



# Center for Medical Cannabis

State of Utah  
Center for Medical Cannabis  
November 2023

To: Health and Human Services (HHS) Interim Committee  
From: Richard Oborn, Director, Center for Medical Cannabis  
Subject: 2023 Annual Report for the Center for Medical Cannabis

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## Purpose

The Utah Department of Health and Human Services (DHHS) Center for Medical Cannabis is pleased to submit this annual report as required by [Utah Code Annotated 26B-4-222](#). This annual report provides general information and statistics regarding the Utah medical cannabis program as of August 30, 2023.

## Executive summary

Key program developments from the past year:

- **Number of active medical cannabis card holders increased by 27%.** As of September 30, 2023, there were 72,296 medical cannabis card holders with active status—an increase of 27% during the past year.
- **Number of participating medical providers increased by 13%.** As of September 30, 2023, the DHHS registered 964 qualified medical providers (QMPs). The number of QMPs has increased by 13% during the past year.

The attached table of contents outlines information provided in the subsequent annual report with corresponding page numbers. Comments or questions about the annual report may be sent to the Center for Medical Cannabis at [medicalcannabis@utah.gov](mailto:medicalcannabis@utah.gov).

## Table of contents

<b>1. Background and duties</b>	<b>3</b>
<b>2. Achievements</b>	<b>3</b>
<b>3. Medical cannabis cardholder registrations</b>	<b>5</b>
Table 1. Patient cardholders, caregivers, and guardians as of September 30, 2023	5
Figure 1. Active patient cardholder growth, June 30, 2020 to September 30, 2023	5
Table 2. Patient cardholder demographics by age as of September 30, 2023	6
Table 3. Patient cardholders by county of residence as of September 30, 2023	7
Table 4. Patient cardholders by medical conditions as of September 30, 2023	8
<b>4. Compassionate Use Board</b>	<b>9</b>
Table 5. Compassionate Use Board approvals and denials, past 12 months	9
Table 6. Medical conditions for which petitions were approved or denied	10
<b>5. University of Utah Center for Medical Cannabis Research</b>	<b>11</b>
Table 7. University of Utah Center for Medical Cannabis Research Current Budget FY24	13
Table 8. University of Utah Center for Medical Cannabis Research Proposed Budget FY25	13
<b>6. Qualified medical providers</b>	<b>15</b>
Table 9. Qualified medical provider (QMP) office locations by county as of September 30, 2023	15
Figure 2. Qualified medical provider (QMP) totals as of September 30, 2023	16
Table 11. Qualified medical providers (QMPs) by DOPL license type as of September 30, 2023	16
<b>7. Medical cannabis pharmacies</b>	<b>17</b>
Table 12. Medical cannabis pharmacy licenses and opening dates	17
Table 13. Medical cannabis pharmacy employee totals as of September 30, 2023	17
<b>8. Center for Medical Cannabis Operations</b>	
Table 14. Compliance rates for completed audits as of September 30, 2023	18
<b>9. Center for Medical Cannabis expenses and revenues</b>	<b>19</b>
Table 15. Center for Medical Cannabis expenses—FY 2023 actual and FY 2024 projected	19
Table 16. Center for Medical Cannabis revenues—FY 2023 actual and FY 2024 projected	19
<b>Appendix A . Compassionate Use Board Member Bios</b>	<b>20</b>

## 1. Background and duties

On November 6, 2018, Utah voters approved Proposition 2, which legalized the use of medical cannabis in Utah for qualifying patients. Since its passage, the [Utah Code 26B-4-2](#) has been amended multiple times by the Utah lawmakers. [Utah Code 26B-4-2](#) designates DHHS as the state agency responsible for registering medical providers and issuing medical cannabis cards to qualifying patients. Qualifying patients first legally purchased medical cannabis in Utah on March 2, 2020.

The Center for Medical Cannabis performs the department's duties under [Utah Code 26B-4-2](#). The department's responsibilities include the following:

- Registration of medical cannabis cardholders (patients, guardians, and caregivers), qualified medical providers, and pharmacy medical providers;
- Establishment and enforcement of various administrative rules regulating the medical cannabis industry;
- Inspection, audit, and investigation of complaints filed against qualified medical providers and pharmacy medical providers;
- Selection and oversight of vendors responsible for the medical cannabis software used to run the electronic verification system (EVS) and inventory control system (ICS); and
- Administrative support of the Compassionate Use Board, the Cannabis Research Review Board (formally known as the Cannabinoid Product Board), and the Medical Cannabis Policy Advisory Board as they perform their duties under the Utah code.

## 2. Achievements

Key achievements during the past year include the following:

- **Began replacing the state's medical cannabis software system with a new and improved system.** The Center for Medical Cannabis, the Utah Department of Agriculture and Food (UDAF), and the Utah Department of Technology Services (DTS) began a project to replace the state's medical cannabis software system with a new system built on the Salesforce software platform. After reviewing bids submitted by multiple state vendors, Applications Software Technology (AST) was selected to complete the system configuration. The new system is on track to go live during the 2nd quarter of 2024.
- **Awarded the University of Utah with funding for a research project.** In 2022, [HB 02](#) granted the Department of Health and Human Services, Center for Medical Cannabis, \$538,000 to evaluate the program from the patient's perspective. In January 2023, the contract agreement was finalized with [Dr. Adam Gordon](#) and his team from the University of Utah. The university team named the project [Study of Utahns' Beliefs and Life Experiences with Integrative Medicine \(SUBLIME\)](#). The University of Utah Internal Review Board has

approved the study, and the patient recruitment process began in June 2023.

