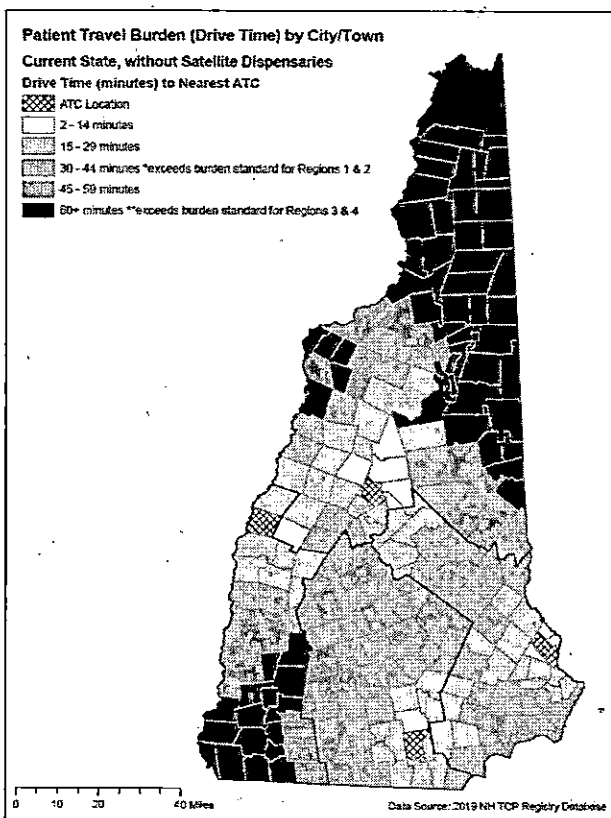
The satellite location options considered in this analysis offer varying degrees of improvement for relieving Region 2 patients' travel burden. None of the locations, however, completely relieves the travel burden for all patients in the region (see Table 1). This is in part due to the adjustment of the definition of "travel burden" for patients in less rural counties, where the communities with patients still experiencing a significant travel burden are close to the rural Sullivan and Cheshire counties. A satellite dispensary located in Concord would have a more significant negative impact on the ATC in Plymouth, with regard to reducing their registered patient populations; however, many of these patients currently face a significant travel burden to access this ATC, which would be eliminated with Concord location.

ATC Expansion

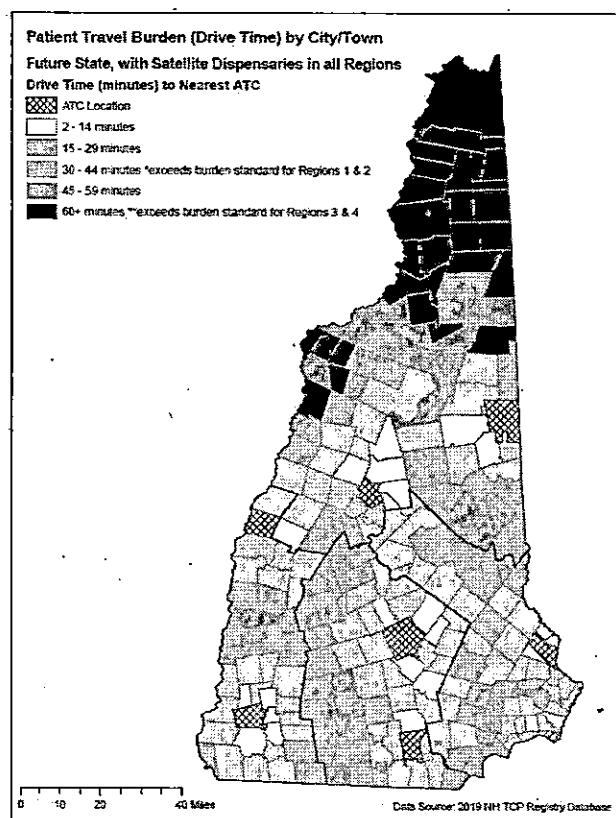
Current State vs. Future State Comparison

Satellite dispensaries located in the towns of Seabrook (Region 1), Concord (Region 2), Keene (Region 3), and Conway (Region 4)* will potentially result in the following improvements for patient access to an alternative treatment center for dispensing therapeutic cannabis:

- Travel burden (as defined in the 2018 DHHS Therapeutic Cannabis Program Data Report, ATC Expansion Reports) is completely eliminated in Region 3.
- Travel burden (as defined in the reports above, and the 2018 DHHS Therapeutic Cannabis Program Data Report, ATC Expansion Reports) is significantly relieved in Regions 1, 2, and 4.
- Drive time reduction, per round trip, for New Hampshire Therapeutic Cannabis Program patients in all four TCP Regions is estimated to be up to 1,349 hours.
- Mileage reduction, per round trip, for New Hampshire Therapeutic Cannabis Program patients in all four TCP Regions is estimated to be up to 70,936 miles.



