Arizona Department of Health Services

THE UNIVERSITY OF ARIZONA
MEL AND ENID ZUCKERMAN COLLEGE OF PUBLIC HEALTH

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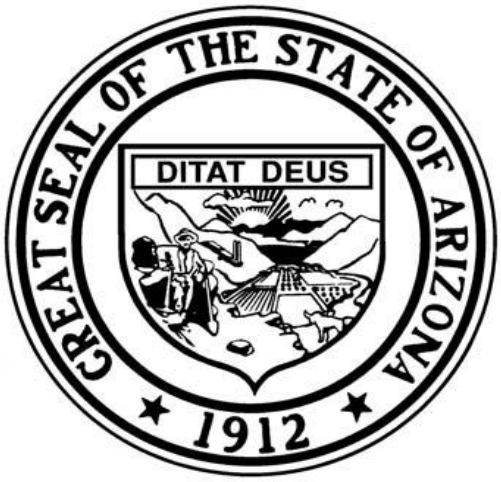

Health and Wellness for all Arizonans

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State of Arizona

Will Humble, Director
Arizona Department of Health Services

MISSION

To promote, protect, and improve the health and wellness of individuals and communities in Arizona.

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Executive Summary

As required by Arizona Revised Statues (A.R.S.) §36-2809, the Arizona Department of Health Services (ADHS) has completed this third annual statistical report for the Arizona Medical Marijuana Program. ADHS, in conjunction with the University of Arizona Mel & Enid Zuckerman College of Public Health, prepared this report.

In November 2010, Arizona voters passed a ballot initiative making Arizona the fourteenth state to adopt a medical marijuana law. As of June 30, 2014, 23 states and the District of Columbia have medical marijuana programs. Eleven have been by ballot initiatives similar to Arizona, and 12 have been through legislative action not requiring voter approval. Since the Arizona Medical Marijuana Program went into effect on April 14, 2011, the goal of ADHS was to ensure the development and administration of the pre-eminent program in the country for medical use of marijuana.

During state fiscal year July 2013 to June 2014:

- There were a total of 52,374 qualifying patient and caregiver active cardholders, which included 51,783 qualifying patients and 591 caregivers. During this time period, 904 dispensary agent cards were issued.
- Of the total qualifying patients, approximately 32% (n = 16,314) were female qualifying patients, and of the total caregivers, 33% (n = 195) were female caregivers.
- Approximately 4% (n = 1,960) of the qualifying patients and slightly over 62% (n = 366) of caregivers were authorized to cultivate.
- Qualifying patients per 1,000 residents were highest in Yavapai County (14.9), followed by Gila County (14.8) and Coconino (12.5). Yuma (3.3), Santa Cruz (4.1), and Pinal (5.5) Counties had the lowest qualifying patients per 1,000 residents.
- The number of qualifying patients who are minor (i.e., <18 years) increased by 148% from 37 qualifying patients in 2013 state fiscal year (i.e., July 1, 2012 to June 30, 2013) to 92 qualifying patients in the current reporting period (i.e., July 1, 2013 to June 30, 2014).
- The majority of the qualifying patients (n = 41,284; ~80%) had one debilitating medical condition. The remaining 20% reported two or more conditions. Approximately 71% of the qualifying patients (n = 36,577) indicated “severe and chronic pain” as their only debilitating medical condition.
- Six hundred fifteen physicians provided certifications to 51,783 patients during this time period. Twenty-five physicians certified approximately 60% of the patients.
- Forty-five Approval to Operate certificates were issued to medical marijuana dispensaries, and of those approved, 38 dispensaries became operational. Additionally, 34 cultivation sites were approved. Thirty-seven dispensaries applied for and obtained ADHS authorization to sell or dispense medical marijuana-infused edible food products, and 11 dispensaries applied for and obtained authorization to prepare medical marijuana-infused edible food products and supply edibles to dispensaries.

Introduction

1.1 Arizona Medical Marijuana Timeline and Passage of Proposition

In November 2010, voters passed the Arizona Medical Marijuana Act (AMMA). The citizen initiative (Proposition 203) required the Arizona Department of Health Services (ADHS) to create a medical marijuana program within 120 days from the certification date of official election results. The goal was to create the first truly medical marijuana program in the country.[1] Staff from across the Department joined together to create a plan. The challenging undertaking included Information Technology systems for applications, reporting, and validating. Staff combed through the rules in other states to help write the Arizona rules for how the program would work, how Arizona residents could apply for the different types of licenses, when they could apply, and how to add new debilitating diseases, among other important elements. Even though the initiative allowed ADHS to avoid the normal rulemaking process, staff asked twice for written public comment and held four public hearings to gather public input. On December 17, 2010, ADHS posted the medical marijuana informal draft rules for public comment and received comments via an online survey during the comment period from December 17, 2010 to January 7, 2011.[1] On January 31, 2011, ADHS posted the official medical marijuana draft rules for public comment, and received comments via an online survey during the comment period from January 31 to February 18, 2011. ADHS also received comments at four public meetings held during February 14 to 17, 2011.[1]

1.2 Overview of the Arizona Medical Marijuana Program Components

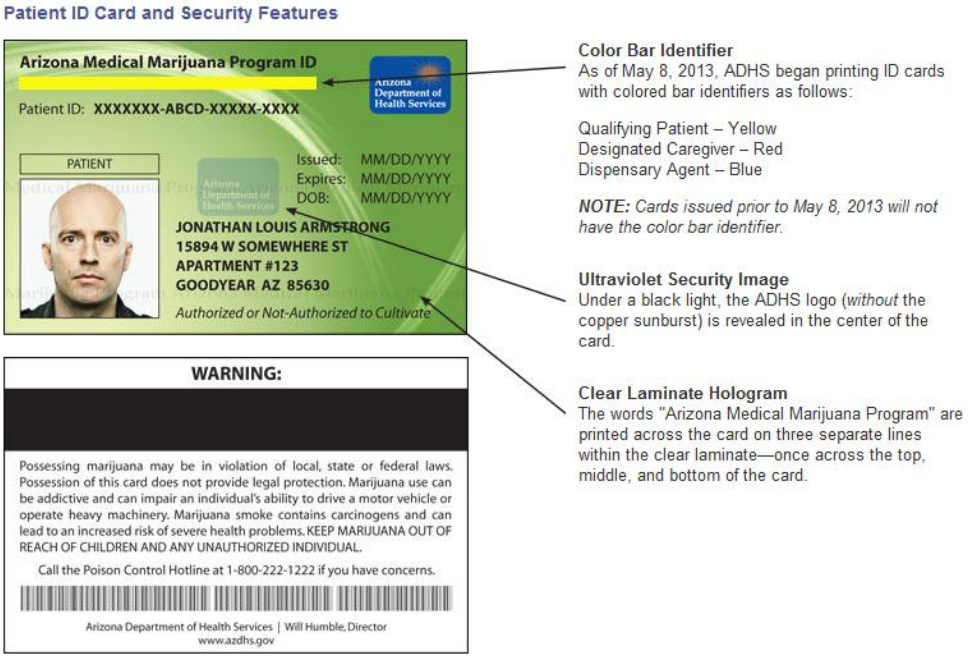
Licensing Authority

The AMMA designates ADHS as the licensing authority for the Arizona Medical Marijuana Program. Along with developing the rules and administrative components for the program, ADHS is responsible for issuing Registry Identification Cards for qualifying patients (QPs), designated caregivers (CGs), and dispensary agents (DAs) and for selecting, registering, and providing oversight for nonprofit medical marijuana dispensaries. See Appendix A for reference to the Arizona Administrative Code (A.A.C.) and specific time frames for components of the program.[1]

Qualifying Patient Applications for Registry Identification Cards

Qualifying patients began applying for Registry Identification Cards on April 14, 2011. For a QP to be eligible to possess and purchase marijuana for medical use under Arizona law, they must possess a Registry Identification Card. Registry Identification Cards expire each year, and the QP must be re-evaluated by a physician and submit applications yearly using the ADHS online application system. Applicants must provide:

- Personal demographic information
- Designated Caregiver (CG) information (if the applicant is designating a CG)
- The certifying physician's information
- An attestation pledging not to divert marijuana and that the information submitted is true and correct
- An identification document (Arizona Driver's License, Arizona Identification Card, Arizona Registry Identification Card, U.S. Passport Page)
- A current photograph
- Physician Certification
- Documentation for Supplemental Nutrition Assistance Program (SNAP) (if claiming SNAP eligible)
- The application fee



Authorization to Cultivate

During the application process, the QP can request to cultivate marijuana plants for the QP's own medical use. Qualifying patients may be authorized to cultivate if they live farther than 25 miles from the nearest operating dispensary. The first dispensary opened in Arizona on December 6, 2012. Prior to this first dispensary opening, any QP who requested to cultivate was granted the authorization to cultivate. When QPs apply or renew the Registry Identification Card now, the residential address is checked and mapped to determine if the address is located within 25 radius miles of a dispensary. If the address is located within this radius, the QP will not be granted the authorization to cultivate. Appendix B depicts the number of open and operating dispensaries by

the end of June 2014 and the 25-mile radius cultivation restriction for qualifying patients (and subsequently, designated caregivers).

Debilitating Medical Conditions

Debilitating medical conditions for use of medical marijuana in Arizona are the following: cancer, glaucoma, HIV, AIDS, Hepatitis C, Amyotrophic Lateral Sclerosis, Crohn's disease, agitation of Alzheimer's disease, or a chronic or debilitating disease or medical condition (or the treatment of such a condition) that causes cachexia or wasting syndrome, severe and chronic pain, severe nausea, seizures (including those characteristic of epilepsy), severe or persistent muscle spasms (including those characteristic of multiple sclerosis), or a debilitating medical condition or treatment approved by ADHS under A.R.S. §36-2801.01 and A.A.C. R9-17-106.

Pursuant to A.A.C. R9-17-106, ADHS accepts petitions to add a debilitating medical condition to the list of debilitating medical conditions for the Medical Marijuana Program in January and July of each year. In January 2012, ADHS reviewed several conditions from petitions received including Post Traumatic Stress Disorder (PTSD), Depression, Migraines, and Generalized Anxiety Disorder. ADHS held a public hearing on May 25, 2012 to collect public comments on these medical conditions. After consideration of the evidence submitted and the public hearing, ADHS rejected these petitions to add new qualifying conditions to the list of debilitating medical conditions. In July 2012 and January 2013, ADHS again accepted petitions, but no conditions moved forward to a public hearing.

In July 2013, ADHS received nine petitions. Three conditions (PTSD, Migraines, and Depression) moved forward to a public hearing. Initially, ADHS rejected adding any of these conditions to the list of debilitating medical conditions. The petitioners for PTSD appealed the decision to the Arizona Office of Administrative Hearings. In March 2014, the Administrative Law Judge for the case ruled that: "*…the Appellant's appeal is granted and that PTSD is added to the list of debilitating conditions for which marijuana may be dispensed.*" During the hearing, the petitioners presented an additional study that showed evidence that marijuana may be helpful in the palliative care of PTSD in some patients. Therefore, in July 2014, ADHS approved adding PTSD to the list of debilitating medical conditions. PTSD will be added on January 1, 2015 and valid only for palliative care of PTSD symptoms (not treatment).

Physicians

As part of the application for a QP Registry Identification Card, an individual must have a written certification from a physician making or confirming diagnosis of the debilitating medical condition(s). Allowable certifying physicians:

- A doctor of medicine (Allopathic Physician) who holds a valid and existing license to practice medicine, pursuant to Title 32, Chapter 13 or its successor
- A doctor of osteopathic medicine who holds a valid and existing license to practice osteopathic medicine pursuant to Title 32, Chapter 17 or its successor
- A naturopathic physician who holds a valid and existing license to practice naturopathic medicine pursuant to Title 32, Chapter 14 or its successor
- A homeopathic physician who holds a valid and existing license to practice homeopathic medicine pursuant to Title 32, Chapter 29 or its successor

The certifying physician must document on the physician certification form that s/he has performed the following for each QP:

- Has made or confirmed a diagnosis of a debilitating medical condition
- Has established and is maintaining a medical record for the QP
- Has conducted an in-person physical exam within the last 90 calendar days appropriate to the QP's presenting symptoms and the debilitating medical condition diagnosed or confirmed
- Has reviewed the QP's medical records including those from other treating physicians for the previous 12 months
- Has reviewed the QP's profile on the Arizona Board of Pharmacy Controlled Substances Prescription Monitoring Program database
- Has explained the potential risks and benefits of the medical use of marijuana
- Whether s/he has referred the QP to a dispensary

The physician must attest, by signature, that he or she has established and is maintaining a medical record for the qualifying patient.

The physician must also attest, by signature, that it is the physician's professional opinion that the QP is likely to receive therapeutic or palliative benefit from the patient's medical use of marijuana.

Clinical Trials

When QPs apply for a Registry Identification Card, they may ask to be notified of any available clinical trials. Every quarter, ADHS sends an email to those individuals who have selected to receive this information. The email refers the QP to the United States National Institutes of Health (NIH) website for clinical trials (www.clinicaltrials.gov). NIH has developed a searchable online site to facilitate distribution of information on clinical trials. The database is

searchable by disease or condition, by intervention (such as cannabis use), or by other factors such as the physical location of the study. Additionally, the University of Arizona has provided a list of available clinical trials which is posted on the ADHS website.

Qualifying Patient Newsletter

Beginning July 2013, ADHS developed and distributed a patient newsletter. The purpose of the newsletter was to provide information to patients on current medical marijuana activities, technical application tips, answers to frequently asked questions, and other informative topics. The newsletter also includes a list of open and operating dispensaries. ADHS prepares this newsletter on a monthly basis, and it is sent to active QP cardholders by mail and email.

Minor Patients

Minor patients (younger than 18 years of age) can qualify for the Arizona Medical Marijuana Program. However, minor patient requirements include two physician certifications during the application process. Additionally, the minor patient's custodial parent or legal guardian must be designated as the minor patient's CG. This CG provides parental consent to the minor patient's use of medical marijuana and controls the dosage, acquisition, and frequency of use.

Designated Caregiver Applications for Registry Identification Cards

Designated caregivers must also hold Registry Identification Cards for each QP who has designated them as a CG. In Arizona, CGs, who must be at least 21 years of age, are limited to serving no more than five QPs. The CG can cultivate, if authorized to do so by his or her QPs, up to 12 marijuana plants per patient if the patient lives more than 25 miles from an operating dispensary.

Similar to QP applications, an individual being designated as a CG by a QP must provide personal demographic information, an identification document, and a current photograph. The CG must also provide the application number from the patient s/he is linking with and complete a signed statement agreeing to assist the QP with the medical use of marijuana, pledging not to divert marijuana to any person who is not allowed to possess marijuana, and stating that the individual has not been convicted of an excluded felony offense. The CG must also submit two original sets of fingerprints to ADHS to complete the application. If the CG is found to have had an excluded felony offense on his or her criminal history, ADHS will revoke the CG's card(s).

Registration Fees

The fees are listed in the A.A.C. R9-17-102 and include:

- $150 for an initial or a renewal Registry Identification Card for a QP. QPs may be eligible to pay $75 for initial and renewal cards if they currently participate in SNAP.
- $200 for an initial or a renewal Registry Identification Card for a CG for each QP (up to five patients).

- $500 for an initial or a renewal Registry Identification Card for a DA.
- $5,000 for an initial dispensary registration certificate.
- $1,000 for a renewal dispensary registration certificate.
- $2,500 to change the location of a dispensary or cultivation facility.
- $10 to amend, change, or replace a Registry Identification Card.

Non-Profit Medical Marijuana Dispensaries

Non-profit medical marijuana dispensaries (dispensaries) are entities that acquire, possess, cultivate, manufacture, deliver, transfer, transport, supply, sell, and dispense medical marijuana. For the first year, legal action delayed the dispensary application and registration process in Arizona. The Arizona Medical Marijuana Act and the supporting Administrative Code delineates the process and regulations for medical marijuana dispensary certification, policies, medical director responsibilities and functions, DA registration, and other restrictions and precautions.

ADHS may not issue more than one dispensary registration certificate for every ten licensed pharmacies in Arizona, except if necessary to ensure ADHS issues at least one dispensary registration certificate in each county. The current maximum number of potential dispensaries in Arizona is 126.