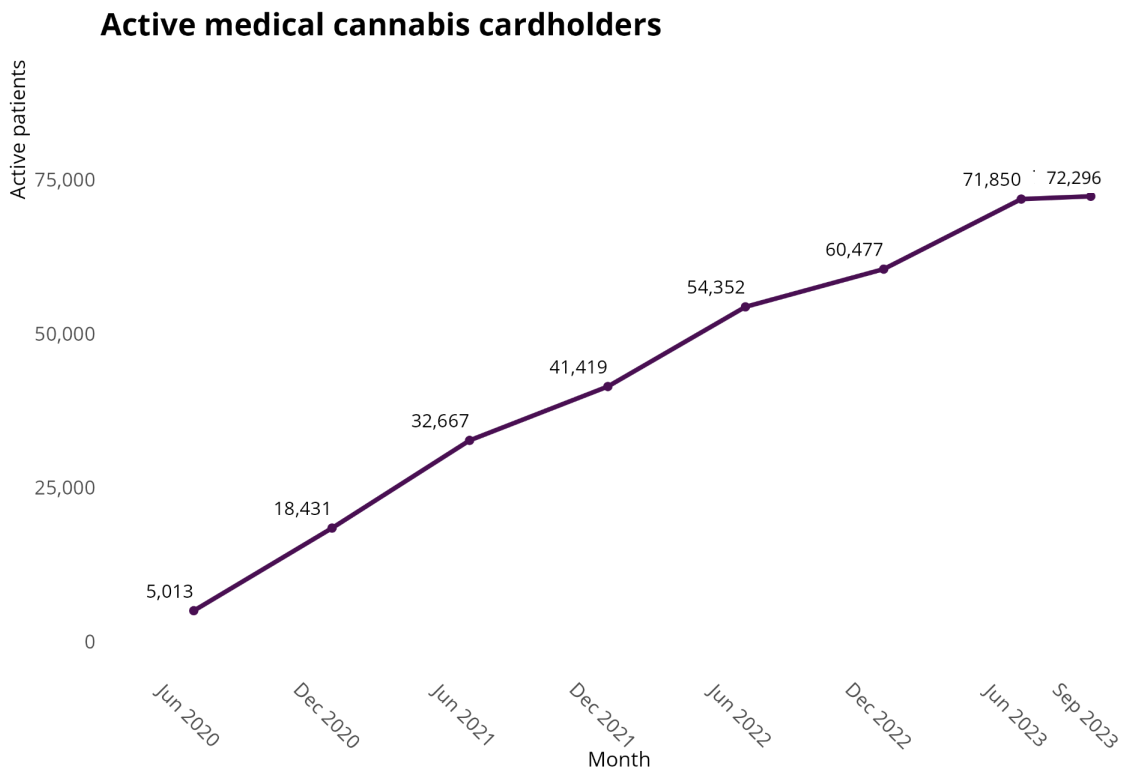
- **Launched the University of Utah Center for Medical Cannabis Research.** In 2023, [HB 230](#) established the Center for Medical Cannabis Research at the University of Utah. The university was granted a one-time payment of \$650,000 from the DHHS [Qualified Patient Enterprise Fund](#). The bill also requires DHHS to work with the center to create guidance on medical cannabis use.
- **Extended the medical cannabis card issuance period from 6 months to 1 year.** The default expiration date for patient cards has been increased from 6 months to 1 year. When a patient's QMP authorizes the 1-year card, the patient pays for fewer appointments and card registration fees. A medical provider may still specify a shorter card issuance period if needed.
- **Increased the patient limit for QMPs.** The medical provider's patient cap was increased from 275 or 600 patients to 1.5% of the total number of registered medical cannabis patient cardholders, which is 1,092 as of October 1, 2023. The purpose of allowing the increase was to decrease patient costs, reduce clinic turnover, and provide patients with better continuity of care.
- **Added the ability for the Center for Medical Cannabis customer service staff to process patient payments by phone.** This allows the caller to be assisted in one interaction instead of placing them on a list to be helped by the finance team. We have processed over 1,000 payments by phone this year.
- **Created a Center for Medical Cannabis operations team.** An operations team was created in July 2023 to draft rules and policies and audit for adherence to laws and policies.
- **Launched the Medical Cannabis Policy Advisory Board.** Pursuant to [HB 72](#), the Center for Medical Cannabis worked with the Utah Department of Agriculture and Food to create a 9-member Medical Cannabis Policy Advisory Board staffed by DHHS. The board is composed of a medical provider, medical researcher, patient advocate, medical cannabis card holder, representatives of the cannabis industry, law enforcement, and a member of the public. The board held its first meeting in July 2023 and has met every month since.
- **Adjusted card requirements for end-of-life patients.** The Center for Medical Cannabis has made 2 significant changes to help patients nearing the end of their lives qualify for a medical cannabis card under [SB 137](#). First, individuals residing in certain care facilities, those in hospice care, or those with a terminal illness can now submit a government-issued photo identification that has expired for over 6 months as part of their medical cannabis card application. Second, these patients can now complete their initial medical cannabis consultation virtually, unlike all other patients who must do it in person.