Map 1: Current-state drive time from town/city to nearest dispensary (without satellite dispensaries).



Map 2: Future-state drive time from town/city to nearest dispensary (with satellite dispensaries in Seabrook, Concord, Keene, and Conway).

*Note: Sanctuary ATC opened a satellite dispensary in Conway, NH on July 6, 2019.

**SB 420, relative to home cultivation of therapeutic cannabis
DHHS Notes**

Department Position: Neutral

Technical / Implementation Issues: None

Qualifying Patient Satisfaction Survey Results (from 2019 Data Report)

- 1,274 survey respondents (representing approximately 15% of registered patients as of June 31, 2019; N=8,302)
- Questions #11 and #12 asked about patients' likelihood of cultivating cannabis for themselves, as well as other related questions. See attached survey results pages.

1 (Definitely Won't)	2 (Not Likely)	3 (Might)	4 (Likely)	5 (Definitely Will)
154 (12.09%)	243 (19.07%)	374 (29.36%)	208 (16.33%)	295 (23.16%)

Qualifying Patient Satisfaction Survey Results

1. Which ATC facility are you registered with?

	Responses	Participation Rate*
Prime ATC - Merrimack	286	12.33%
Sanctuary ATC - Plymouth	210	13.05%
Temescal Wellness – Dover	432	27.39%
Temescal Wellness – Lebanon	346	38.57%
Total	1,274	19.9%

*Note: Participation rate based on the number of patients served at each ATC, as reported by the ATCs on page 20.

2. How would you rate the process of registering for the Therapeutic Cannabis Program with DHHS?

1 (Very Easy)	2	3	4	5 (Very Difficult)
459 (36.03%)	306 (24.02%)	314 (24.65%)	128 (10.05%)	67 (5.26%)

3. How would you rate the convenience of the ATC's days and hours of operation?

1 (Very Convenient)	2	3	4	5 (Very Inconvenient)
691 (54.24%)	347 (27.24%)	164 (12.87%)	38 (2.98%)	34 (2.67%)

4. How would you rate the current selection of the therapeutic cannabis products available?

1 (Sufficient)	2	3	4	5 (Not Sufficient)
644 (50.55%)	279 (21.90%)	214 (16.80%)	87 (6.83%)	50 (3.92%)

5. How would you rate the customer service of the ATC overall?

1 (Excellent)	2	3	4	5 (Very Poor)
1,162 (91.21%)	81 (6.36%)	22 (1.73%)	9 (0.71%)	0 (0.00%)

6. How would you rate the quality of guidance provided by the ATC? (e.g., recommending dosage, routes of administration, strain, etc.)

1 (Very Helpful)	2	3	4	5 (Not Very Helpful)
1,205 (80.46%)	170 (13.34%)	68 (5.34%)	7 (0.55%)	4 (0.31%)

7. How knowledgeable is the staff at the ATC?

1 (Very Knowledgeable)	2	3	4	5 (Not Knowledgeable)
1,066 (83.67%)	158 (12.40%)	42 (3.30%)	7 (0.55%)	1 (0.08%)

8. Has your wellness and quality of life improved since becoming a patient of the ATC?

1 (Very Much)	2	3	4	5 (Not At All)
809 (63.50%)	317 (24.88%)	121 (9.50%)	20 (1.57%)	7 (0.55%)

9. Have you been able to reduce the amount of prescription medication you take since becoming a patient of the ATC?

Yes, all prescriptions	Yes, most prescriptions	Yes, some prescriptions	No prescriptions
205 (16.09%)	360 (28.26%)	511 (40.11%)	198 (15.54%)

10. How would you rate the ATC overall?

1 (Excellent)	2	3	4	5 (Not Good)
941 (73.86%)	251 (19.70%)	70 (5.49%)	11 (0.86%)	1 (0.08%)

11. NH Legislation may permit qualifying patients and designated caregivers to grow and cultivate cannabis for therapeutic use, as of October 1, 2019. How likely are you, or your caregiver, to grow cannabis for your own use?*

1 (Definitely Won't)	2 (Not Likely)	3 (Might)	4 (Likely)	5 (Definitely Will)
154 (12.09%)	243 (19.07%)	374 (29.36%)	208 (16.33%)	295 (23.16%)

*Note: HB 364 was vetoed by the Governor and a veto override by the NH Legislature was not successful.