From May 14 through May 25, 2012, ADHS accepted applications for non-profit medical marijuana dispensaries. For the first year of the initial allocation process (2012), dispensary registration certificates were issued based on one dispensary per Community Health Analysis Area (CHAA). If there was more than one dispensary registration certificate application for a CHAA that met the requirements accurately, ADHS issued dispensary registration certificates using a random selection process.

Non-profit medical marijuana dispensaries (dispensaries) are entities that acquire, possess, cultivate, manufacture, deliver, transfer, transport, supply, sell, and dispense medical marijuana.

For the period of July 1, 2013 through June 30, 2014, 45 Approval to Operate certificates were issued, and of those approved, 38 became operational. Additionally, 34 cultivation sites were approved. Thirty-seven dispensaries applied for and obtained ADHS authorization to sell or dispense medical marijuana-infused edible food products, and 11 dispensaries applied for and obtained authorization to prepare medical marijuana-infused edible food products and supply edibles to dispensaries.

Operational dispensaries, cultivation sites, and, if applicable, infusion kitchens receive routine compliance inspections as well as complaint inspections in response to allegations of violations with the AMMA and supporting Rules.

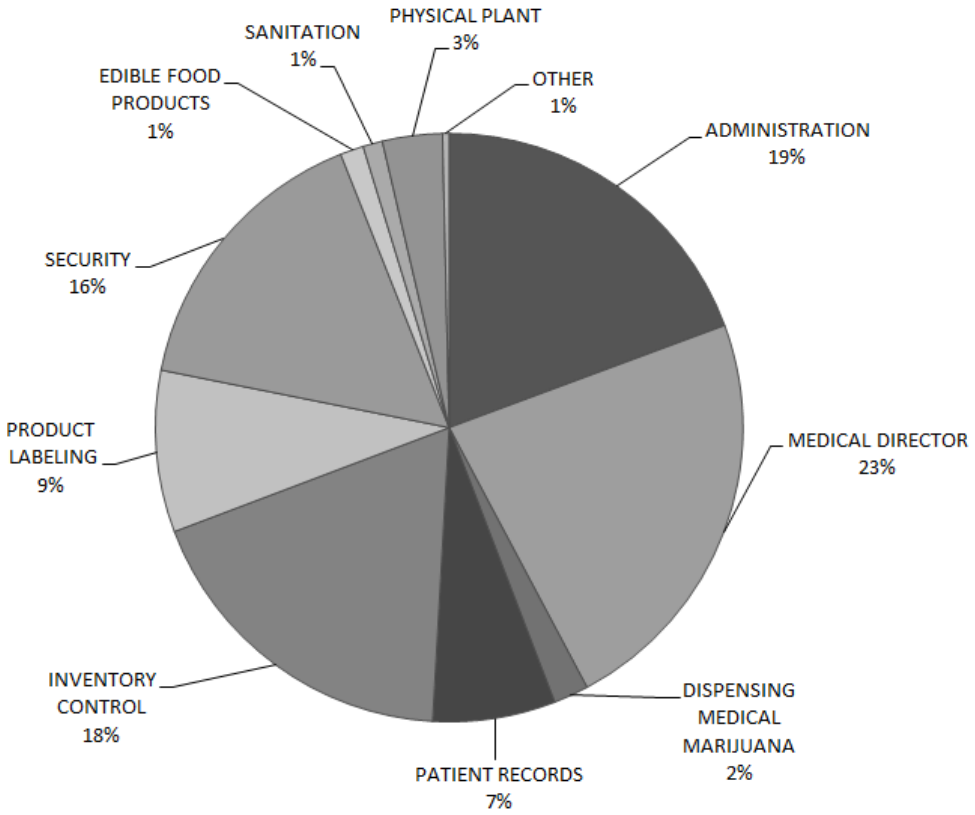
For the period of July 1, 2013 through June 30, 2014, ADHS conducted 81 Approval to Operate inspections at 81 separate facilities; 113 compliance inspections at 76 dispensaries; and 33

cultivation sites. ADHS documented an average of 12.35 noncompliance items per inspection. Of the 113 compliance inspections conducted by ADHS, 79 inspections were conducted at 76 separate dispensaries and 34 inspections were conducted at 33 separate cultivation sites. During the same period, ADHS conducted 19 complaint inspections of operational dispensaries and cultivation sites. Of the 19 complaints investigated by ADHS, 17 inspections were conducted at 11 separate dispensaries and two inspections were conducted at two separate cultivation sites. Table 1 demonstrates the distribution of inspection type(s) among facility type.

Table 1. *Distribution of Inspection Type(s) Among Facility Type, July 1, 2013 through June 30, 2014*

	Approval to Operate	***Compliance***	***Complaint***
Dispensary	47	81	17
Cultivation Site	34	32	2
Total	**81**	**113**	**19**

Figure 1. *Distribution of Noncompliance Items during Compliance Inspections by Category, July 1, 2013 through June 30, 2014*



During the same period, ADHS conducted 19 complaint inspections of operational dispensaries, cultivation sites, and infusion kitchens.

Evidence of violations or noncompliance with the AMMA or Rules may result in the revocation of a dispensary's registration certificate. There have been no revocations to date.

As of the date of this report, 100 dispensary registration certificates have been issued; 88 dispensaries have received an Approval to Operate, 83 of which are operational; and 51 cultivation sites have been approved. The remaining dispensaries are in the process of obtaining the necessary permits or certificates of occupancy from their local jurisdiction and/or completing the final steps before an inspection may take place. Eighty-two dispensaries have applied for and obtained ADHS authorization to sell or dispense medical marijuana infused edible food products. Sixteen dispensaries have applied for and obtained authorization to prepare medical marijuana infused edible food products and supply edibles to dispensaries.

In addition to the licensing and compliance activities, ADHS coordinated and hosted the first Medical Marijuana Dispensary Collaborative Meeting in February 2014. The meeting was open to registered Dispensary Agents, Principal Officers/Board Members, and Dispensary Medical Directors. The day-long session covered dispensary inspection results, patient and dispensary agent educational resources offered by the Arizona Poison and Drug Information Center, the administrative rules process, financial audit requirements (including the difference between profit and non-profit entities), and the Point of Sale/Electronic Verification System.

Medical Marijuana Dispensary Superior Court Ruling

In September 2013, a Superior Court judge ruled some medical marijuana regulations are unreasonable. The system did not provide a formal appeal process for dispensary registration certificate holders who do not obtain the approval to operate within one year. Because of the ruling, renewal requests for all the current dispensaries (open or not) were approved when proper paperwork was received and fees were paid.

To comply with the judge's ruling, ADHS plans to modify some medical marijuana program rules. The rule changes will include creating an appeal process, eliminating the former "Year 2" selection criteria for dispensaries by focusing on vacant CHAAs rather than patient density, and removing the lifetime disqualification for those applicants that receive a dispensary registration certificate but do not open the dispensary.

ADHS is considering adjusting other rules including the current 25-mile cultivation restriction. The AMMA states if patients live within 25 miles of a dispensary, they cannot cultivate

marijuana. ADHS plans to propose that the distance be measured by road miles instead of radius miles.

Once an initial draft is created, ADHS will solicit public comment and hold oral proceedings. ADHS expects that modified rules will be in effect late 2015.

Marijuana v. Cannabis

The ADHS Director's blog is used frequently to address various complex medical marijuana policy issues. One issue that ADHS faces is the difference between the definitions of marijuana and cannabis in two separate state laws; the difficulty lies with interpreting whether the use of edibles, extractions, and resins is legal. Appendix C is a blog dated August 30, 2013. This outlines the difference between definitions in the Arizona Medical Marijuana Act and Arizona's Criminal Code (Title 13).

In March 2014, a Maricopa County Superior Court ruling concluded that forms of marijuana that include extracts from the plant are provided the same level of protection for patients and dispensaries as the dried flower of the marijuana plant under AMMA. The ruling provides clarity about how ADHS will regulate the sale of marijuana-derived products that contain extracts form the marijuana plant.

Non-profit Medical Marijuana Dispensary Agents

Non-profit Medical Marijuana Dispensary Agents are principal officers, board members, employees, or volunteers of non-profit medical marijuana dispensaries and must be at least 21 years of age. Dispensary Agents perform many functions including:

- Dispensing medical marijuana
- Verifying QP and CG Registry Identification Cards before dispensing
- Maintaining QP records
- Maintaining an inventory control system
- Ensuring that medical marijuana has the required product labeling
- Providing required security
- Ensuring that edible food products sold or dispensed are prepared only as permitted
- Maintaining the dispensary and cultivation site in a clean and sanitary condition

Dispensary Agents, similar to CGs, cannot have been convicted of an excluded felony offense. ADHS collects two original sets of fingerprints and processes the fingerprints to determine if the individual has an excluded felony offense. A DA is required to be registered with ADHS before volunteering or working at a dispensary. Dispensaries must apply for a Registry Identification Card for each DA.

From July 1, 2013 to June 30, 2014, there were 904 DA Registry Identification Cards issued.

Arizona Medical Marijuana Program Information Technology (IT)

During fiscal year 2014, medical marijuana applications and systems became partially or completely unavailable eight times. These outages were caused by a variety of different factors, and the downtime ranged from a few minutes to several hours. The total amount of downtime experienced during the current reporting period was 49 hours and 51 minutes. The applications and systems were operational 99.1% of the time during expected dispensary operational hours. The Department has identified factors leading to these problems and implemented a comprehensive plan to address each group of problems. This plan also provides solutions ensuring high availability, stability, and better performance for the medical marijuana applications and systems. The following are the measures taken for increasing the efficiency and ensuring high availability of the Medical Marijuana system:

1. Establish a Disaster Recovery Site in Tucson to guarantee continuity of operations

The main purpose of this site is to allow all critical services to be replicated and to be made available in case of a disaster or a total failure of the medical marijuana applications and systems at the primary data center in Phoenix. The project is expected to be fully completed by the end of December 2014.

2. Create redundancy for all critical services in the primary data center

The Department will establish the necessary level of redundancy for all tiers of the medical marijuana applications and systems. This architecture will allow seamless failover of services from one server to another. The new web server environment was available in the production system at the end of October 2014.

The systems distributed caching and locking servers are now operating in a high-availability cluster with automatic failover. This solution is fully implemented.

3. Improve the communication process between the users reporting a problem, the Help Desk and the support team

The Department has made a significant effort to design and execute a troubleshooting process that allows us to keep the downtime to a minimum in a case of failure. Also, the Department has engaged a new Help Desk service exclusively for the ADHS Medical Marijuana Verification System.

4. Implement measures to ensure early problem identification

The Information Technology Services (ITS) Department has implemented an Application Availability System for early problem identification and notification which alerts all teams involved in troubleshooting and support seconds after a problem has occurred.

5. Improve the logistics of deployment procedures

- Based on requests from dispensaries, deployments are not executed on Fridays or Saturdays to ensure that any newly deployed version will not negatively impact the dispensaries during the busy weekend times. Deployments of enhancements and corrections are always performed after 10 PM to avoid any disruption during work hours.
- A new Quality Assurance (QA) environment is being created. This environment will mirror the production environment and will allow any new deployment to be carefully tested by deploying to this environment first. The new QA environment was fully completed by the end of October 2014.
- The ITS Department has identified ways to maintain the Card Search and Transaction Reporting functionality of the Verification System even during scheduled and emergency maintenance downtimes. Although this approach cannot be used during statewide network and equipment maintenance, it still provides a much better level of flexibility and allows ITS to avoid or shorten system downtimes.
- Moving forward, risk mitigation is of the upmost importance. The length of time a patch takes to implement should be irrelevant if there is a chance of a service interruption. Secondly, scheduled changes to the applications and systems will only be performed after hours only when there is adequate time for regression testing and time for rolling back the change if necessary.

6. Software improvements

The ITS Department introduced multiple enhancements based on internal analysis, user feedback, and Medical Marijuana Program observations. Various problems have been identified and corrected. This has improved the performance and reliability of the system. The ITS Department is continuously working on new enhancements that will make the system more efficient and user-friendly.

Table 2. *Medical Marijuana Point of Sale (POS) Outages Encountered in FY'14*

Start Date	Start Time	End Date	End Time	Approx Duration	Cause
8/10/2013	9:22 AM	8/10/2013	4:09 PM	6.5 Hrs	Scheduled maintenance in data center. Unplanned power outage
11/23/2013	Unknown	11/25/2013	9:00 AM	32 Hrs	Memory issue on server; however, ADHS not notified of an issue for several hours.
12/14/2013	11:00 AM	12/14/2013	7:00 PM	8 Hrs	Storage hardware controller failed. Everything failed over correctly to second controller except one disk group which contained Medical Marijuana card images.
2/3/2014	7:52 AM	2/3/2014	9:53 AM	2 Hrs	A common cryptography service used by all web applications stopped running (had been running for seven years).
6/20/2014	10:27 AM	6/20/2014	11:03 AM	30 Mins	Database access to the NFS file system failed.
6/26/2014	10:20 AM	6/26/2014	10:29 AM	9 Mins	Web Server Application Pool went down. During that time, the system was unavailable
6/27/2014	4:26 PM	6/27/2014	5:03 PM	30 Mins	AppFabric caching server experienced problems and was restarted.
6/30/2014	10:03 AM	6/30/2014	10:15 AM	12 Mins	Web Server Application Pool went down. Reason not identified
Total Downtime				**49 Hrs and 51 Mins**	
Possible range of hours of operation for dispensaries: 7 AM to 10 PM					
*Total expected operational hours in a year is **5,475** **Based on these calculations, the POS/Verification System was available 99.1% of the time.**					

*This was calculated by multiplying the range of possible hours of operation (15 hours each day) by 365.

Overview of Revenue and Expenditures

Table 3. *Medical Marijuana Fund Revenues, Expenditures, and Fund Balance in FY 2014*

Beginning Fund Balance	**$ 7,497,017**
Revenues	
Registry Card Application Fees	8,531,825
Dispensary Application Fees	213,425
Total Revenues	**8,745,250**
Expenditures	
Salaries, Wages and Benefits	**1,203,228**
Operating Expenditures	
a. Professional & Outside Services	1,508,216
b. Other Operating Expenditures	2,935,798
c. Travel	37,324
d. Non-Capital Equipment	57,990
Operating Expenditures Total	**4,539,328**
Inter-Governmental Agreements	**1,196,401**
Capital Equipment Expenditures	**476,637**
Total Expenditures	**7,415,594**
Ending Fund Balance	**$ 8,826,673**

Professional & Outside Services include expenditures associated with key vendors and contractors such as Sherman & Howard, L.L.C. ($585,143.73), The University of Arizona ($357,500), Temporary Services ($325,168), Attorney General's Office ($170,000), Information Technology and Security Contracts ($54,897), and Henry and Horne PLC ($4,710). Other Operating Expenditures include expenses associated with direct and indirect charges and contra revenue (bank fees associated with credit card processing). Intergovernmental Agreements (IGAs) and Intergovernmental Service Agreements (ISAs) are contracts with other state and local government agencies, boards, or commissions. For further analysis and examination, please visit the Arizona Open Books website.

Program Project Contracts, Interagency Service Agreements, and Intergovernmental Agreements

Since the program's inception, ADHS has partnered with external agencies, private firms, and institutions to assist in program development and execution. Below is a summary of some of the major work projects associated with the initial development and continued implementation of the medical marijuana program.