### 3. Medical cannabis cardholder registrations

Table 1. Patient cardholders, caregivers, and guardians as of September 30, 2023.

<b>122,225</b> initial applications filed.	The number of initial applications filed for medical cannabis cards (March 2020 to September 30, 2023).
<b>72,296</b> active resident patient cardholders.	The number of resident patients with an active medical cannabis card as of September 30, 2023.
<b>2,195</b> non-resident patient cardholders.	The number of non-resident patients who have received temporary medical cannabis cards as of September 30, 2023.
<b>400</b> caregiver cardholders.	The number of caregiver cardholders with an active medical cannabis card as of September 30, 2023.
<b>51</b> guardian cardholders.	The number of guardian cardholders with an active medical cannabis card as of September 30, 2023.
<b>78,940</b> unique renewal applications.	The number of unique renewal applications filed for medical cannabis cards (March 2, 2020, to September 30, 2023).
<b>1</b> medical cannabis card revoked.	The number of medical cannabis cards revoked by the DHHS (March 2, 2020 to September 30, 2023).

Figure 1. Active patient cardholder growth, June 30, 2020 to September 30, 2023.



**Table 2. Patient cardholder demographics by age as of September 30, 2023.**

<b>Patient age</b>	<b>Number of patients</b>	<b>Percentage of total</b>
13 and younger*	29	<1%
14-17*	19	<1%
18-20	67	<1%
21-30	15,281	21%
31-40	19,493	27%
41-50	15,853	22%
51-60	9,520	13%
61-70	8,062	11%
71 and older	3,972	6%
<b>Total</b>	<b>72,296</b>	<b>100%</b>

\*Minors under age 18 require a guardian who has obtained a medical cannabis guardian card.

**Table 3. Patient cardholders by county of residence as of September 30, 2023.**

<b>County</b>	<b>Number of patients</b>	<b>Percentage of Total Cardholders</b>
Beaver	124	<1%
Box Elder	1,489	2%
Cache	2,956	4%
Carbon	761	1%
Daggett	16	<1%
Davis	8,182	11%
Duchesne	229	<1%
Emery	248	<1%
Garfield	91	<1%
Grand	113	<1%
Iron	1,137	2%
Juab	208	<1%
Kane	78	<1%
Millard	190	<1%
Morgan	190	<1%
Other	99	<1%
Piute	21	<1%
Rich	42	<1%
Salt Lake	29,332	41%
San Juan	39	<1%
Sanpete	435	<1%
Sevier	255	<1%
Summit	1,274	2%
Tooele	1,333	2%
Uintah	295	<1%
Utah	11,922	16%
Wasatch	719	<1%
Washington	2,974	4%
Wayne	13	<1%
Weber	7,531	10%
<b>Total</b>	<b>72,296</b>	<b>100%</b>

**Table 4. Patient cardholders by medical conditions as of September 30, 2023.**

<b>Medical condition</b>	<b>Number of patients</b>	<b>Percentage of Total Cardholders</b>
AIDS	10	<1%
ALS	12	<1%
Alzheimer's disease	59	<1%
Autism	394	<1%
Cachexia	48	<1%
Cancer	1,354	2%
Crohn's disease	622	1%
Debilitating seizures	114	<1%
Epilepsy	661	<1%
HIV	224	<1%
Hospice care	77	<1%
MS	767	1%
Nausea	2,073	3%
Other	18	<1%
Pain - acute (30 days only)	94	<1%
Pain - persistent	56,705	78%
Persistent muscle spasms	645	<1%
PTSD	7,813	11%
Rare condition	193	<1%
Terminal illness	59	<1%
Ulcerative colitis	354	<1%
<b>Total</b>	<b>72,296</b>	<b>100%</b>

#### 4. Compassionate Use Board

Utah law requires all medical cannabis card applications from individuals under age 21 to include a petition for the board to review. An individual without a medical condition specified as a qualifying condition in [Utah Code 26B-4-213\(2\)\(C\)](#) shall submit a petition to the Compassionate Use Board (CUB). After reviewing each petition, the board recommends approving or denying each complete petition to the DHHS Center for Medical Cannabis. The DHHS Center for Medical Cannabis staff reviews all patient submissions within 90 days of receipt and will approve or deny each card petition, following the board’s recommendations. If the petition is approved, the patient will receive a medical cannabis card.

[Utah Code 26B-1-421](#) specifies that the board (see Appendix A) shall submit an annual report to the Health and Human Services Interim Committee by November 1 of each year. The report shall include the number of petitions approved by the board during the past year and the types of reviewed medical conditions.