12. If you are interested in growing cannabis for your own use, will you: [Note: can select more than one option]

Question	Patients Responding
Grow it yourself?	634 (49.76%)
Ask your designated caregiver to grow it for you?	71 (5.57%)
Reduce the amount of cannabis purchased at your ATC?	203 (15.93%)
Continue to purchase cannabis infused products (e.g. edibles, tinctures, topicals, etc.) at the ATC?	567 (44.51%)
Need access to seeds or seedlings?	538 (42.23%)
I am NOT interested in growing cannabis for therapeutic use.	297 (23.31%)

13. Would you recommend the Therapeutic Cannabis Program to others?

1 (Yes)	2 (No)
1,260 (98.90%)	14 (1.10%)

14. In what areas would you like to see improvement with the Therapeutic Cannabis Program?

Area of Improvement	Patients Commenting on Area of Improvement
1. Cost of product	1,090 (85.56%)
2. Dispensary locations	490 (38.46%)
3. Strain availability	423 (33.20%)
4. Public education	378 (29.67%)
5. Product availability	353 (27.71%)
6. Qualifying medical conditions	236 (18.52%)
7. Program registration process	235 (18.45%)
8. Hours of operation	223 (17.50%)
9. Other issues	63 (4.95%)
10. Dispensary staff knowledge	36 (2.83%)



Cannabis Legalization: More Popular than New Hampshire Elected Officials

Results from 2019 polling show that cannabis legalization is more popular in New Hampshire than any of the state's best-known elected officials. According to Granite State Polls published by the University of New Hampshire Survey Center in 2019, 68% of Granite Staters support legalization (50% strongly), while Gov. Chris Sununu has a 59% approval rating.

The crosstabs indicate that more than three-quarters of Democrats and strong majorities of independents and Republicans support legalization. Also, legalization enjoys support from an overwhelming 81% of Granite Staters between the ages of 18 and 49 and a plurality (49%) of those 65 and older:

- **78%** of Democrats in favor (56% strongly), 17% opposed (10% strongly)
- **74%** of independents in favor (60% strongly), 20% opposed (12% strongly)
- **56%** of Republicans in favor (41% strongly), 40% opposed (30% strongly)
- **81%** of 18-34 year olds in favor (72% strongly), 15% opposed (6% strongly)
- **81%** of 35-49 year olds in favor (61% strongly), 16% opposed (11% strongly)
- **59%** of 50-64 year olds in favor (38% strongly), 35% opposed (26% strongly)
- **49%** of 65 and over in favor (28% strongly), 45% opposed (33% strongly)

More Granite Staters support legalization than hold favorable opinions of the state's best-known elected officials:

- Marijuana legalization: 68%¹
- Governor Chris Sununu: 59%²
- New Hampshire Legislature: 55%³
- Senator Jeanne Shaheen: 51%⁴
- Senator Maggie Hassan: 47%⁵
- President Donald Trump: 44%⁶

¹ https://scholars.unh.edu/survey_center_polls/554/

² https://scholars.unh.edu/survey_center_polls/569/

³ https://scholars.unh.edu/survey_center_polls/559/

⁴ https://scholars.unh.edu/survey_center_polls/565/

⁵ *ibid.*

⁶ https://scholars.unh.edu/survey_center_polls/568/

Home Cultivation of Therapeutic Cannabis — Legislative History

Since 2009, the New Hampshire House and Senate have passed multiple bills that would have allowed limited home cultivation by patients and caregivers:

2009 — HB 648 passed the House HHSEA committee 13-7, passed the House 234-138, and passed the Senate 14-10. When then-Governor Lynch threatened to veto the bill if it included home cultivation, a committee of conference rewrote the bill to remove home cultivation and instead allow state-regulated dispensaries. Governor Lynch vetoed the bill anyway. In October, the House voted 240-115 to override the veto, but the override vote fell short of two-thirds in the Senate, 14-10.

2012 — SB 409, which would have allowed up to four mature plants and 12 seedlings for each qualifying patient, passed the Senate in a 13-11 vote and was then approved by the House HHSEA Committee in a 13-4 vote. It passed the House 228-91 but was vetoed by Governor Lynch and the override vote fell short in the Senate, 13-10.

2013 — HB 573 passed the HHSEA Committee in a 14-1 vote and passed the House 286-64. While the bill was being considered by the Senate, then-Governor Hassan indicated that she would veto the bill unless the home cultivation provision and other provisions were removed. The Senate acquiesced and the amended bill passed into law, creating New Hampshire's limited Therapeutic Use of Cannabis Program.

2014 — HB 1622 was approved in a 13-3 vote by the HHSEA Committee. It passed the House 227-73. The Senate referred the bill to interim study.

2016 — HB 593 was found "inexpedient to legislative" in a 9-8 vote by the HHSEA Committee. However, the House overturned the recommendation 148-188 and then voted to pass the bill in a 208-132 vote. The Senate referred the bill to interim study.

2017 — HB 472 was found "inexpedient to legislate" in a 14-7 vote by the HHSEA Committee. The House overturned the committee 213-118 and passed bill in a voice vote. The Senate referred the bill to interim study.