Table 4. *Summary of Contracts, Interagency Service Agreements, and Intergovernmental Agreements*

Contractor or ISA/IGA Organization	Contract Details	Amount
Electronic Security Concepts	To secure medical marijuana cards, supplies, equipment, and technical support. Contract awarded in March 2011 and valid through March 2015.	$431,153.67 (expended to date)
University of Arizona College of Public Health	To provide services in two areas: (1) assist with review of clinical trials, CMEs for certifying physicians, scientific evaluation related to adding debilitating medical conditions, and preparation of the Annual Report; and (2) additional CMEs for certifying physicians including video production, brochures, and speaking engagements. ISA executed in February 2012 for five years.	$610,000 (annually)
Arizona Board of Pharmacy	To upgrade the Board's Controlled Substances Database, staffing, office equipment, and 17,000 user licenses. ISA executed in September 2012 for five years.	$424,325 (expended to date)
University of Arizona Center for Toxicology and Pharmacology Education and Research (CTPER) *(ISA executed in November 2012 and extended through November 2015)*	**Arizona Poison & Drug Information Center** To provide 24/7 access to the Poison and Drug Information Center hotline.	$506,429
	Banner Good Samaritan Poison & Drug Information Center To provide 24/7 access to the Banner Good Samaritan Medical Center hotline.	$393,571
	Arizona Poison & Drug Information Center To develop a public health campaign, education, and consultation for dispensaries on the safe use, handling, and storage of medical marijuana.	$325,000
	Banner Good Samaritan Poison & Drug Information Center To develop a public health campaign, education, and consultation	$225,000

	for dispensaries on the safe use, handling, and storage of medical marijuana.	
Pima County Health Department	To provide education and outreach within Pima County to the public, particularly HIV/AIDS patients. IGA executed in June 2014.	Projected amount $75,000
City of Phoenix Police Department	To provide funding for overtime services of existing staff to investigate unlawful marijuana trafficking taking place outside of dispensaries.	In process. Projected amount $150,000
Arizona State University WP Carey School of Business	To provide an Economic Impact Statement and analysis for the proposed medical marijuana rules. Current budget is $145,079.	In process. Projected amount approximately $150,000

Arizona Medical Marijuana Program Legal Counsel and Lawsuits

The majority of the medical marijuana program's legal matters are handled by the Arizona Attorney General's Office (AGO). However, in order to avoid the potential of overtaxing the limited resources of ADHS and AGO in August 2012, ADHS made a request for the appointment of outside counsel. The appointment was requested to allow outside counsel to assist ADHS with the numerous medical marijuana-related administrative appeals and lawsuits, as well as possibly represent ADHS in informal settlement conferences, administrative hearings, and court proceedings. Therefore, in late August 2012, through the AGO, the law firm Sherman & Howard, L.L.C. was appointed as outside counsel to ADHS.

Several lawsuits have been filed concerning the implementation of the Arizona Medical Marijuana Act. A scanned copy of the complaint for each lawsuit is available on the ADHS website. As of the date of this Annual Report, the lawsuits include:

- *Arizona Cannabis Nurses Association v. ADHS:* LC2014-000421
- *Arizona Cannabis Nurses Association v. ADHS*: LC2014-000393
- *Hayes Jr. v. State of Arizona*: CV2014-002093
- *Welton v. State of Arizona*: CV2013-014852
- *Keith Floyd and Daniel Cassidy v. ADHS*: CV2013-011447
- *Total Health & Wellness v. ADHS*: CV2013-005901
- *Compassionate Care v. ADHS*: CV2012-057041
- *Charise Voss Arfa v. ADHS*: CV2012-014816
- *Johanna Dispensaries v. ADHS*: LC2012-000544
- *Arizona Organix v. ADHS*: CV2012-054733
- *White Mountain Health Center v. ADHS*: CV2012-053585
- *Arizona v. 2811*: CV2011-014508
- *Sobol v. Arizona*: CV2011-053246
- *Compassion First v. Arizona*: CV2011-011290
- *Elements v. ADHS*: CV2011-011288
- *Serenity v. ADHS*: LC2011-000410
- *Arizona v. USA*: 11-cv-01072-SRB

1.3 Comparison of Arizona's Medical Marijuana Act with Other States and Districts

Arizona was the 14th state to pass medical marijuana legislation. Twenty-three states and the District of Columbia (DC) have adopted legislation.[3] During the past year eight states, in which medical marijuana legislation failed, passed legislation to allow the use of cannabis oils under prescribed circumstances for epilepsy and seizures and related research.[12] Since the 1970's, numerous cases of marijuana possession and use for medicinal purposes proceeded through the courts with varying outcomes.[2] In 1996, with a 56% majority vote on a ballot initiative, California was the first state to pass legislation allowing for medical use of marijuana. At this time, an additional two states have legislation that has been introduced or proposals in process.[12] A summary is provided in Table 5.

Table 5. *Summary of U.S. States and Districts with medical marijuana legislation*[3-13]

Year	Passage Margin	State Passing Medical Marijuana Legislation
1996	56%	California
1998	AK - 58% DC - 69% NV - 65% OR - 56% WA - 59%	Alaska; District of Columbia - intervention by Congress -law did not go into effect until July 2010; Nevada - legislation additions in 2000 and 2013[6]; Oregon; Washington
1999	ME - Legislature	Maine – affirmative defense legislation broadened by public law in 2009[4]
2000	CO - 54% HI - Legislature	Colorado; Hawaii
2003	Legislature	Delaware - limited affirmative defense legislation broadened in 2011
2004	MT - 62% VT - Legislature	Montana - additional restrictions added in 2011; Vermont
2006	RI - Legislature	Rhode Island[7]
2007	NM - Legislature	New Mexico[5]
2008	62%	Michigan
2009	61%	Maine – passed public medicinal use legislation, fully clarified and implemented program in 2010[4]
2010	AZ - 50.1% NJ - Legislature	Arizona; New Jersey
2011	DE - Senate MD - General Assembly	Delaware, cards to be issued in 2012; dispensaries in 2013; Maryland - affirmative defense legislation in 2013 passed allowed teaching hospitals to dispense, in 2014 passed full legislation (House 125-11, Senate 44-2)
2012	CO – 54% CT – House 96-51; Senate 21-13 WA – 59% MA – 63%	Colorado – Legalization not limited to medical usage Connecticut (6/1/12)[2] Washington – Legalization not limited to medical usage Massachusetts – Legalization of "compassionate use"[13]
2013	IL- House 61-57; Senate 35-21 NH – House 284-66; Senate 18-6	Illinois New Hampshire

2014	NY-Assembly 117-13, Senate 49-10 MN-Senate 46-10, House 89-40	New York – smoking not an approved delivery method[2] Minnesota – smoking is not an approved route of administration, pain is not included but to be considered for adding by July 2016[2]
States with proposed Medical Marijuana Legislation as of 8/27/14[12]: Ohio; Pennsylvania – referred to Appropriations Committee in July		
States with Medical Marijuana Legislation that failed in 2013[2]: *Florida*; *Iowa*; Kansas; Kentucky; *Mississippi*; *Missouri*; *North Carolina*; *South Carolina*; *Tennessee*; West Virginia; *Wisconsin*; Nebraska – bill withdrawn that would have allowed medical marijuana only for seizures or muscle spasms.		
States with failed Medical Marijuana Legislation that passed legislation allowing for use of extracts of cannabidoils under specific conditions (these states were *italicized* above)[12]: Florida (allows limited use of oils); Iowa (allows oil with low THC for epilepsy only prescribed by neurologist); Mississippi (allows use of oil/resin for epilepsy); North Carolina (allows hemp extract use for epilepsy and encourages research into hemp extract use); South Carolina (creates a medical cannabis research program as an anti-seizure medication); Tennessee (allows use of cannabis oil for research as anti-seizure medication).		
States with proposed legislation that would create an affirmative defense for medical reasons in cases of prosecution for marijuana possession that passed[12]: Utah (concern that as written the passed legislation may be unconstitutional)		
States with proposed legislation that would create an affirmative defense for medical reasons in cases of prosecution for marijuana possession that failed[12]: Alabama; Indiana		

Within the 23 States and District of Columbia with legislation, the acts are variable including primary issues such as the entity that oversees the programs, use of patient or caregiver (CG) identification cards, physician and/or CG oversight, cultivation and dispensary limitations, qualifying conditions for use, and protection limits and access.[3] The legislation that passed this year in New York and Minnesota does not allow smoking as an approved route of administration. Within the legislation passed in California, physicians can recommend marijuana use for any condition. In all other jurisdictions with legislation, physicians must certify patients for medical marijuana use for one or more of a set list of qualifying conditions.[3]

All states except Washington utilize or are creating a system to issue identification cards for medical marijuana QPs and CGs, if appropriate. For patients in California and Maine, identification cards are optional.[3] The administrative entity that has the authority to issue identification cards varies among the states. For the majority of states, a Department of Health entity is the authority. However, for Hawaii and Vermont, it is the Department of Public Safety, and for Michigan, it is the Department of Licensing and Regulatory Affairs.[3]

While implementation of Medical Marijuana programs continues to develop, it is possible to summarize key aspects regarding: whether QPs can cultivate marijuana, whether medical marijuana dispensaries will be established and used, whether QPs and/or CGs are required to obtain identification cards, and whether identification cards from other states will be recognized. Table 6 summarizes this information along with whether dispensaries are subject to taxes.

Table 6. *Summary of medical marijuana program components across the various States and District of Columbia.*[2-4*]

State	Can cultivate	Dispensaries	Taxed	ID Cards	Recognize out-of-State cards
Alaska	Y	N	N/A	Y	N
Arizona	Y	Y	Sales Tax	Y	Y
California	Y	Cooperatives	State Sales & Local	Y	N
Colorado	Y	Y	Sales Tax	Y	N
Connecticut	N	Y – only pharmacists can apply	No Information Available	Y	N
Delaware	N	Y (on hold)	If Revenue >1.2mil	Y	Y but need Delaware ID
D.C.	N	Y	Sales Tax	Y	N
Hawaii	Y	N	N/A	Y	N
Illinois	N	Y	Yes, 7%	Y	N
Maine	Y	Y	Sales Tax	Y	Y
Massachusetts	Y - limited circumstance	Y	N	Y	N
Maryland	N	Y	TBD	Y	N
Michigan	Y	N – ruled illegal in 2013; must grow own or get from caregiver	N/A	Y	Y
Minnesota	N	Y – 4 only	TBD	Y	N
Montana	Y	N-initially unlimited pt/CG; now capped @3	N/A	Y	N
Nevada	Y	Y	Sales + 2% excise	Y	Y - will change 4/2016
New Hampshire	Y	Y	TBD	Y	Y
New Jersey	N	Y	sales tax	Y	N

New Mexico	Y with special permission	Y	gross receipts	Y	N
New York	N	Y	Yes, 7%	Y	N
Oregon	Y @ registered sites	N	N/A	Y	N
Rhode Island	Y	Y	Sales Tax + 4% Surcharge	Y	Y
Vermont	Y	Y	N	Y	N
Washington	Y	Y	N	N	N

**For states with dispensaries, the question of taxation is "N/A" meaning Not Applicable. "TBD" is "to be determined" as the medical marijuana programs in these states are still under development.*

Qualifying Conditions

Physicians play an important role in either recommending the medical use of marijuana or certifying that a patient has one or more of the serious conditions or symptoms specified in the legislation/initiative to qualify for its use. Utah recently passed legislation that would create an affirmative defense although the legislation in its current form is considered at risk for being ruled unconstitutional.[12] An affirmative defense in such a situation would allow someone charged with criminal possession/use of marijuana to present evidence of medical qualifications to avoid conviction.[2] In California, physicians can recommend medical marijuana for one or more of several listed conditions and "...any other illness for which marijuana provides relief."

Additional legislation in the states and District of Columbia specify requirements for minor (under 18 years of age) patients. In Washington, the parent or legal guardian is responsible for a minor patient. In Alaska, Oregon, Maine, Hawaii, Nevada, Rhode Island, New Mexico, New Jersey, and the District of Columbia, the minor only qualifies with parent/legal guardian consent and if the adult controls the dosage, acquisition, and frequency of use.[3] In Vermont, the minor patient must have a parent or guardian also sign the application. Arizona is similar to Colorado, Montana, and Michigan in requiring the minor to have two physician authorizations along with parental consent.[1-3] Additionally, the adult must control the dosage, acquisition, and frequency of use. In Delaware, all medical marijuana patients must be 18 years of age or older. In Maryland, Minnesota, and New York, regulations are under development and the potential for legal medicinal marijuana use among minors is unclear.

In November of 2012, Colorado and Washington passed voter initiative legalization of marijuana use among adults aged 21 years and older not limited to medical usage[14-15]. Initiative 502 in Washington passed with a 55.7% majority[14] while Colorado's Amendment 64 garnered 53% of the vote.[15] Both initiatives lead to the development of comprehensive production and revenue rules. It is unclear at this time whether patient registration will decrease in Colorado following the recent legalization of adult marijuana use. Washington did not develop a patient registration system.

Debilitating and qualifying conditions also vary among states and the District of Columbia that have enacted medical marijuana programs. Table 7 on the following page provides a summary of qualifying debilitating conditions by state/District. Although multiple conditions are stated, some categories can be non-specific such as the "chronic / intractable / severe pain" condition. Connecticut, which is in the early phases of implementing its medical marijuana program after passing legislation in 2012, is the sole jurisdiction that does not specifically include "pain" as one of the debilitating conditions.[16] While Connecticut is still in the early medical marijuana program phases, it currently has 2,326 registered QPs.[16] Based on state population profiles, Connecticut has a low rate of 0.87 QPs per 1000 residents.[17]

Table 7. *Comparison of qualifying conditions among States and Districts with medical marijuana legislation*[2-7, 16]

Condition	AK	AZ	CA	CO	CT	DE	DC	HI	IL	MA	ME	MD	MI	MN	MT	NH	NY	NV	NJ	NM	OR	RI	VT	WA
AIDS	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X
ALS		X				X			X	X	X		X	X		X	X		X	X				
Alzheimer's		X				X			X		X		X			X	*				X	X		
Anorexia			X				X					X		X		X				X				X
Arthritis			X														*			X				
Cancer	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X		X	X	X	X	X	X	X
Cachexia	X	X		X	X	X		X	X		X	X	X	X	X	X		X	X	X	X	X	X	X
Chronic /intractable / Severe Pain	X	X	X	X		X		X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X
Cirrhosis						X	X							X										
Crohn's		X			X			X	X	X	X		X		X	X			X	X		X		X
Chronic renal failure																								X
Epilepsy		X	X	X	X			X			X		X	X	X		X		X	X	X			X
Fibromyalgia									X															
Glaucoma	X	X	X	X	X		X	X	X	X	X		X	X	X	X		X	X	X	X	X		X
Hepatitis C		X					X		X	X	X		X			X				X		X		X
HIV	X	X		X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X
Hospice admittance terminal ill							X							X	X				X	X				
Huntington's disease																	X			X				
Inflammatory bowel disease																	X		X					
Migraine			X																					
MS	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X		X	X	X	X	X	X

Condition	AK	AZ	CA	CO	CT	DE	DC	HI	IL	MA	ME	MD	MI	MN	MT	NH	NY	NV	NJ	NM	OR	RI	VT	WA
Muscular Dystrophy									X							X	*		X					
Muscle spasms	X	X	X	X		X	X	X			X	X	X				*	X	X		X	X		X
Nail patella											X		X											
Nausea	X	X	X	X		X		X	X		X	X	X		X			X	X	X	X	X	X	X
Pancreatitis									X							X								
Parkinson's					X				X	X										X				
Peripheral neuropathy															X		X			X				
PTSD			†		X	X					X		X				*			X	X			
Seizures	X	X	X	X		X		X	X		X	X	X		X	X			X		X	X	X	X
Spasticity/ Spinal cord damage					X				X							X	X			X				X
Treat. w/ AZT, chemo, protease inhibitors, or radiotherapy							X				X													
Intractable vomiting															X	X			X	X				X
Tourette's syndrome																				X				
Traumatic brain injury																X								
Cervical dystonia																				X				
Other: Doctor states			X				ǂ			X		X												

† *Debilitating condition added in 2014 to be effective 1/01/2015.*

** Under consideration: The New York Department of Health Services must decide whether to include as a debilitating condition within 18 months of the legislation going into effect.*

ǂ *Mayor of the District of Columbia can approve additional debilitating conditions.*

Methodology

During state fiscal year, ADHS received 51,783 qualifying patient applications, of which 38,629 (~75%) were new applications, 11,645 (~22%) were application for renewals, and the remaining applications were related to changes in demographics, adding/replacing/removing caregivers, etc. There were 52,374 active cardholders, which included 51,783 qualifying patients and 591 caregivers. A key difference in the numbers of applications received versus the number of active cardholders is the fact that an individual can have more than one application while cardholders are typically individuals and usually counted once in the system. The current report covers state fiscal year 2014 (i.e., July 1, 2013 to June 30, 2014) and is based on all active cardholders, which are unique individual counts.