#### Petition outcomes

The following tables report the number of petitions approved or denied by the board at meetings held between October 2022 and September 2023 and the types of medical conditions for which the board approved petitions.

**Table 5. Compassionate Use Board petition approvals and denials, past 12 months.**

	Approvals		Denials	
	Under 21 years of age	Over 21 years of age	Under 21 years of age	Over 21 years of age
<b>October 2022</b>	10	0	0	0
<b>November 2022</b>	8	0	0	0
<b>December 2022</b>	8	0	0	0
<b>January 2023</b>	4	0	0	0
<b>February 2023</b>	10	0	0	0
<b>March 2023</b>	1	0	0	0
<b>April 2023</b>	5	0	3	0
<b>May 2023</b>	4	0	1	0
<b>June 2023</b>	4	0	0	0
<b>July 2023</b>	1	0	0	0
<b>August 2023</b>	6	0	0	0
<b>September 2023</b>	4	0	1	0
<b>Total</b>	<b>65</b>	<b>0</b>	<b>5</b>	<b>0</b>

Table 6. Medical conditions for which petitions were approved or denied.

Medical condition	# Approved	# Denied
Anxiety*	2	0
Autism	8	0
Cachexia	1	0
Cancer	5	0
Chronic pain	22	1
Epilepsy	2	0
Nausea	3	0
Persistent muscle spasms	2	0
PTSD	18	3
Rare condition	1	0
Schizoaffective disorder*	0	1
Treatment-resistant depression*	1	0
<b>Total</b>	<b>65</b>	<b>5</b>

\*Indicates a condition not listed in [Utah Code 26B-4-203](#) as qualifying.

## 5. University of Utah Center for Medical Cannabis Research

The responsibilities and objectives of the research center are laid out in [HB 230](#) and [Utah Code 53B-17-1402](#). The primary purpose of the research center is to secure funding and oversee research on the health effects of cannabis. Additionally, it will be responsible for analyzing cannabis literature, updating medical professionals on new research findings, providing legal advice to researchers on the impact of cannabis research, maintaining a comprehensive database of published scientific reports on medical cannabis, and carrying out various other important cannabis research-related duties specified in the statute.

### Stakeholders

The Center for Medical Cannabis Research (CMCR) at the University of Utah will create partnerships spanning multiple areas of the medical cannabis research landscape, including, but not limited to, academic researchers across Utah, external research experts, the University of Utah Senior Vice President for Health Sciences (SVPHS) research unit staff, public health advisors, outside organizations, and community collaborators.

### Governance

The Center for Medical Cannabis Research will comprise a layered governance structure. Daily operations for the center will be managed by the interim director, Gerald Cochran, MSW, Ph.D, professor of Internal Medicine and director of research for the Division of Epidemiology; and by the Center for Medical Cannabis Research senior manager, Valerie Ahanonu, BS.

A steering committee has been identified to aid in and oversee the strategic development and implementation of the center's goals. The steering committee includes:

- Bruce Bugbee, Ph.D., Crop Physiology Laboratory director, and Crop Physiology professor at the Utah State University Department of Plants, Soils, and Climate.
- Misty Smith, Ph.D., Co-investigator, Anticonvulsant Drug Development (ADD) program; Department of Pharmacology & Toxicology research assistant professor, Oral Biology, Medicine, and Pathology section of the School of Dentistry assistant professor.
- Perry Fine, MD, Anesthesiology professor in the School of Medicine; the Pain Research Center faculty; Pain Management Center attending physician.
- Sarah Ponce, MS, RN, DHHS senior registered nurse, oversees the research and education portion of the Center for Medical Cannabis.

Additional researchers throughout the state will be approached based on their area of expertise, leading to a multifaceted committee.

An external advisory board is being established to support the overall goals of the center. The focus of the center over the next year will be to create a network of additional researchers and cannabis experts both internally at the University of Utah and externally to serve in an advisory capacity as the center identifies the developmental needs.

### Milestones

Following legislative approval, funding for the center began on July 1, 2023. Accomplishments of the center thus far include:

- Assembled cannabis-focused researchers and DHHS representatives to introduce the center and gather input.
- Conducted preliminary landscape analysis of other medical cannabis centers nationwide.
- Hired and onboarded an administrative senior manager, Valerie Ahanonu, to oversee the development and operations of the Center for Medical Cannabis Research.
- Appointed an interim faculty director, Gerald Cochran, MSW, Ph.D.
- Convened a steering committee and conducted the first steering committee meeting.
- Met with key collaborators, including DHHS and legislators, to understand the scope of the provisioned requests noted in [HB 230](#).
- Established communication channels, including a website, newsletter, and email listservs.
- Partnered with the University of Utah Genetics Science Learning Center to begin developing research-informed tools that support educating the public and providers on the therapeutic use of cannabis.
- Initiated collaborations with the Eccles Library Reference and Research team to outline cannabis research literature review services.