2018 — HB 1476 was recommended "ought to pass" in a 13-8 vote by the HHSEA Committee. The House passed the bill in a voice vote. The Senate referred the bill to interim study.

2019 — HB 364 was recommended "ought to pass" in a 17-4 vote by the HHSEA Committee. The House passed the bill in a voice vote. The Senate HHS Committee passed the bill 3-2, and it passed the Senate 14-10 but was vetoed.

Voting Sheets

Senate Health and Human Services Committee

EXECUTIVE SESSION RECORD

2019-2020 Session

Bill # SB 420

Hearing date:

Executive Session date: 1/28/2020

Motion of: OTP Vote: 3-2

Committee Member	Present	Made by	Second	Yes	No
Sen. Sherman, Chair	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sen. Fuller Clark, Vice Chair	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sen. Chandley	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sen. Bradley	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sen. Gray	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Motion of: _____ Vote: _____

Committee Member	Present	Made by	Second	Yes	No
Sen. Sherman, Chair	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sen. Fuller Clark, Vice Chair	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sen. Chandley	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sen. Bradley	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sen. Gray	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Motion of: _____ Vote: _____

Committee Member	Present	Made by	Second	Yes	No
Sen. Sherman, Chair	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sen. Fuller Clark, Vice Chair	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sen. Chandley	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sen. Bradley	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sen. Gray	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Reported out by: Sen. Sherman

Committee Report

STATE OF NEW HAMPSHIRE
SENATE
REPORT OF THE COMMITTEE

Thursday, January 30, 2020

THE COMMITTEE ON Health and Human Services

to which was referred **SB 420**

AN ACT

permitting qualifying patients and designated
caregivers to cultivate cannabis for therapeutic use.

Having considered the same, the committee recommends that the Bill

OUGHT TO PASS

BY A VOTE OF: 3-2

Senator Tom Sherman
For the Committee

Sonja Caldwell 271-2117

HEALTH AND HUMAN SERVICES

SB 420, permitting qualifying patients and designated caregivers to cultivate cannabis for therapeutic use.

Ought to Pass, Vote 3-2.

Senator Tom Sherman for the committee.

General Court of New Hampshire - Bill Status System

Docket of SB420

Docket Abbreviations

Bill Title: permitting qualifying patients and designated caregivers to cultivate cannabis for therapeutic use.*Official Docket of SB420.:*

Date	Body	Description
1/14/2020	S	Introduced 01/08/2020 and Referred to Health and Human Services; SJ 2
1/16/2020	S	Hearing: 01/22/2020, Room 101, LOB, 01:00 pm; SC 3
1/30/2020	S	Committee Report: Ought to Pass, 02/06/2020; SC 5
2/6/2020	S	Ought to Pass: MA, VV; OT3rdg; 02/06/2020; SJ 3
3/2/2020	H	Introduced 02/20/2020 and referred to Health, Human Services and Elderly Affairs
3/3/2020	H	==CANCELLED== Public Hearing: 03/17/2020 01:00 pm LOB 205
3/3/2020	H	==CANCELLED== Subcommittee Work Session: 03/18/2020 11:00 am LOB 104
3/10/2020	H	==CANCELLED== Executive Session: 03/19/2020 10:00 am LOB 205
6/30/2020	H	Vacated and Laid on Table MA VV 06/30/2020

NH House

NH Senate

Other Referrals

Senate Inventory Checklist for Archives

Bill Number: SB420

Senate Committee: HHS

Please include all documents in the order listed below and indicate the documents which have been included with an "X" beside

Final docket found on Bill Status

Bill Hearing Documents: {Legislative Aides}

- Bill version as it came to the committee
- All Calendar Notices
- Hearing Sign-up sheet(s)
- Prepared testimony, presentations, & other submissions handed in at the public hearing
- Hearing Report
- Revised/Amended Fiscal Notes provided by the Senate Clerk's Office

Committee Action Documents: {Legislative Aides}

All amendments considered in committee (including those not adopted):

___ - amendment # _____ ___ - amendment # _____
___ - amendment # _____ ___ - amendment # _____

- Executive Session Sheet
- Committee Report

Floor Action Documents: {Clerk's Office}

All floor amendments considered by the body during session (only if they are offered to the senate):

___ - amendment # _____ ___ - amendment # _____
___ - amendment # _____ ___ - amendment # _____

Post Floor Action: (if applicable) {Clerk's Office}

- ___ Committee of Conference Report (if signed off by all members. Include any new language proposed by the committee of conference):
- ___ Enrolled Bill Amendment(s)
- ___ Governor's Veto Message

All available versions of the bill: {Clerk's Office}

___ as amended by the senate ___ as amended by the house
___ final version

Completed Committee Report File Delivered to the Senate Clerk's Office By:

Monica Cooper
Committee Aide

7/15/2020
Date

Senate Clerk's Office JM