Data on all cardholders (i.e., QPs and CGs) are collected via a secure electronic web-based application system. The information collected by ADHS for purposes of administering the program is confidential by statute (A.R.S. §36-2810), exempt from public records requests under A.R.S. Title 39, Chapter 1, Article 2, exempt from requirements for sharing with federal agencies under A.R.S. §36-105, and not subject to disclosure to any individual or public or private entity, except as necessary for authorized employees of ADHS to perform official duties of the Department.

2.1 Data Sources

The data for this annual report are derived from the information collected via an electronic web-based system for QPs and CGs. A de-identified dataset for the period starting July 1, 2013 to June 30, 2014 was provided by ADHS to the University of Arizona. The de-identified dataset contained information for all active cardholders during this time-period. This de-identified dataset contained 52,374 records that included both QPs (n = 51,783) and CGs (n = 591) and information relevant to their application as required by A.R.S. §36-2809 for preparation of the annual report.

2.2 Measures

The measures reported here were pre-populated by ADHS to ensure confidentiality and mostly relate to the QPs' and CGs' characteristics:

- Gender of the QP and CG;
- Age in years for QPs and CGs (<18, 18-30, 31-40, 41-50, 51-60, 61-70, 71-80, and 81+);
- County of residence;
- Authorized to cultivate or cultivation status of a QP;
- Application type (new, renewal);
- Card status (active, revoked, date of issue, date of expiration);
- Entity type (i.e. QP, QP minor, CG, CG minor);

- Debilitating medical conditions (i.e. Alzheimer, Cancer, Glaucoma, HIV/AIDS, Hepatitis C, Sclerosis, Crohn's Disease, Cachexia, Severe and Chronic Pain, Nausea, Seizures, Muscle Spasms and other specific conditions);
- Clinical trial status;
- SNAP eligibility;
- Homelessness status; and
- Physician specialization

Most of the measures in this report comprise of simple frequencies (counts) and percentages. However, where appropriate, measures of center and spread (i.e. averages, standard deviation, median, and inter-quartile ranges) are included along with rates. ADHS analyzed data on physicians due to confidentiality considerations, and the analysis has been included in this report to satisfy the requirements of the annual report.

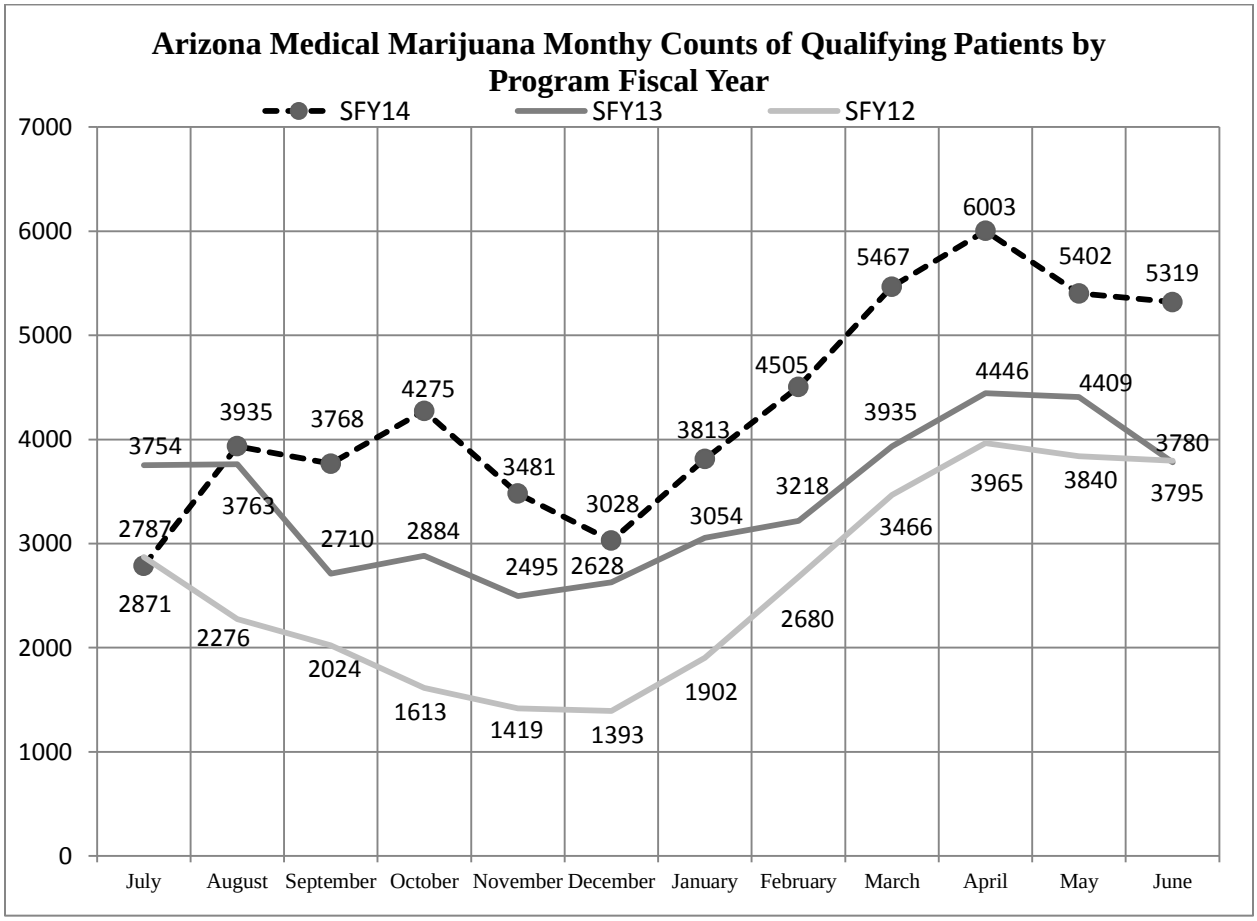
2.3 Analytic Procedures

Where applicable, both univariate and bivariate statistics are presented. Rates and chi-square tests were estimated using SAS v9.2 2008 software. Population denominators for 2012 were obtained from ADHS vital statistics.[8] ADHS estimated 'physician certification rates' based on data obtained from the Arizona Medical Board, Arizona Board of Naturopathic Medicine, and Arizona Board of Homeopathic Medicine for all active licenses as of July 30, 2014. The denominator is comprised of all qualified physician certifiers of medical marijuana as defined in A.R.S. §36-2801(12). During this time period, there were a total of 26,167 physician certifiers in the four categories: Doctor of Medicine (MD; n = 22,525), Doctor of Osteopathic Medicine (DO; n = 2,761), Doctor of Naturopathic Medicine (NMD; n = 797), and Doctor of Homeopathic Medicine (HMD; n = 84). Physician certification rates were estimated using actual number of physicians providing certifications for qualifying medical marijuana patients (i.e., numerator) divided by the total number of physicians in the population that could provide a certification in that specific category or specialization.

Results

The results discussed in this report provide an overview of the active cardholders from July 1, 2013 to June 30, 2014, which is referred to as 2014 State Fiscal Year. During this time period, there were 52,374 active cardholders, of which 51,783 qualifying patients and 591 were caregivers. During this time period, 904 dispensary agency cards were issued. An individual can be a qualifying patient, designated caregiver and/or a dispensary agent at any given time. Figures 2 and 3 below provide an overview of the monthly active cardholders during the past three state fiscal years (SFYs).

Figure 2. *Arizona Medical Marijuana qualifying patient monthly active cardholders for the past three SFYs*

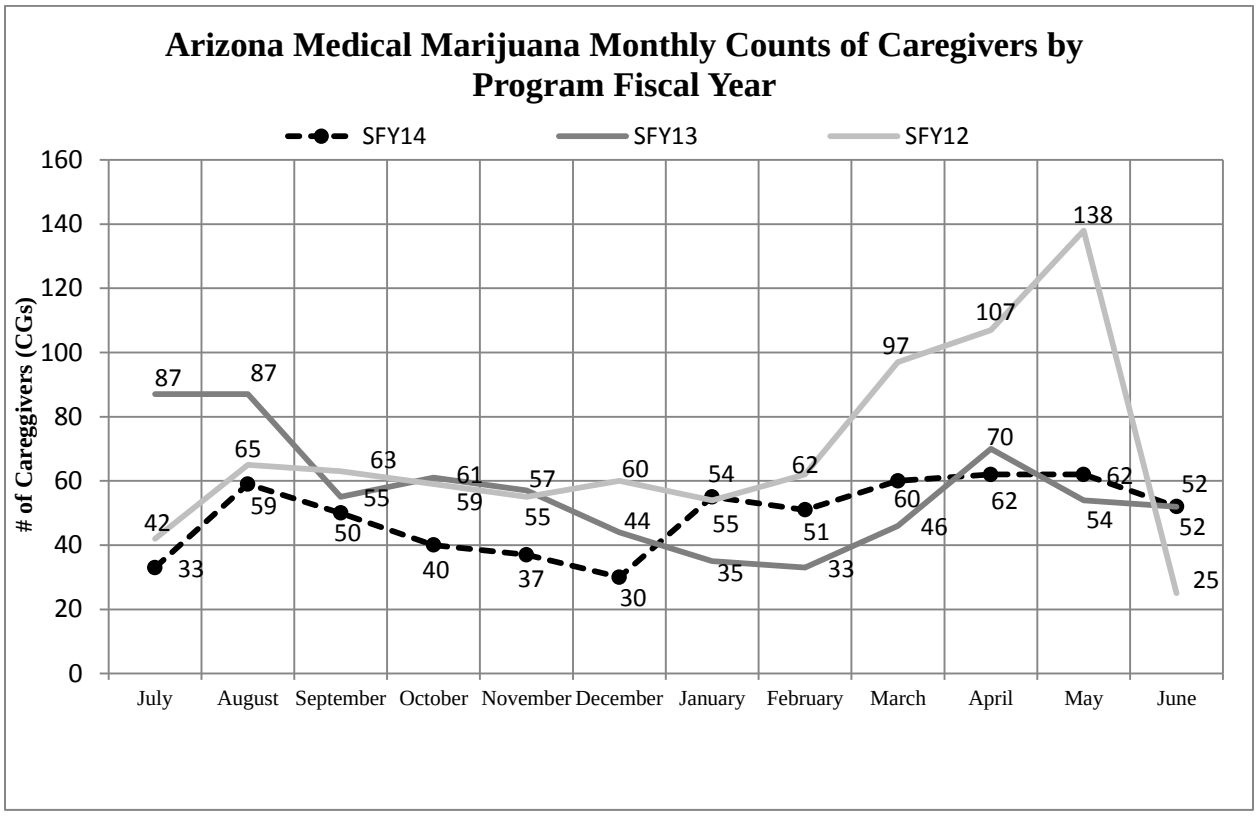


It is evident from Figure 2 that there is somewhat of a cyclical action in the number of applications of cardholders for QPs. There was a 42.2% increase in the total number of applications from the first year of the program.

A different pattern is evident for designated CGs (see Figure 3). It is important to note that a CG can have up to five QPs, and further, an individual can be a QP and/or a CG. Hence, they may be

counted as a QP and a CG. Because the CG status can change with time, to estimate a 'true count' of the number of individuals who are both CGs and QPs is difficult. The total number of cardholders declined from SFY13 to SFY14 by approximately 9%.

Figure 3. *Arizona Medical Marijuana designated caregiver monthly active cardholders for the past three SFYs*



The following sections detail the characteristics of QPs, CGs, and certifying physicians.

3.1 Characteristics of Qualifying Patients and Designated Caregivers

The Arizona Medical Marijuana Program collects a variety of patient data at the time of application that includes date of birth, gender, county of address, debilitating conditions, and details of recommending physician as per AMMA requirements. Table 8 on the following page outlines the demographic characteristics of QPs and CGs by age and gender. Thirty-two percent of the QPs were females (n = 16,314) and 33% of the CGs were females (n = 195) while a majority of the QPs and CGs were males. On average, females were more likely to be older compared to males, irrespective of whether they were a QP and/or a CG.

Table 8. *Demographic characteristics of qualifying patients and designated caregivers*

Age groups	Qualifying Patients (N =51,783)		Caregivers (N = 591)	
	Female	**Males**	**Female**	**Male**
<18 years	26 (0.2%)	66 (0.2%)	NA	NA
18-30 years	2,926 (17.9%)	9,561 (27.0%)	21 (10.8%)	102 (25.8%)
31-40 years	2,893 (17.7%)	7,305 (20.6%)	55 (28.2%)	119 (30.1%)
41-50 years	2,918 (17.9%)	5,693 (16.1%)	57 (29.2%)	79 (20.0%)
51-60 years	4,303 (26.4%)	6,686 (18.9%)	43 (22.1%)	52 (13.1%)
61-70 years	2,502 (15.3%)	5,070 (14.3%)	15 (7.7%)	34 (8.6%)
71-80 years	562 (3.4%)	928 (2.6%)	4 (2.0%)	2 (0.5%)
81+ years	184 (1.1%)	160 (0.5%)	0	0
State Totals	**16,314 (31.5%)**	**35,469 (68.5%)**	**195 (33.0%)**	**396 (67.0%)**
Mean (*SD*)*	**46.9 (*15.3*)**	**43.2 (15.7)**	**45.1 (*12.0*)**	**41.3 (*13.8*)**

Note: An individual can be both a qualifying patient and a designated caregiver

*Average age of qualifying patients and caregivers was significantly higher for females compared to males.

Approximately, 13% of the QPs (n = 6,967) applied under SNAP eligibility for a reduced fee for a card during this time period. Of those who were SNAP eligible, the majority (n = 4,165 or 60%) were males.

Figures 4 and 5 on the following pages provide an overview of the cultivation status by card type and by gender. The AMMA does not stipulate the place of cultivation for a QP and/or a designated CG, and therefore, one cannot infer that an individual cardholder actually cultivates marijuana in the same place as his or her residence. From July 2013 to June 2014, approximately 4% (n = 1,960) of the QPs and almost 62% CGs (n = 366) were authorized to cultivate.

A primary component of the AMMA implementation became reality during 2012 with the physical establishment and opening of Medical Marijuana Dispensaries. Since the Arizona legislation prohibits cultivation within a 25-mile radius of a dispensary, the proportion of active cardholders authorized to cultivate marijuana for medicinal purposes should be different for two time periods. These figures indicate the expected effect for the 25-mile radius rule. While there is a substantial decline in authorization to cultivate among QPs, the effect is less evident among CG's. Appendix B depicts the number of open and operating dispensaries by the end of June 2014 and the 25-mile radius cultivation restriction for qualifying patients (and subsequently, designated caregivers).