### Budget

The Center for Medical Cannabis Research was allocated a fiscal budget of \$650K for the first developmental academic year. The Qualified Patient Enterprise for Medical Cannabis Fund supports these funds. All funds will be managed and overseen by the interim director and the Center for Medical Cannabis Research senior manager. Funds will be directed to support strategic planning and implementation, meeting discretionary goals established by the steering committee, and the legislative requirements noted in [HB 230](#).

**Table 7: University of Utah Center for Medical Cannabis Research Current Budget FY24.**

Expense description	Total
Center for Medical Cannabis Research personnel	\$165,000.00
Literature review and GSLC education outreach	\$100,000.00
Pilot grants	\$150,000.00
<b>Flexible spending/legislative projects</b>	
Travel to other cannabis research centers	\$8,000.00
Cannabis research conference attendance	\$7,000.00
Faculty outreach and engagement	\$30,000.00
DEA manufacturers application strategic development	\$50,000.00
QMP/LMP outreach and engagement	\$20,000.00
Public communications and engagement	\$20,000.00
GSLC supplemental education support	\$30,000.00
Clinical cannabis research database development	\$40,000.00
Events	\$20,000.00
General operations	\$10,000.00
<b>Budget total</b>	<b>\$650,000.00</b>

**Table 8: University of Utah Center for Medical Cannabis Research Proposed Budget FY25.**

Expense description	Total
Center for Medical Cannabis research personnel	\$165,000.00
Literature review and GSLC education outreach	\$100,000.00
Pilot grants	\$150,000.00
<b>Flexible spending/legislative projects</b>	
Travel to other cannabis research centers	\$80,000.00
Cannabis research conference attendance	\$50,000.00
Faculty outreach and engagement	\$8,000.00
DEA manufacturers application strategic development	\$7,000.00
QMP/LMP outreach and engagement	\$20,000.00
Public communications and engagement	\$10,000.00
GSLC supplemental education support	\$10,000.00
Clinical cannabis research database development	\$20,000.00
Events	\$20,000.00
General operations	\$10,000.00
<b>Budget total</b>	<b>\$650,000.00</b>

## Future of the center

The mission of the Center for Medical Cannabis Research is to lead methodologically sound research evaluating the safety and efficacy of cannabis and cannabis products used with therapeutic intent.

In the upcoming year, the center will prioritize its efforts to enhance medical cannabis research capacity. The University of Utah ranks 21<sup>st</sup> within NIH-funded medical cannabis research based on analytical data compiled through the SVPHS unit's preliminary strategic analysis. The Center for Medical Cannabis Research plans to focus on its mission, thereby elevating Utah's national cannabis research profile to better serve the people of Utah by:

- Hiring a nationally recognized cannabis researcher to serve as the permanent faculty director of the Center for Medical Cannabis Research.
  - The Center for Medical Cannabis Research will lead a national search to identify candidates for this position.
- Establishing regular communications and faculty outreach events.
  - The Center for Medical Cannabis Research will focus on creating a consortium of current and future researchers to serve as an interdisciplinary collective focused on placing Utah at the forefront of the cannabis research arena.
- Seeding innovative new research projects that are primed to advance our understanding of medical cannabis.
  - The Center for Medical Cannabis Research will provide pilot and seed grant funding to researchers spanning the field of cannabis and cannabis-related research projects, fostering opportunities for expanding the footprint of cannabis research within Utah.
- Performing literature reviews to understand the best science and research practices for medical cannabis.
  - The Center for Medical Cannabis Research will conduct literature reviews with the Eccles Health Sciences Library librarians to create a matrix of cannabis research materials to impact the depth of understanding related to cannabis science and its therapeutic application.
- Generating research-based public educational tools.
  - In tandem with the Genetics Science Learning Center, the Center for Medical Cannabis Research will generate research-based educational tools to serve as a resource for impacting public and provider knowledge surrounding access and utilizing medical cannabis as a tool for therapeutic benefit.
- Creating partnerships with other established cannabis research centers.
  - By partnering with external advisors, the Center for Medical Cannabis Research will develop research partnerships with established centers throughout the country, leading to collaborative research projects and additional grant funding opportunities.

- Aiding Utah State University’s Department of Plant, Soil, and Climate in applying to the DEA-Approved Bulk Manufacturer Growers Program.
  - This partnership will support whole cannabis plant and cannabis product development for research within the state, leading to opportunities for Utah to support cannabis research nationally.
- Developing an approach to human laboratory research to support medical cannabis clinical trials research.
  - By creating collaborative opportunities with experienced human research units, the Center for Medical Cannabis Research will promote controlled and rigorous clinical trials, leading to more comprehensive and efficacious research outcomes.