Figure 4. *Differences in cultivation status for qualifying patients and designated caregivers for the past three SFYs*

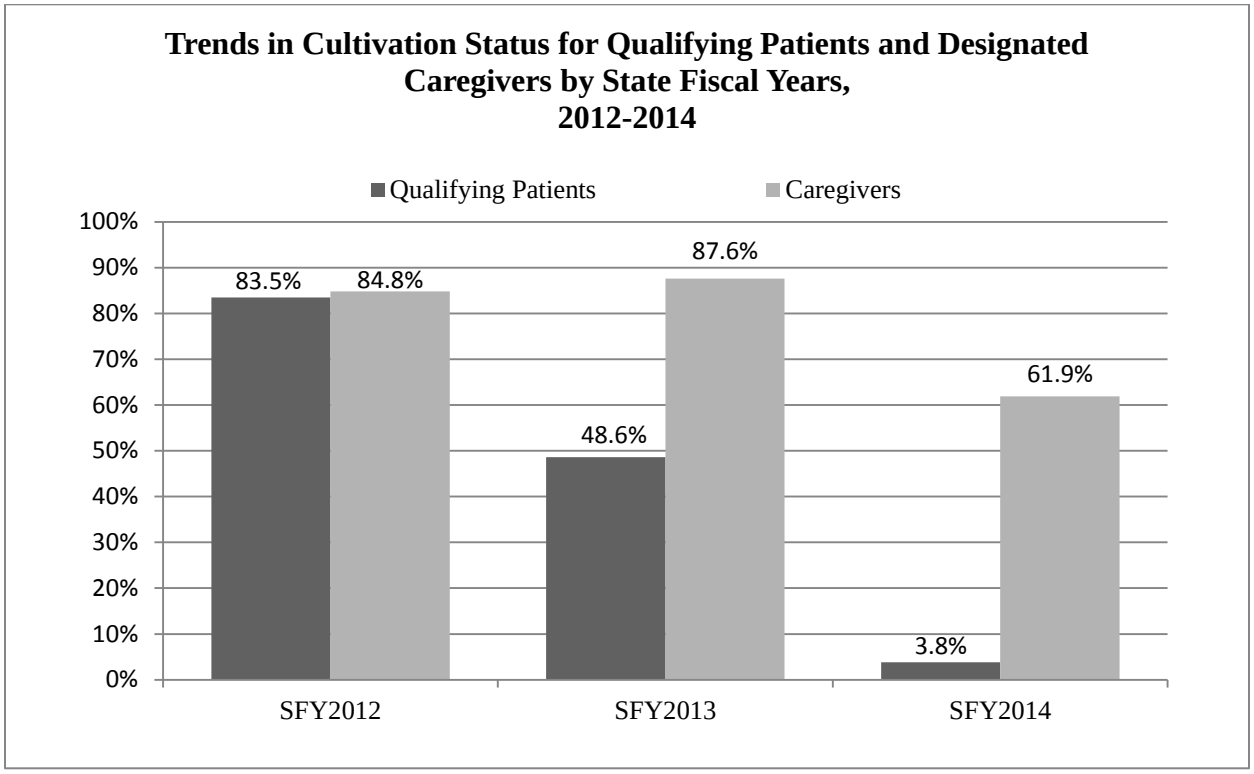


Figure 5. *Arizona Medical Marijuana qualifying patients' and designated caregivers' cultivation status by gender*

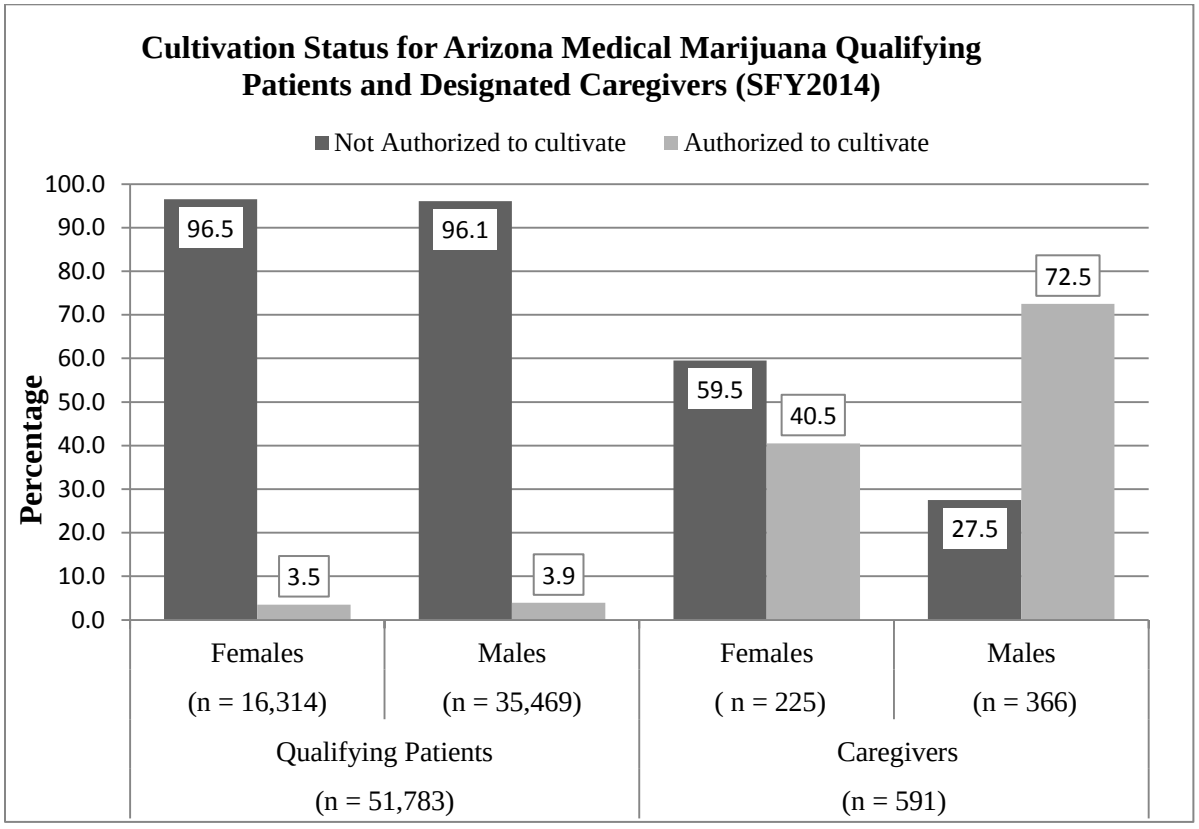


Table 9 provides an overview of QPs and CGs by county of residence along with their cultivation status. Expressing the number of medical marijuana QPs as a proportion of the population in the county is a more appropriate reflection of the prevalence of cardholders than a simple proportion. For instance, while Maricopa County had the largest percentage of QPs (n = 31,428; ~61%), followed by Pima County (n = 6,451; ~13%), when adjusted for the total population (as a per capita measure), Maricopa has 8.0 QPs per 1000 residents and Pima has 6.5 QPs per 1000 residents. This is more reflective of the total population.[8]

Qualifying patients per 1,000 residents were highest in Yavapai County (14.9), followed by Gila County (14.8) and Coconino (12.5). Yuma (3.3), Santa Cruz (4.1), and Pinal (5.5) Counties had the lowest qualifying patients per 1,000 residents.

Similarly, QPs authorized to cultivate were highest in Navajo County (4.0 per 1000 residents), followed by Graham County (3.2 per 1000 residents), and Apache (3.0 per 1000 residents), followed closely by Greenlee (2.9 per 1000 residents).

Table 9. *Arizona medical marijuana qualifying patients, designated caregivers, and the qualifying patient cultivation status by county of residence*[8]

Residence County	Estimated Population in 2013	Qualifying Patients			Caregivers			Authorized to Cultivate		
		Counts	Percent	QPs per 1000 residents	Counts	Percent	CGs per 1000 residents	Counts	Percent	Cultivation status per 1000 residents
Apache	72,180	434	0.8%	6.01	6	1.0%	0.08	213	10.9%	2.95
Cochise	130,906	812	1.6%	6.20	6	1.0%	0.05	86	4.4%	0.66
Coconino	135,695	1689	3.3%	12.45	31	5.3%	0.23	109	5.6%	0.80
Gila	53,670	797	1.5%	14.85	11	1.9%	0.21	120	6.1%	2.24
Graham	37,872	290	0.6%	7.66	4	0.7%	0.11	120	6.1%	3.17
Greenlee	10,913	78	0.2%	7.15	0	0.0%	0	32	1.6%	2.93
La Paz	20,979	172	0.3%	8.20	0	0.0%	0	44	2.2%	2.10
Maricopa	3,944,859	31428	60.7%	7.97	340	57.5%	0.09	162	8.3%	0.04
Mohave	203,592	2378	4.6%	11.68	18	3.1%	0.09	303	15.5%	1.49
Navajo	108,694	1029	2.0%	9.47	18	3.1%	0.17	431	22.0%	3.97
Pima	996,046	6451	12.5%	6.48	88	14.9%	0.09	58	3.0%	0.06
Pinal	398,813	2145	4.1%	5.45	26	4.4%	0.53	20	1.0%	0.05
Santa Cruz	49,218	201	0.4%	4.08	2	0.3%	0.04	6	0.3%	0.12
Yavapai	213,294	3182	6.1%	14.92	35	5.9%	0.16	158	8.1%	0.74
Yuma	209,323	690	1.3%	3.30	5	0.9%	0.02	98	5.0%	0.47
Unknown		7	0.0%		1	0.2%				
State Totals	**6,581,054**	**51,783**	**100%**	**7.87**	**591**	**100%**	**0.09**	**2326**	**4.4%**	**0.30**

3.2 Nature of Debilitating Medical Conditions among Qualifying Patients

As per AMMA requirements, ADHS collects information about 13 debilitating medical conditions: (i) cancer; (ii) Hepatitis C; (iii) cachexia; (iv) seizures; (v) glaucoma; (vi) sclerosis; (vii) Alzheimers; (viii) severe and chronic pain; (ix) muscle spasms; (x) HIV; (xi) AIDS; (xii)

Crohn's disease; and (xiii) nausea. Certifying physicians can select more than one of these 13 conditions. Table 10 on the following page provides an overview of the unique debilitating medical conditions of the QPs during this time period.

The majority of the qualifying patients (n = 41,284; ~80%) had one debilitating medical condition with the remaining 20% reporting two or more conditions. Approximately 71% of the qualifying patients (n = 36,577) indicated “severe and chronic pain” as the only debilitating medical condition. Cancer was the second largest unique debilitating condition (n = 1,332; 2.6%), followed by Hepatitis C (n = 726; 1.4%).

With regards to multiple conditions, severe and chronic pain in combination with one other debilitating medical condition accounted for 17% of the total (n = 8,836) and combinations without mention of severe and chronic pain accounted for approximately 1% (n = 557) of all the debilitating medical conditions. In essence, 90% of all debilitating medical conditions had severe and chronic pain as a unique and/or multiple condition.

Table 10. *Reported debilitating medical conditions for qualifying patients of medical marijuana*

Nature of Debilitating Conditions	Qualifying Patients	
	Count	**Percent**
Unique Conditions	**41,284**	**79.7%**
Cancer	1332	2.6%
Hepatitis C	726	1.4%
Cachexia	59	0.1%
Seizures	480	0.9%
Glaucoma	464	0.9%
Sclerosis	16	0.1%
Alzheimer's	24	0.1%
Severe and chronic pain	36,577	70.6%
Muscle Spasms	619	1.2%
HIV/AIDS	276	0.5%
Crohn's Disease	254	0.5%
Nausea	457	0.9%
Multiple conditions	**10,499**	**20.3%**
Severe and chronic pain in combination with one other debilitating condition	8,836	17.1%
Severe and chronic pain in combination with two other debilitating conditions	965	1.9%
Severe and chronic pain in combination with three other debilitating condition	117	0.2%
Severe and chronic pain in combination with four other debilitating condition	24	< 0.1%
Combinations without mention of severe and chronic pain	557	1.1%
State Totals	**51,783**	**100%**

With regards to debilitating medical conditions, age and gender play a significant role. The following paragraphs detail the nature of debilitating conditions for QPs from the July 2013 to June 2014 time period. For purpose of brevity, debilitating medical conditions were classified in two broad categories: a) unique and b) two or more conditions. This type of classification allowed examining any association between age and gender with one or more debilitating condition.

Figures 6 and 7 display the debilitating medical conditions of the QPs by age and gender. Qualifying patients who indicated only one unique debilitating medical condition were more likely to be older (average age 44.7 $\pm$ 15.6 years compared to 43.0 $\pm$ 16.0 years). Almost 80% of the males indicated one unique debilitating condition compared to 79% of females, while nearly 21% of females indicated having two or more debilitating conditions compared to 20% of males. In general, females were 10% more likely than males to indicate two or more debilitating conditions, and the difference was statistically significant with $\chi^2 = 16.5$ (1) $p < 0.001$.

Figure 6. *Debilitating medical conditions by age of the qualifying patient*

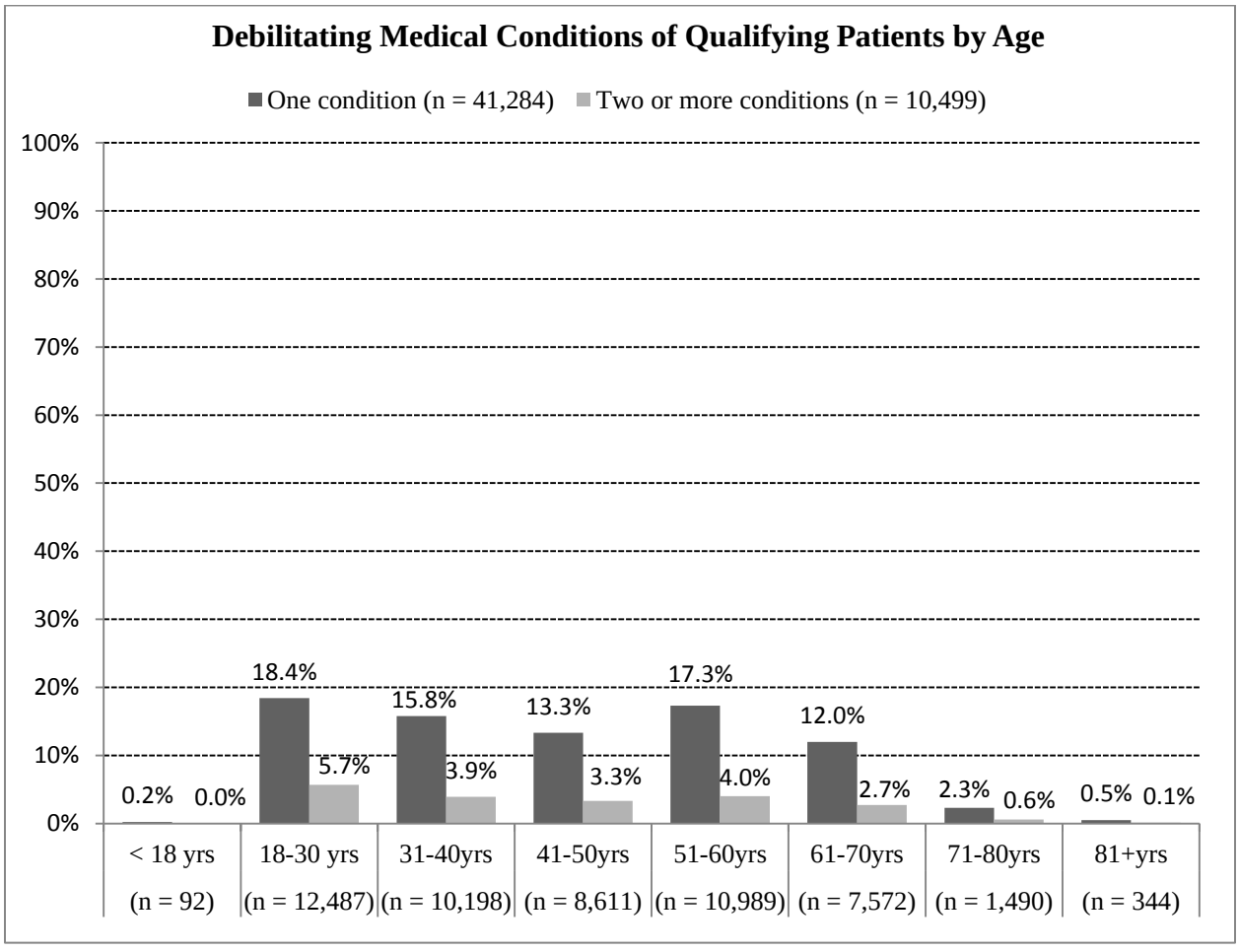


Figure 7. *Debilitating medical conditions by gender of the qualifying patient*

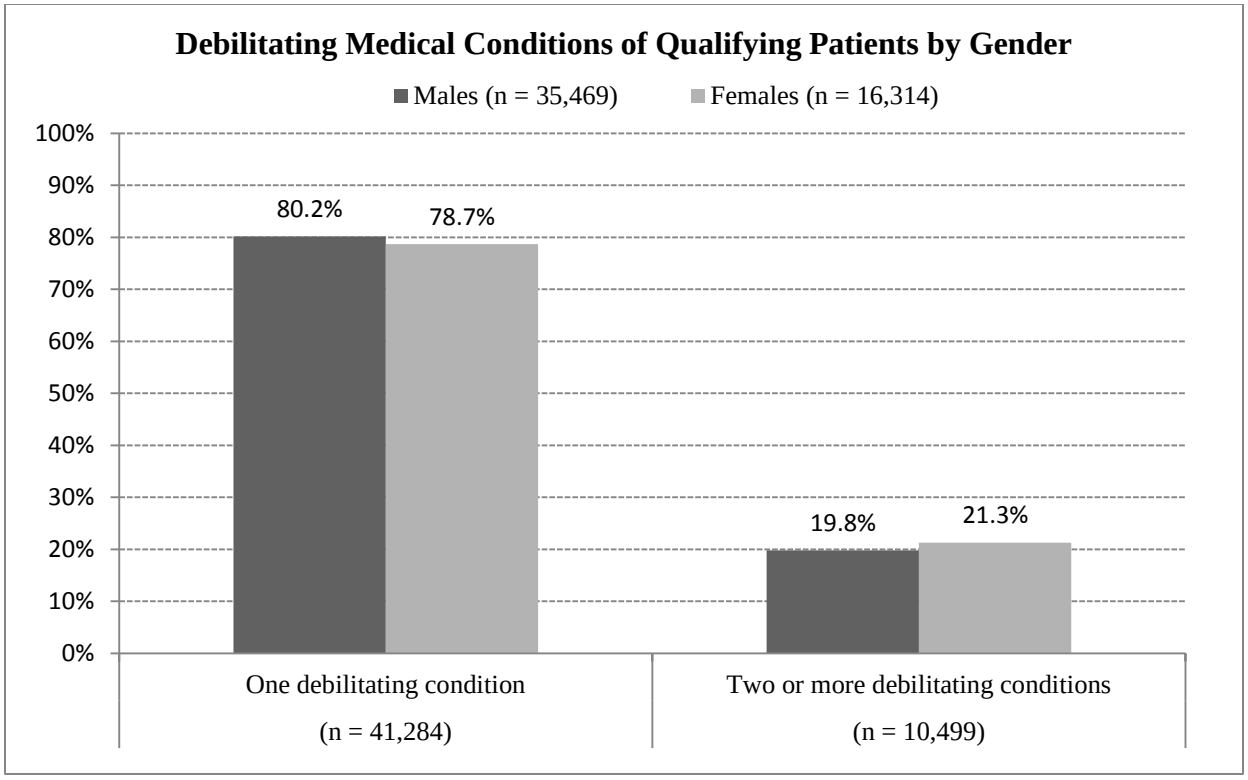


Figure 8 provides an overview of debilitating conditions with and without any mention of severe and chronic pain by age. It is evident that those with severe and chronic pain were more likely to be younger (average age 43.6 years ± 15.5 years) than older adults (average age 50.6 years ± 15.9 years, $p<0.0001$).