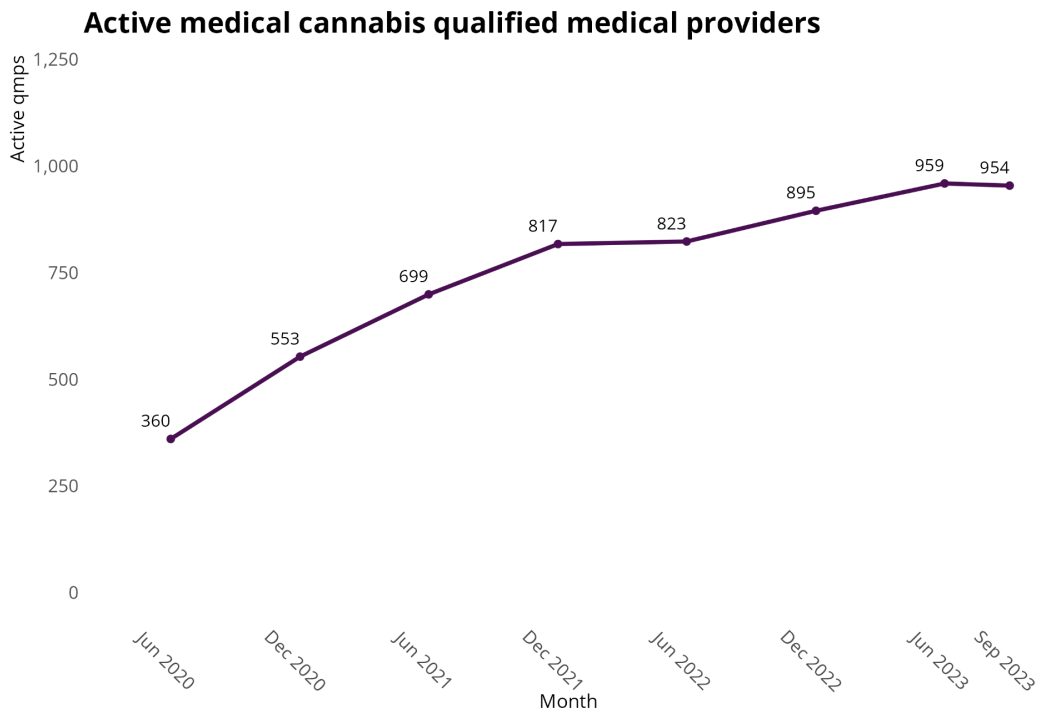
## 6. Qualified medical providers (QMPs)

**Table 9. Qualified medical provider (QMP) office locations by region as of September 30, 2023.**

Region	# of QMP office locations	% of total QMP office locations in each region
Greater Salt Lake	817	86%
Uintah Basin	4	<1%
West Central	13	1%
East Central	7	<1%
Southwest	75	8%
Southeast	3	<1%
Other*	35	4%
<b>Total</b>	<b>954</b>	<b>100%</b>

\*Indicates that the zip code provided by the QMP is either invalid or out of state.

**Figure 2. Qualified medical provider (QMP) totals as of September 30, 2023.**



**Table 11. Qualified medical providers (QMPs) by DOPL license type as of September 30, 2023.**

Qualified medical provider DOPL license type	Count of QMPs
Osteopathic Doctor (DO)	55
Physician Assistant (PA)	160
Advanced Practice Registered Nurse (APRN)	503
Medical Doctor (MD)	236
Doctor of Podiatric Medicine (DPM)	0
<b>Total</b>	<b>954</b>

## 7. Medical cannabis pharmacies

**Table 12. Medical cannabis pharmacy licenses and opening dates.**

<b>Business name</b>	<b>City</b>	<b>County</b>	<b>Opening date</b>
Dragonfly Wellness	Salt Lake City	Salt Lake	March 2020
The Flower Shop	North Logan	Cache	March 2020
The Flower Shop	South Ogden	Weber	April 2020
WholesomeCo Cannabis	West Bountiful	Davis	August 2020
Curaleaf - Lehi	Lehi	Utah	August 2020
Deseret Wellness	Provo	Utah	August 2020
Beehive Farmacy	Salt Lake City	Salt Lake	October 2020
Curaleaf - Park City	Park City	Summit	February 2021
Beehive Farmacy	Brigham City	Box Elder	April 2021
Pure UT	Payson	Utah	April 2021
Cannabist	Springville	Utah	April 2021
Bloc Pharmacy	South Jordan	Salt Lake	May 2021
Zion Medicinals	Cedar City	Iron	June 2021
Bloc Pharmacy	St. George	Washington	June 2021
Dragonfly Wellness	Price	Carbon	January 2022

**Table 13. Medical cannabis pharmacy employee totals as of September 30, 2023.**

<b>77</b> active pharmacy medical providers.	Pharmacy medical providers who have an active registration with DHHS.
<b>750</b> active pharmacy agents.	Pharmacy agents who have an active registration with DHHS.

## 8. Center for Medical Cannabis operations

Utah code [26B-4-1](#) gives the department the authority to create and enforce administrative rules governing the medical cannabis industry. The department is also tasked with inspecting, auditing, and investigating complaints against QMPs and PMPs. A new operations team was established within the center in July 2023 to carry out these responsibilities. The operations team is responsible for various functions, including researching proposed laws and their impact, incorporating new laws into rules, policies, and procedures, educating Center for Medical Cannabis teams on laws and regulations, conducting outreach to stakeholders and providing education on laws and rules, auditing medical providers, patients, and the Center for Medical Cannabis, and investigating and responding to complaints. Additionally, the operations team processes GRAMA requests and ensures all laws, rules, and policies are applied during audits.