Figure 8. *Debilitating medical condition with and without mention of severe and chronic pain*

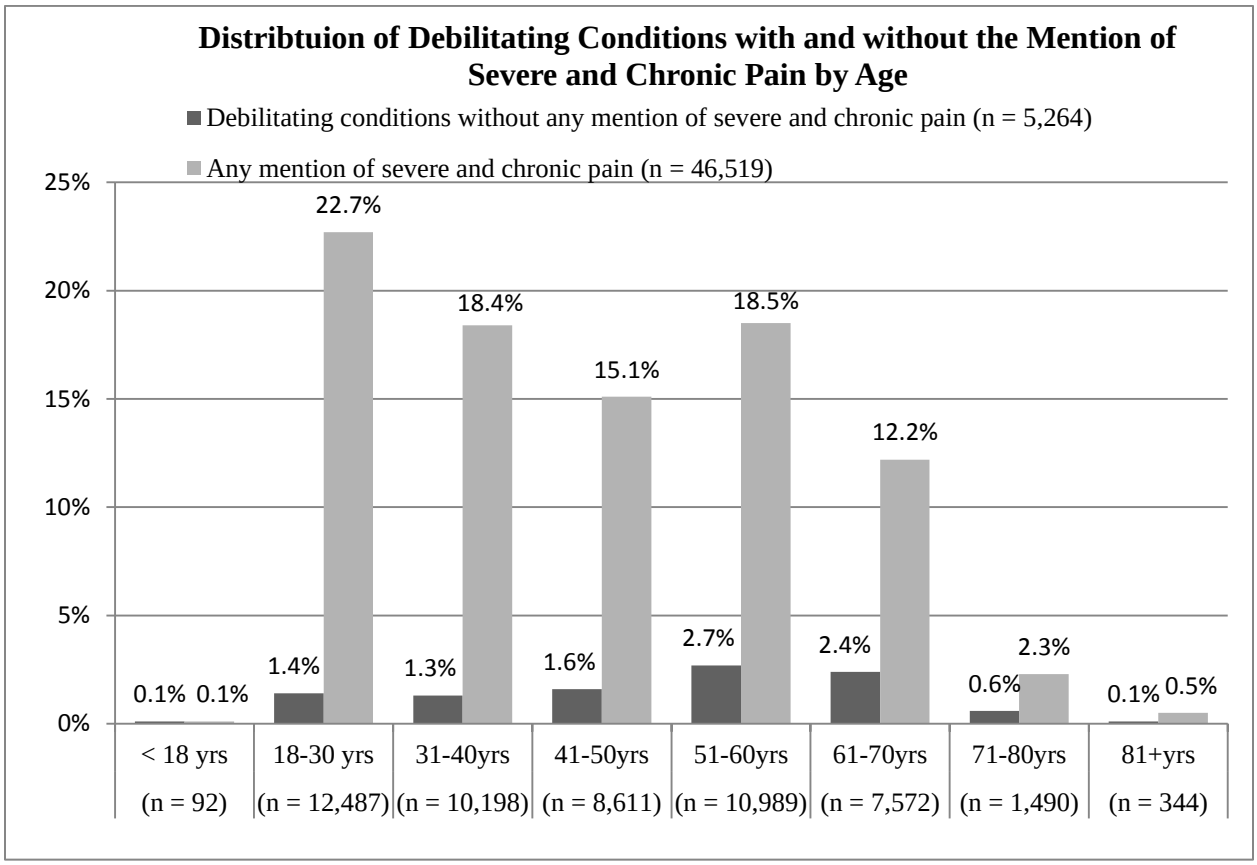


Table 11 on the following page gives an overview of debilitating medical conditions for QPs less than 18 years of age in order of frequency. As noted earlier, there has been a steady increase in the number qualifying patients who are minor. In 41.3% of the cases (n = 38) "seizures" was listed as a unique debilitating condition, followed by 28% (n = 26) of the cases "any debilitating medical condition that results in severe and chronic pain," was listed as a unique debilitating condition. About 17% of the cases had two or more debilitating conditions was listed (n = 16). Among those reporting two or more debilitating conditions, 12% (n = 11) listed severe and chronic pain in combination with another unique debilitating condition as the top condition while three percent (n = 3) had no two or more debilitating conditions without any mention of severe and chronic pain.

Table 11. *Debilitating medical conditions for qualifying patients who are minors*

Nature of Debilitating Condition	Minor Qualifying Patients (<18 years)	
	Count	Percent
Unique conditions[†]	**76**	**82.6%**
Cancer	8	8.7%
Hepatitis C	0	0.0%
Cachexia	0	0.0%
Seizures	38	41.3%
Glaucoma	0	0.0%
Sclerosis	0	0.0%
Alzheimers	0	0.0%
Severe and chronic pain	26	28.3%
Muscle Spasms	3	3.3%
HIV/AIDS	0	0.0%
Crohn's Disease	0	0.0%
Nausea	1	1.1%
Multiple conditions[‡]	**16**	**17.4%**
Severe and chronic pain in combination with one other debilitating condition	11	12.0%
Severe and chronic pain in combination with two other debilitating condition	2	2.2%
Severe and chronic pain in combination with three other debilitating condition	0	0.0%
Severe and chronic pain in combination with four other debilitating condition	0	0.0%
Combinations without mention of severe and chronic pain	3	3.3%
State Totals	**92**	**100%**

[†]Conditions are unique as in, of the 76 minor qualifying patients 8 indicated cancer as the only debilitating medical condition.

[‡]Multiple conditions are two or more conditions specified by a qualified patient as in, of the 92 minor qualifying patients 16 indicated having at least two or more of the listed debilitating conditions.

The AMMA allows (see A.R.S. §36-2804.02(B)) individual QPs to be notified of any clinical studies on a voluntary basis. During July 2013 to June 2014, out of the 51,783 QPs, 7,791 (~15%) QPs requested to be notified of clinical studies. The number of QPs requesting to be notified of clinical studies during year two was significantly less than the 10,172 (approximately 35%) of the QPs requesting such notification during year one of AMMA, and proportionately

less than QPs requesting notification during year two (15% compared to 18% in SFY13). Table 8 provides an overview of the notifications of clinical studies by QP's age, gender, and debilitating conditions. There was a significant difference by gender in requesting clinical trial notification χ^2 = 109 (1) p <0.0001. Although a greater number of males requested clinical trial notification, the proportion of females requesting trial notification was greater than the proportion of males requesting such notification (17.5% versus 13.9%). QPs with only one debilitating medical condition were slightly more likely to request clinical study notification in comparison to QPs with two or more conditions, χ^2 = 4.06 (1) p = 0.04.

Table 12. *Notification of clinical studies by qualifying patient's age, gender, and debilitating medical conditions*

Qualifying patient characteristics	Clinical study notification			
	Yes (n = 7,791)		No (n = 43,992)	
	Count	Percent	Count	Percent
Age (in years)				
<18 yrs	11	12.0%	81	88.0%
18-30 yrs	1,680	13.5%	10,807	86.5%
31-40 yrs	1,589	15.6%	8,609	84.4%
41-50 yrs	1,313	15.2%	7,298	84.8%
51-60 yrs	1,728	15.7%	9,261	84.3%
61-70 yrs	1,209	16.0%	6,363	84.0%
71-80 yrs	223	15.0%	1,267	85.0%
81+ yrs	38	11.0%	306	89.0%
Gender †				
Females	2,849	17.5%	13,465	82.5%
Males	4,942	13.9%	30,527	86.1%
Debilitating conditions ‡				
Unique condition	6,277	15.2%	35,007	84.8%
Two or more conditions	1,514	14.4%	8,985	85.6%

†Statistically significant difference between females and males. Females were more likely than males to elect for for clinical study notifications.

‡Statistically significant difference between QPs with one unique debilitating condition compared to QPs with two or more debilitating conditions. A greater proportion of QPs with one unique debilitating condition elected to be notified for clinical trials compared to those QPs with two or more debilitating conditions (p = 0.04).

3.3 Registry Identification Card(s) Revoked

From July 1, 2013 through June 30, 2014, eight QP cards, 11 separate CG cards, and three DA cards were revoked.

There are two types of revocations for Registry Identification Cards.

- Designated Caregiver Revocations (Excluded Felony Offenses) – ADHS will seek a revocation when a CG or a DA has been found to have an excluded felony offense and is thus prohibited by statute to be a CG or DA under the AMMA.
- Law Enforcement Revocations – A revocation may be sought when ADHS receives information from a law enforcement entity that a cardholder has violated a provision(s) under the AMMA.

3.4 Characteristics of Physicians Providing Written Certifications

Table 13 on the following page provides an overview of the total number of medical marijuana certifications during from July 2013 through June 2013. The total certifications in the table reflect the total number of patients certified by each physician type. Six hundred fifteen (n = 615) physicians certified 51,747 patients during this time period with an overall average of 77 patients per physician (± 84). A closer examination of Table 13 indicates that 130 Naturopathic Physicians (NMDs) certified 40,057 patients during this time period with an average certification of 308 patients per NMD, while 408 Medical Doctors (MDs) certified 8,510 patients with an average of 21 certifications per MD during the same time period. Similarly, 70 Osteopathic Physicians (DOs) certified 3,137 patients with an average certification of 45 patients per DO, and seven Homeopathic Physicians (HMDs) certified 43 patients with an average of six patients per HMD.

It is evident from Table 13 that the distribution is heavily skewed towards a select few categories of physicians. Slightly over 75% of the patient certifications (40,051 / 51,747) were issued by NMDs, followed by approximately 16% (8,150 / 51,747) by MDs; although, MDs accounted for almost 65% (408 / 615) of the total physician certifiers.

Table 14 provides an overview of the 25 most frequent physician certifiers who accounted for 67% of the total certifications (34,765). For instance, 21 NMDs certified 28,306 patients accounting for approximately 71% of the total patient certifications in the NMD category, while three MDs accounted for 3,755 patient certifications accounting for 44% of the total patient certifications in the MD category. One DO accounted for 2,704 patient certifications accounting for slightly over 85% of the total patient certifications in the DO category.

Table 13. *Characteristics of physician certifications by type/specialization*

Type of Physician Certifier	Medical Marijuana certifications during July 2013 and June 2014					25 most frequent certifiers of Medical Marijuana		
	Counts of physician certifiers[†]	Total number of certifications by physician type[‡]	Average number of certifications[§]	Total number of eligible physician certifiers in the State[¶]	Rate* (Certifiers per 1000 physicians)	Counts of most frequent physician certifiers	Number of certifications by physician type	Percent of total certifications within specialization[φ]
Doctor of Medicine (MD)	408	8,510	20.86	22,525	18.11	3	3,755	44%
Doctor of Naturopathic Medicine (NMD)	130	40,057	308.13	797	163.11	21	28,306	71%
Doctor of Osteopathic Medicine (DO)	70	3,137	44.81	2,761	25.35	1	2,704	86%
Doctor of Homeopathic Medicine (HMD)	7	43	6.14	84	83.33	0	0	0%
Overall State Totals	**615**	**51,747**	**84.14**	**26,167**	23.50	**25**	**34,765**	67%

[†]Counts are unique by type of physician certifiers and are identified using license number.

[‡]Total number of certifications during July 2013 to June 2014 for qualifying individual patients. The totals are slightly different from the total QPs (i.e. 51,783) due to missing data on 36 cases.

[§]Average number of certifications is total number of certifications in each category divided by the unique count of physicians in that category (i.e. 8,510/408 = 20.86). On average each MD certified by 21 patients.

[¶]Data for total number of physicians is periodically obtained from Arizona Medical Board, Arizona Board of Naturopathic Medicine, Arizona Board of Homeopathic Medicine. The total numbers reflect data available as of July 2014.

*Rates are calculated as the unique count of physician certification divided by total number of active physicians in that category (for example, 408/8,510 = 18.11) per 1000.

[φ]Percent of total certifications within specialization reflects the total number of certifications by most frequent physician certifiers divided by total number of physician certifications within the same specialization completed during the time-period. For example, three MDs accounted for 55% of the total certifications in the MD category (i.e. 3,538/6,434).

Figure 9 below displays the most frequent physician certifiers by type to further illustrate the point made in Table 13.

Figure 9. *Most frequent recommending physicians by licensing board*

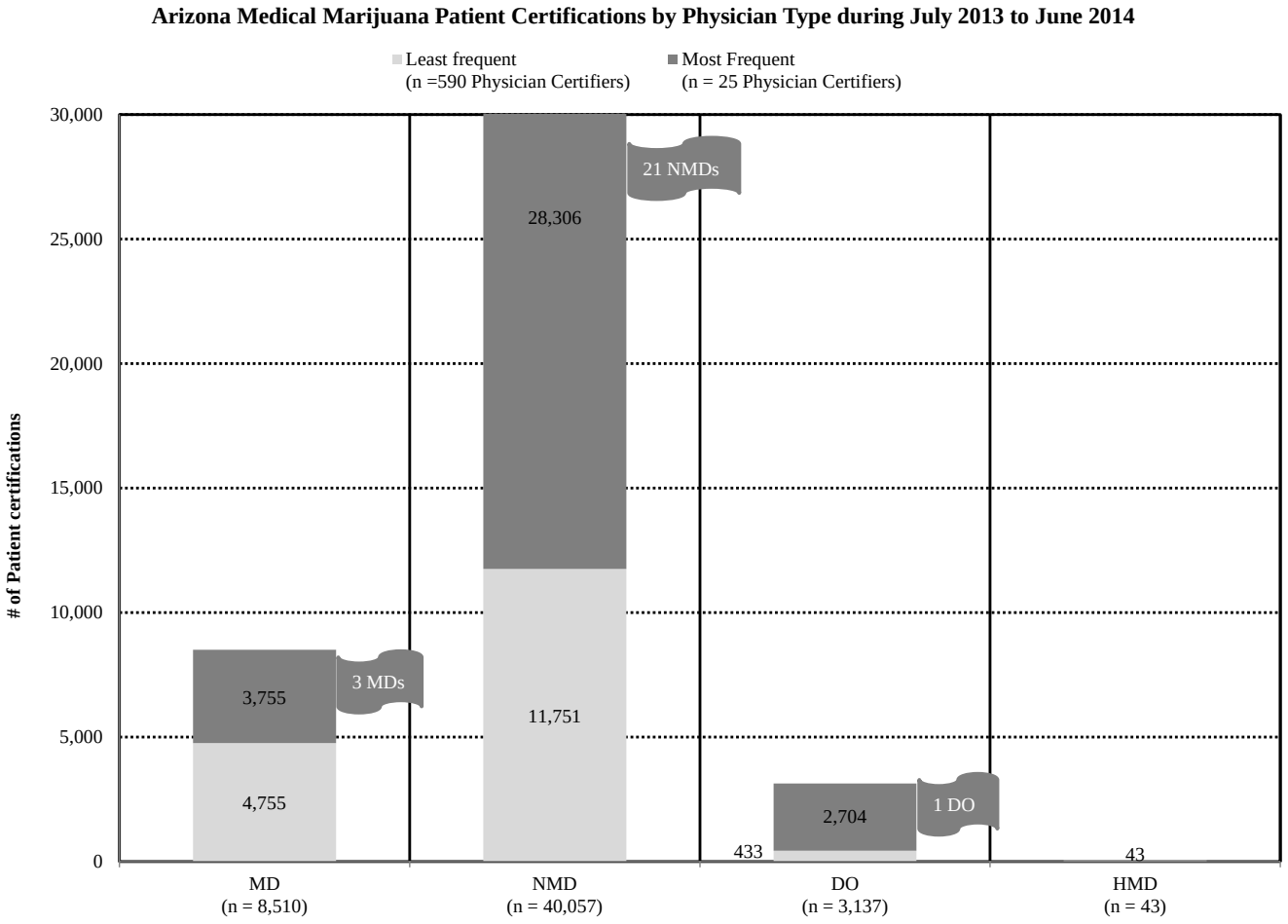


Table 14 on the following page lists the most frequent recommending physicians in order of number of certifications from July 2013 to June 2014. On a bi-annual basis, ADHS conducts an analysis of the most frequent physician certifiers and works with the Arizona Board of Pharmacy to assess whether these certifying physicians have been accessing the controlled substances database. Based on information received from the Arizona Board of Pharmacy, each Arizona physician licensing board is notified of any discrepancies and possible further action. Since the program's inception in April 2011, ADHS has referred more than 30 physicians to their respective physician licensing boards for this issue.

Table 14. *Twenty-five most frequent recommending physicians of medical marijuana*

25 Most Frequent Certifiers of Medical Marijuana			
#	**Physician type**	**Patients certified**	**Percent within most frequent**
1	NMD	2,899	8.3%
2	NMD	2,705	7.8%
3	DO	2,704	7.8%
4	NMD	2,257	6.5%
5	NMD	2,164	6.2%
6	MD	1,981	5.7%
7	NMD	1,930	5.6%
8	NMD	1,608	4.6%
9	NMD	1,541	4.4%
10	NMD	1,535	4.4%
11	NMD	1,367	3.9%
12	NMD	1,036	3.0%
13	MD	1,003	2.9%
14	NMD	987	2.8%
15	NMD	957	2.8%
16	NMD	910	2.6%
17	NMD	868	2.5%
18	NMD	865	2.5%
19	NMD	838	2.4%
20	NMD	799	2.3%
21	NMD	796	2.3%
22	MD	771	2.2%
23	NMD	756	2.2%
24	NMD	744	2.1%
25	NMD	744	2.1%
Total Certifications[§]		**34,765**	**100%**

[§]These certifications account to 60 percent of all the certifications (i.e. 51,783) during July 2013 and June 2014.

Table 15 on the following page provides an overview of the physician recommendations for different debilitating medical conditions. As noted earlier, severe and chronic pain is consistently the highest reported debilitating medical condition irrespective of the physician type. Approximately 88% of the DOs (n = 2,116) recommended severe and chronic pain as a unique debilitating medical condition compared to MDs (~84%) and NMDs (~90%).

Table 15. *Debilitating medical conditions by recommending physician type*

Nature of Debilitating Medical Conditions[§]	Physician Certifications for Debilitating Medical Conditions								Totals	Percent
	DO		MD		NMD		HMD			
	Count	Percent	Count	Percent	Count	Percent	Count	Percent		
Cancer	100	4.2%	299	4.5%	928	2.9%	5	2.9%	**1332**	**2.6%**
Hepatitis C	45	1.9%	166	2.5%	511	1.6%	4	2.4%	**726**	**1.4%**
Cachexia	9	0.4%	23	0.3%	26	0.1%	1	0.6%	**59**	**0.1%**
Seizures	25	1.0%	76	1.1%	378	1.2%	1	0.6%	**480**	**0.9%**
Glaucoma	29	1.2%	87	1.3%	345	1.1%	3	1.8%	**464**	**0.9%**
Sclerosis	0	0.0%	4	0.1%	12	0.0%	0	0.0%	**16**	**0.1%**
Alzheimers	4	0.2%	5	0.1%	15	0.0%	0	0.0%	**24**	**0.1%**
Severe and chronic pain	2,116	87.7%	5,583	83.7%	28,754	89.8%	124	72.9%	**36,577**	**70.6%**
Muscle spasms	36	1.5%	188	2.8%	367	1.1%	28	16.5%	**619**	**1.2%**
HIV/AIDS	5	0.2%	86	1.3%	183	0.6%	2	1.2%	**276**	**0.5%**
Crohn's disease	16	0.7%	47	0.7%	191	0.6%	0	0.0%	**254**	**0.5%**
Nausea	27	1.1%	110	1.6%	318	1.0%	2	1.2%	**457**	**0.9%**
Two or more debilitating conditions	811	25.2%	1,590	19.2%	8,048	20.1%	50	22.7%	**10,499**	**20.3%**
Overall State Totals	**3,223**	**100.0%**	**8,264**	**100%**	**40,076**	**100%**	**220**	**100%**	**51,783**	**100.0%**

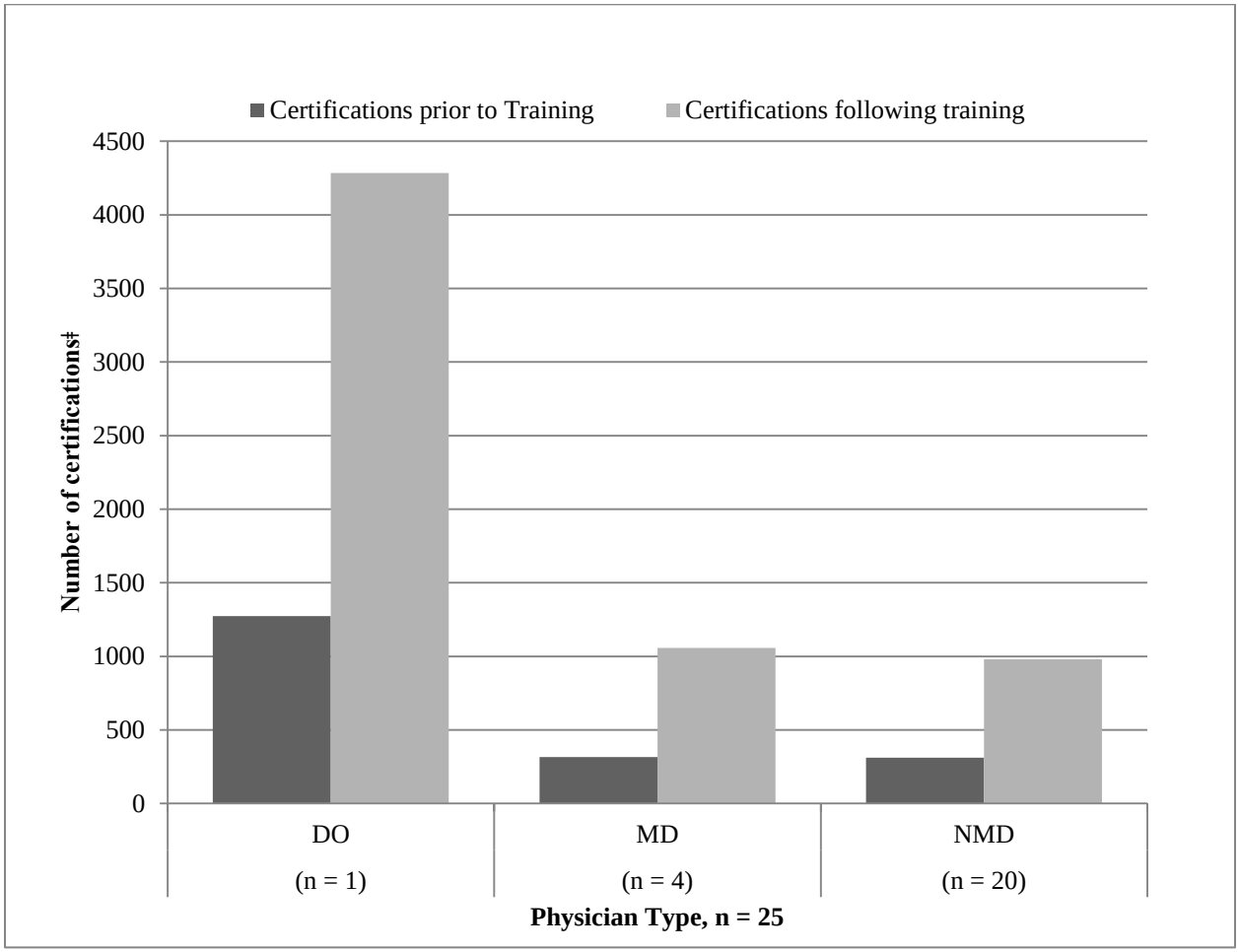
[§]Conditions are unique debilitating medical conditions unless noted otherwise.

Brief Study on Top 25 Providers

As indicated in SFY2013, monitoring of Physician certifications indicate a large range in number of certifications by provider type. Additionally, a few providers were responsible for certifying a great number of patients. The relevant Medical Board of each Provider type were asked to request that the high certifying providers complete the AMMA Continuing Medical Education modules to ensure complete understanding of certifying provider responsibilities. A brief project compared the certifications completed by the twenty-five most frequent certifying providers in a time period before and after completion of the AMMA Educational modules. It should be noted that the time periods were unequal with the time period of assessment being approximately 16 months before the educational training and approximately ten months following the training.

Figure 10 summarizes the change in the number of certifications by provider type among the twenty-five most frequent certifying providers before and after completing the AMMA educational modules. The number of certifications following completion of the training were significantly greater ($p<0.00001$) regardless of provider type despite the shorter assessment time period following the training.

Figure 10. *Change in certifications among most frequent recommending physicians following completion of the Medical Marijuana Training Modules*



† Certifications by each provider type significantly increased following completion of the AMMA Provider Educational Training Modules.

‡ The time period of assessment was a sixteen month period prior to the CME modules and approximately a significantly shorter ten month period following the training.

3.5 Registered Non-Profit Medical Marijuana Dispensaries

Since July 1, 2012, ADHS has issued 100 dispensary registration certificates. See Appendix D for the current status (allocated, operating, or vacant) of the 126 CHAA's in Arizona.

3.6 Non-profit Medical Marijuana Dispensary Agents

From July 1, 2013 through June 30, 2014, ADHS issued 904 DA Registry Identification Cards.

Discussion and Recommendations

Between July 1, 2013 and June 30, 2014, there were a total of 52,374 active cardholders, which included 51,783 qualifying patients and 591 caregivers. ADHS has been administering the program to support Arizona residents for whom medical marijuana may provide therapeutic and palliative benefit. The majority of the qualifying patients (n = 41,284; ~80%) had one debilitating medical condition with the remaining 20% reporting two or more conditions. Approximately 71% of the qualifying patients (n = 36,577) indicated "severe and chronic pain" as the only debilitating medical condition. Cancer was the second largest unique debilitating condition (n = 1,332; 2.6%), followed by Hepatitis C (n = 726; 1.4%). Ninety percent of all debilitating medical conditions had severe and chronic pain as a unique and/or multiple condition.

Given that "severe and chronic pain" accounts for the majority of the debilitating condition either as a unique and/or in combination, it is important to understand the etiology of how medical marijuana may influence pain management. One plausible way to capture a more nuanced classification of debilitating medical condition is standardizing the collection of debilitating medical conditions through *International Classification of Diseases, Tenth Revision* (ICD 10) codes, which would allow comparison of incidence of certain debilitating medical conditions through other available data sources at ADHS. However, current Arizona Medical Marijuana Act (AMMA) provisions limit the scope for any such analysis. Conducting any epidemiological analyses to understand public health and safety implications are difficult unless AMMA statutory elements are amended (i.e., must be in furtherance of the act). Public health impacts to examine are the relationship of poisonings and the decrease in prescription drug use among qualifying medical marijuana patients prior to and post implementation of AMMA compared to the general population. For instance, recent evidence from Colorado suggests that the proportion of ingestion visits to Emergency Departments in patients younger than 12 years (age range, 8 months to 12 years) were related to marijuana exposure increased after decriminalization of medical marijuana in Colorado.[9]

Since the passage of the law, in two instances (Laws 2011, Chapter 112 and Laws 2011, Chapter 336), modifications to AMMA were put in place to clarify ADHS' authority to share doctor information with the various medical boards and required ADHS to allow employer access to the medical marijuana database to verify if employees were valid cardholders. Additionally, Laws 2011, Chapter 94 modified the controlled substances database to include medical marijuana to allow physicians to make more informed decisions about patient care. Without these modifications, it would have been difficult to assess the high frequency physician certifications noted in this report and/or to report them to their respective medical boards.

Year One Recommendations and Updates

Recommendation 1: Develop intensive training for physicians who are high volume certifiers in conjunction with respective licensing medical boards for better patient provider coordination and adherence to AMMA statutory requirements. Leverage existing contracts with the Arizona Board of Pharmacy to more quickly identify physicians who may be making false attestations on physician certifications.

> *Update:* ADHS has contracted with the University of Arizona to develop and implement an online Continuing Medical Education (CME) Module regarding the physician's role and expectations under the Arizona Medical Marijuana Program. To date, more than 20 physicians have completed the module. ADHS has also continued the contract with the Arizona Board of Pharmacy to employ one dedicated, full-time pharmacist to assist with audit requests from ADHS. The contract has also provided for technical improvements to the Arizona Board of Pharmacy's Controlled Substances Database.

Recommendation 2: Given the overwhelming recommendations for patients with "severe and chronic pain", explore the feasibility of further examining the nature of debilitating conditions. For instance, the current incident rate for cancer in Arizona (5-year average) was 390 per 100,000 (CI: 387.8-392.1) with an average annual count of 25,432 cases.[10] However, in the medical marijuana database, there were only 467 patients with Cancer as a unique debilitating condition.

> *Update:* Please see Year Two Recommendation One below for the extension of this Recommendation.

Recommendation 3: Explore the feasibility of temporary suspensions of cards. For revocations, the current AMMA statute provides only two possibilities with a cardholder status as either active and/or revoked. For instance, during the reporting period, there was one revocation for a QP and two revocations for designated CGs. In either case, there are a series of administrative actions that need to occur before a card is revoked, including the possibility of appeals through Administrative Hearing and Superior Court. During this time lag, a card remains in "active" status (i.e. the cardholders are protected by the AMMA) until a final decision is made; thus, providing immunity to potential misuse of AMMA provisions.

> *Update:* Currently, without a legislative change or amendment to the AMMA, a temporary suspension of cards is not feasible.

Recommendation 4: Amend AMMA provisions to explore the feasibility of conducting epidemiological analysis of medical marijuana users to understand public health and safety concerns. For instance, epidemiological analyses can shed light on: a) whether use of medical marijuana has an effect on opiate dependency; b) whether use of medical marijuana has an

impact on motor vehicle traffic injuries; and (c) whether use of medical marijuana has an impact on pregnancy outcomes or breastfeeding.

> *Update:* Currently, without a legislative change or amendment to the AMMA, conducting epidemiological analyses of medical marijuana users with other public health and safety data is not feasible.

Year Two Recommendations

Recommendation 1: Given the continued overwhelming recommendations for patients with "severe and chronic pain", explore the feasibility of collecting a more nuanced data through ICD10 codes.

> *Update:* ADHS does not have the authority in the Arizona Administrative Code to require physicians to list ICD codes on the physician certification form.