**Table 14. Compliance rates for completed audits as of September 30, 2023.**

<b>Audits</b>	<b># of audits completed</b>	<b>Compliance rates</b>
Rare condition	32	78%
LMP certificate	194	91%
QMPs Reporting their fees	139	46%
In-state applications by out-of-state registrants	163	89%
LMP DOPL validation	404	84%
Correct pharmacist in charge reported to EVS	15	57%
Background check retention	1,150	83%
<b>Total</b>	<b>2,097</b>	<b>82%</b>

## 9. Center for Medical Cannabis expenses and revenues

Table 15. Center for Medical Cannabis expenses—FY 2023 actual and FY 2024 projected

Expense description	FY 2023 (actual)	FY 2024 (projected)
Department personnel	\$1,669,600	\$1,550,400
Electronic system software (fees, maintenance, and change orders for inventory control system and electronic verification system)	\$430,300	\$1,847,600
Travel (in state and out of state)	\$5,200	\$18,000
Current expense	\$466,800	\$1,422,000
General fund loan repayment	\$700,000	\$2,000,000
Misc. expenses including attorney general time for rulemaking, legal, insurance, other	\$72,200	\$69,800
Transfers	\$2,500	\$652,000
<b>Total expenses</b>	<b>\$3,346,600</b>	<b>\$7,560,300</b>

Table 16. Center for Medical Cannabis revenues—FY 2023 actual and FY 2024 projected

Revenue description	FY 2023 (actual)	FY 2024 (projected)
General fund provided	\$541,400	\$0
Business fees	\$1,008,700	\$24,300
Patient fees	\$1,673,900	\$1,167,700
Sales fees	\$3,474,500	\$2,478,200
Interest income	\$273,300	\$200,000
<b>Total revenues</b>	<b>\$6,971,800</b>	<b>\$3,870,200</b>

## Appendix A: Compassionate Use Board member bios

Michael Chen, MD

*Disclosure:* No financial ties to the cannabis industry or pharmaceutical companies.

*Qualifications:* Michael Chen, MD, is a board-certified family physician who received his medical degree from the University of Utah, where he received The Leonard Tow Humanism in Medicine Award and Chase Peterson Family Medicine Leadership Award. He completed his Utah Valley Family Medicine Residency residency as a Chief Resident. He also has an Executive Certificate in Leadership and Management from the University of Notre Dame, Mendoza College of Business. He serves as Medical Director of Population Health for the Community Physicians Group. Dr. Chen pursued family medicine to provide access to quality, patient-centered care for all family members. He enjoys establishing relationships with each patient and looks forward to caring for them throughout their lifetime.

Joel Ehrenkranz, MD

*Disclosure:* No financial ties to the cannabis industry or pharmaceutical companies.

*Qualifications:* Joel Ehrenkranz, MD, a Stanford University School of Medicine graduate, trained in internal medicine, endocrinology, and neurology. He was director of diabetes and endocrinology for Intermountain Healthcare and is currently on the University of Colorado School of Medicine and the California Institute of Technology faculties. Dr. Ehrenkranz is an experienced clinical endocrinologist with particular expertise in neuroendocrinology. He has a longstanding interest in neuropharmacology and natural product medicinal chemistry and has published on the effects of cannabis on endocrine function. He has been involved in the DHHS medical cannabis program since its inception in 2019.

Angelo Peter Giardino, MD, Ph.D., MPH

*Disclosure:* No financial ties to the cannabis industry or pharmaceutical companies.

*Qualifications:* Angelo P. Giardino, MD, Ph.D., MPH, is the Wilma T. Gibson Presidential Professor and Chair of the Department of Pediatrics at the University of Utah's Spencer F. Eccles School of Medicine and Chief Medical Officer at Intermountain Primary Children's Hospital in Salt Lake City, Utah. He received his medical degree and doctorate in education from the University of Pennsylvania, completed his residency and fellowship training at the Children's Hospital of Philadelphia (CHOP), and earned a Master's in Public Health from the University of Massachusetts, a Master's in Theology from Catholic Distance University and a Master's in Public Administration from University of Texas-Rio Grande Valley. He holds subspecialty certifications in Pediatrics and Child Abuse Pediatrics from the American Board of Pediatrics. He is also a Certified Physician Executive (CPE) within the American Association for Physician Leadership,

completed the Patient Safety Certificate Program from the Quality Colloquium, and is certified in medical quality (CMQ) as designated by the American Board of Medical Quality. Dr. Giardino is a member of the American Academy of Pediatrics Committee on Child Health Finance. He is a recipient of the Fulbright and Jaworski Faculty Excellence Award at Baylor College of Medicine and the 2013 Healthcare Advocacy Award from Doctors for Change in Houston, TX.