Recommendation 2: Propose Arizona Administrative Code rule changes to include the ability to appeal for dispensary certificate holders, eliminating the former "Year 2" selection criteria for dispensaries by focusing on vacant CHAAs rather than patient density, removing the lifetime disqualification for those applicants that receive a dispensary registration certificate but do not execute, and modifications to the current 25-mile radius rule.

> *Update:* This recommendation is being addressed in the new proposed rulemaking for the medical marijuana Arizona Administrative Code.

Year Three Recommendations

Recommendation 1: Develop and implement a comprehensive Disaster Recovery System for medical marijuana applications and systems. This project will involve: installing and testing equipment; scheduling maintenance downtimes to test moving the servers to the alternate location; and developing and testing failover scenarios.

Recommendation 2: Proposed Arizona Administrative Code rule changes. Among others, a summary of the proposed rule changes include:

- Removing the prohibition of an individual who was a Principal Officer/Board Member of a dispensary that failed to obtain an Approval to Operate within one year from being a Principal Officer/Board Member of a new dispensary;
- Revising the method of selecting future dispensaries to match the method the Department utilized in 2012 (removing the allocation on the basis of locations with the highest number of qualifying patient residents);

- Clarifying what is required of a dispensary to be considered open, operating, and available to dispense;
- Clarifying the policies and procedures for inventory control and the transportation of marijuana to a dispensary's cultivation site or to other dispensaries, and delivering to qualifying patients and designated caregivers;
- Clarifying that a dispensary agent delivering marijuana for a dispensary is required to have a registry identification card issued under the registration certificate;
- Clarifying where a dispensary may dispense medical marijuana to a qualifying patient or designated caregiver;
- Clarifying where a dispensary agent may transport medical marijuana, plants, or paraphernalia;
- Clarifying the necessary components of a trip plan;
- Limiting dispensary donations by patients and caregivers to 2.5 ounces of useable marijuana every 14 calendar days;
- Expanding the qualifying patient application fee discount categories including: individuals over 65, Veterans, individuals eligible to receive Social Security Income (SSI) or Social Security Disability Insurance (SSDI), and individuals in hospice care; and
- Amending the definition of "25 miles" to by road rather than as the crow flies for qualifying patient applicants requesting to cultivate.

Appendix A
Arizona Medical Marijuana Program Governing Documents

Arizona Revised Statutes (A.R.S.) that Govern the Arizona Medical Marijuana Program

The Arizona Revised Statutes (A.R.S.) represent the statutory laws of the state of Arizona. The A.R.S. and the Arizona Medical Marijuana Rules each contain requirements applicable to the Arizona Medical Marijuana Program. Accordingly, to fully understand all the requirements applicable to the Arizona Medical Marijuana Program, the A.R.S. and the Arizona Medical Marijuana Rules should be read in conjunction with each other.

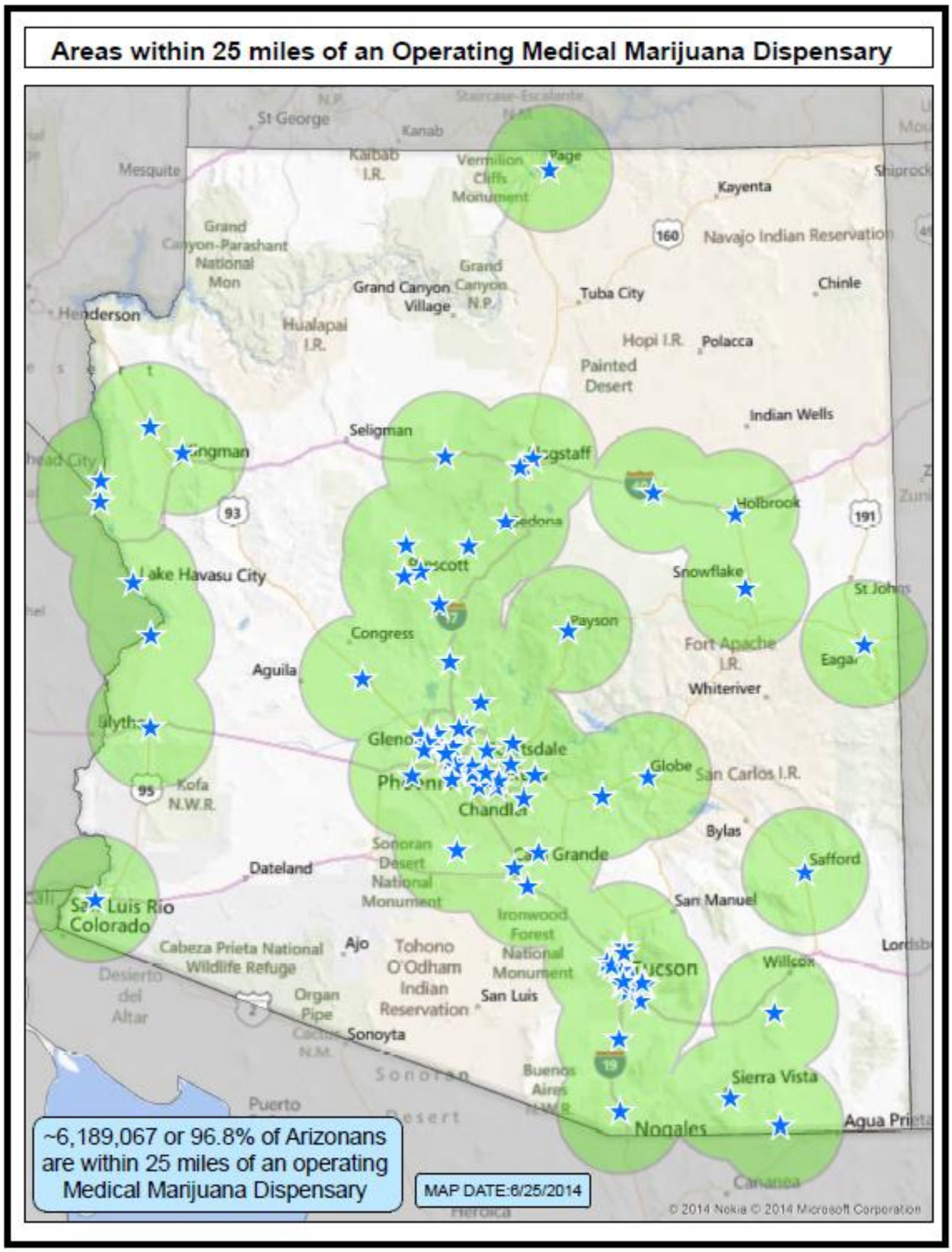
A.R.S. Title 36

CHAPTER	ARIZONA MEDICAL MARIJUANA ACT
36-2801	Definitions
36-2801.01	Addition of debilitating medical conditions
36-2802	Arizona Medical Marijuana Act; limitations
36-2803	Rulemaking
36-2804	Registration and certification of nonprofit medical marijuana dispensaries
36-2804.01	Registration of nonprofit medical marijuana dispensary agents; notices; civil
36-2804.02	Registration of qualifying patients and designated caregivers
36-2804.03	Issuance of registry identification cards
36-2804.04	Registry identification cards
36-2804.05	Denial of registry identification card
36-2804.06	Expiration and renewal of registry identification cards and registration
36-2805	Facility restrictions
36-2806	Registered nonprofit medical marijuana dispensaries; requirements
36-2806.01	Dispensary locations
36-2806.02	Dispensing marijuana for medical use
36-2807	Verification system
36-2808	Notifications to department; civil penalty
36-2809	Annual report
36-2810	Confidentiality
36-2811	Presumption of medical use of marijuana; protections; civil penalty
36-2813	Discrimination prohibited
36-2814	Acts not required; acts not prohibited
36-2815	Revocation
36-2816	Violations; civil penalty; classification
36-2817	Medical marijuana fund; private donations
36-2818	Enforcement of this act; mandamus
36-2819	Fingerprinting requirements

Arizona Medical Marijuana Administrative Code (Rules)

ADHS is currently going through a rulemaking to update the current Medical Marijuana Rules. The rulemaking is a result of the July 29, 2013 Arizona Superior Court order.

Appendix B
Areas within 25 Miles of an Operating Medical Marijuana Dispensary



Appendix C
Marijuana v. Cannabis Blog Post

Are Marijuana and Cannabis the same thing when it comes to Arizona Law? The short answer is no- and the distinction may be an important one for Qualified Patients.

The Arizona Medical Marijuana Act provides registry identification card holders and dispensaries a number of legal protections for their medical use of Marijuana pursuant to the Act. Interestingly, the Arizona Medical Marijuana Act definition of "Marijuana" in A.R.S. § 36-2801(8) differs from the Arizona Criminal Code's ("Criminal Code") definition of "Marijuana" in A.R.S. § 13-3401(19). In addition, the Arizona Medical Marijuana Act makes a distinction between "Marijuana" and "Usable Marijuana." A.R.S. § 36-2801(8) and (15).

The definition of "Marijuana" in the Arizona Medical Marijuana Act is *"... all parts of any plant of the genus cannabis whether growing or not, and the seeds of such plant.*" The definition of "Usable Marijuana" is *"... the dried flowers of the marijuana plant, and any mixture or preparation thereof, but does not include the seeds, stalks and roots of the plant and does not include the weight of any non-marijuana ingredients combined with marijuana and prepared for consumption as food or drink.*" The "allowable amount of marijuana" for a qualifying patient and a designated caregiver includes "two-and-one half ounces of *usable marijuana*." A.R.S. § 36-2801(1).

The definition of "Marijuana" in the Criminal Code is "… all parts of any plant of the genus cannabis, *from which the resin has not been extracted*, whether growing or not, and the seeds of such plant." "Cannabis" (a narcotic drug under the Criminal Code) is defined as: *"... the following substances under whatever names they may be designated: (a) The resin extracted from any part of a plant of the genus cannabis, and every compound, manufacture, salt, derivative, mixture or preparation of such plant, its seeds or its resin. Cannabis does not include oil or cake made from the seeds of such plant, any fiber, compound, manufacture, salt, derivative, mixture or preparation of the mature stalks of such plant except the resin extracted from the stalks or any fiber, oil or cake or the sterilized seed of such plant which is incapable of germination;* and *(b) Every compound, manufacture, salt, derivative, mixture or preparation of such resin or tetrahydrocannabinol.*" A.R.S. § 13-3401(4) and (20)(w).

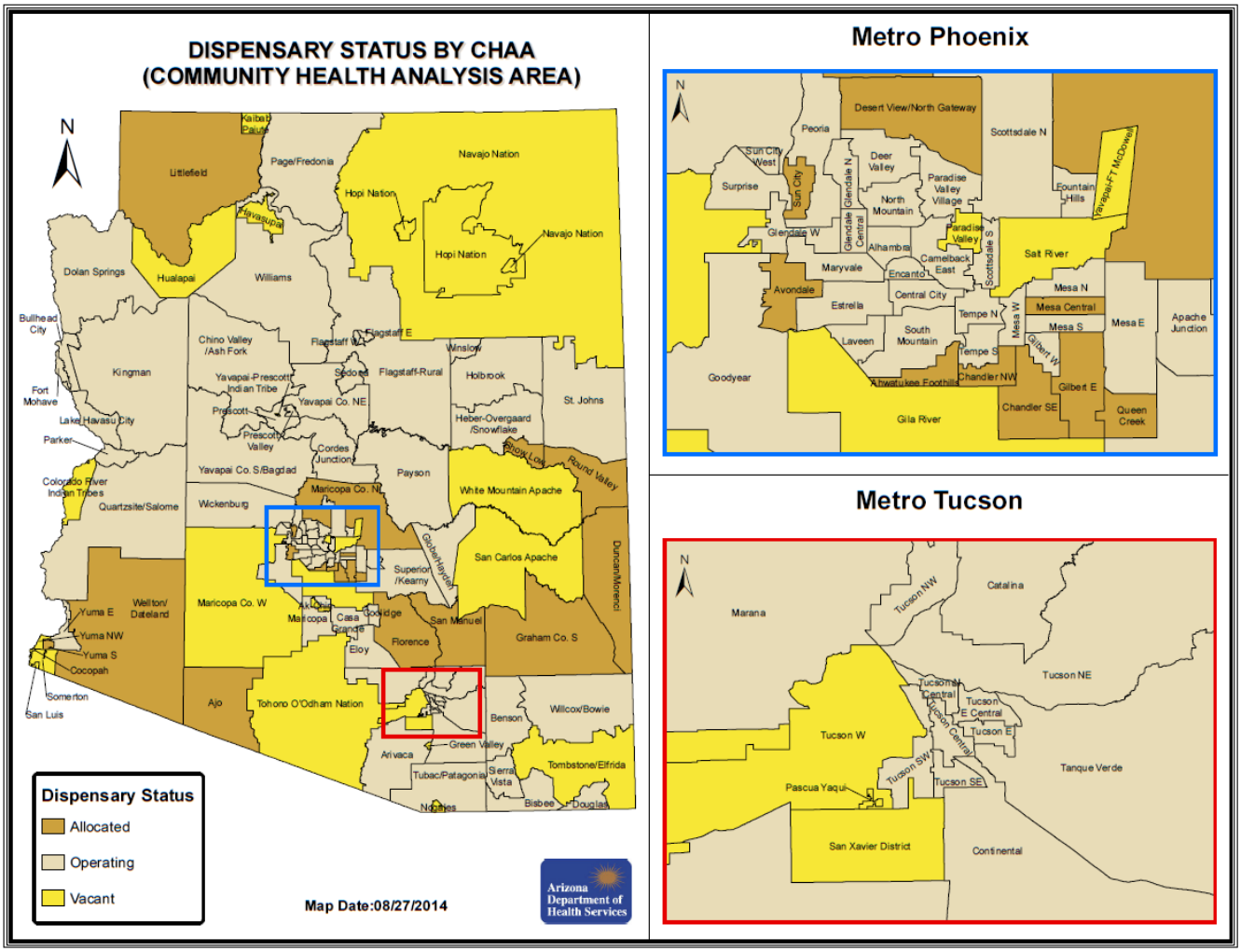
An issue the Department has been wrestling with for some time is how the definition of "Marijuana" and "Usable Marijuana" in the Arizona Medical Marijuana Act and the definition of "Cannabis" and "Marijuana" in the Criminal Code fit together. This confusion, which appears to be shared by dispensaries and registered identification card holders alike, is not easy to clear up and has resulted in the Department receiving numerous questions regarding the interplay between the protections in A.R.S. § 36-2811 and the Criminal Code. While we can't provide legal advice as to whether a certain conduct is punishable under the Criminal Code (only an individual's or entity's legal counsel can do this), "Cannabis" is defined as the "resin extracted

from any part of a plant of the genus cannabis" and "Cannabis" is listed as a narcotic drug according to the Criminal Code in A.R.S. § 13-3401(4) and (20)(w).

In other words, registered identification card holders and dispensaries may be exposed to criminal prosecution under the Criminal Code for possessing a narcotic drug if the card holder or dispensary possesses resin extracted from any part of a plant of the genus *Cannabis* or an edible containing resin extracted from any part of a plant of the genus *Cannabis.* If you're concerned that your conduct may expose you to criminal prosecution, you may wish to consult an attorney. We'll be providing some specific guidance for dispensaries licensed by the ADHS next week.

Blog post date: August 30, 2013

Appendix D
Dispensary Status by Community Health Analysis Area (CHAA)



End Notes:

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3. Marijuana Policy Project (2014, July 25 last update) The Twenty-Three States and One Federal District with Effective Medical Marijuana Laws. Retrieved from http://www.mpp.org/assets/pdfs/library/MMJLawsSummary.pdf.

4. Commissioner's Office Maine Department of Health and Human Services (2011, March) Maine Medical Use of Marijuana Program Annual Report.

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6. Nevada Health Division Medical Marijuana Program (2012, September 10) Nevada Medical Marijuana Report.

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9. Wang GM, Roosevelt G, Heard K. Pediatric Marijuana Exposures in a Medical Marijuana State. *JAMA, Pediatrics.* 2013; 160(7):630-633.

10. State Cancer Profiles. Retrieved from http://statecancerprofiles.cancer.gov/cgi-bin/quickprofiles/profile.pl?04&001#incdEAPC accessed on November 5th 2012.

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14. Washington Secretary of State, Elections Division.(2013, July 22, last updated 11/27/2012) Retrieved from http://vote.wa.gov/results/20121106/Initiative-Measure-No-502-Concerns-marijuana.html.

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