His academic accomplishments include published articles, chapters, and textbooks on child abuse and neglect, contributions to several national curricula on the evaluation of child maltreatment, and presentations on a variety of pediatric topics at both national and regional conferences. He is an associate editor for the 23rd and 24th editions of Rudolph's Pediatrics, McGraw-Hill's flagship pediatric text continuously published since 1898. He is a board member for several national and regional boards, including Prevent Child Abuse America, Mobilizing Action for Resilient Communities, and the U.S. Center for SafeSport. Previously, Dr. Giardino served for 12 years on the National Review Board for the U.S. Conference of Catholic Bishops, where he chaired the Research Subcommittee, was elected Vice-Chair, and introduced the concept of high reliability as a quality improvement approach to work toward the response, and ultimately the prevention, of child sexual abuse in the church environment. In May 2022, he was appointed to a three-year term as a commissioner of the Medicaid and CHIP Payment and Access Commission (MACPAC).

#### Annalise Keen, MD

*Disclosure:* No financial ties to the cannabis industry or pharmaceutical companies.

*Qualifications:* Annalise Keen, MD, earned her medical degree at Harvard Medical School in 2007. She completed psychiatry residency training at the Cambridge Health Alliance, focusing her final year on working with adult survivors of trauma at the Victims of Violence clinic. Next, she completed child and adolescent psychiatry fellowship training at U.C.L.A. After finishing training in 2012, she spent the next three years working as a staff psychiatrist at the Child and Family Guidance Center, a public sector agency in Los Angeles, in addition to starting a private practice. She has worked at the Huntsman Mental Health Institute since 2016 at the Kidstar and Teenscope day treatment programs.

#### Paige Patterson, MD

*Disclosure:* No financial ties to the cannabis industry or pharmaceutical companies.

*Qualifications:* Paige Patterson, MD, is an Assistant Professor in the Department of Internal Medicine at the University of Utah. She completed a Hospice and Palliative Medicine fellowship at the University of Utah Hospital. Prior to her fellowship, she completed a residency and internship in Internal Medicine and Pediatrics at the University of Utah Hospital, serving as Chief Resident

from 2015-2016. Dr. Patterson received her Doctor of Medicine from the University of Louisville School of Medicine in Louisville, Kentucky, in May 2012. Dr. Patterson is board-certified by the American Board of Internal Medicine and the American Board of Pediatrics. She also holds a subspecialty board certification in Hospice and Palliative Medicine. She is a member of the American Academy of Hospice and Palliative Medicine, the American Academy of Pediatrics, and the American College of Physicians.

Nicholas Whipple, MD, MPH

*Disclosure:* No financial ties to the cannabis industry or pharmaceutical companies.

*Qualifications:* Nicholas Whipple, MD, MPH, received his medical degree from the University of Mississippi School of Medicine in Jackson, MS. After completing his pediatric residency at the University of Utah and Primary Children's Hospital in Salt Lake City, UT, Dr. Whipple completed 3 years of fellowship training in Pediatric Hematology-Oncology and 1 year of Fellowship training in Pediatric Neuro-Oncology at St. Jude Children's Research Hospital in Memphis, TN. During fellowship training, Dr. Whipple also earned a Master of Public Health (MPH) degree at the Milken Institute School of Public Health at George Washington University. Dr. Whipple joined the faculty of the University of Utah in 2017, where he is currently an Assistant Professor of Pediatrics in the Division of Pediatric Hematology and Oncology. He is the Medical Director of Pediatric Neuro-Oncology at Primary Children's Hospital and the University of Utah. He also serves as the Principal Investigator for the Pacific Pediatric Neuro-Oncology Consortium (PNOC) in Utah (1 of 18 sites in the nation), where he oversees all PNOC clinical trials in Utah. Dr. Whipple's clinical focus is on pediatric neuro-oncology, histiocytic disorders, and rare tumors. He has authored several publications and book chapters on a variety of topics in both pediatric hematology and oncology. His research primarily focuses on pediatric neuro-oncology, hereditary cancer syndromes, and improving the treatment of children with central nervous system tumors using molecularly targeted therapies. He is working to develop early-phase clinical trials for children with recurrent malignant central nervous tumors. Dr. Whipple is board-certified in both Pediatrics and Pediatric Hematology-Oncology.

Carey Wilson

*Disclosure:* No financial ties to the cannabis industry or pharmaceutical companies.

*Qualifications:* Dr. Carey Wilson is a Pediatric Neurologist and Epileptologist who primarily cares for children with seizures but also sees general neurology concerns. She is involved in all aspects of epilepsy care, from guiding diagnostic testing and medication management to medication alternatives such as neurostimulation, ketogenic diet, and epilepsy surgery when appropriate. Research interests include novel anti-seizure therapies, patient quality of life outcomes, genetic associations with epilepsy, and expanding telehealth access. She is an active patient advocate,

serving as an Early Career Liaison for the American Academy of Pediatrics (AAP) Section on Neurology and sitting on the Advisory Board for the Utah Epilepsy Foundation. She is an Assistant Professor of Pediatrics at the University of Utah and Medical Director of the Comprehensive Epilepsy Program at Primary Children's Hospital. She trained at SUNY Upstate Medical University with residency and fellowships completed at the University of Utah. When not working, you may find her skiing, hiking, or traveling with her family.



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