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## CONTROLLED SUBSTANCES BOARD

**Contact: Chad Zadrazil (608) 266-2112**  
**Room 121A, 1400 East Washington Avenue, Madison**  
**March 15, 2016**

*The following agenda describes the issues that the Board plans to consider at the meeting. At the time of the meeting, items may be removed from the agenda. Please consult the meeting minutes for a description of the actions and deliberations of the Board.*

### AGENDA

**9:30 A.M.**

#### **OPEN SESSION - CALL TO ORDER – ROLL CALL**

- A. Adoption of Agenda (1-2)**
- B. Approval of Minutes of February 5, 2016 (3-4)**
- C. Administrative Matters**
  - 1) Staff Updates
  - 2) Board Members
    - a. Yvonne Bellay – Dept. of Agriculture, Trade, and Consumer Protection Designee
    - b. Alan Bloom – Pharmacologist
    - c. Doug Englebert – Dept. of Health Services Designee
    - d. Franklin LaDien – Pharmacy Examining Board Designee
    - e. Gunnar Larson – Psychiatrist
    - f. Jeffrey Miller – Board of Nursing Designee
    - g. Tina Virgil – Attorney General Designee
    - h. Wendy Pietz – Dentistry Examining Board Designee
    - i. Timothy Westlake – Medical Examining Board Designee
  - 3) Election of Officers **(5-7)**
  - 4) Appointment of Liaisons and Delegation of Authority
- D. Legislation and Rule Matters – Discussion and Consideration (8-13)**
  - 1) Exclusion of [<sup>123</sup>I]ioflupane **(9-11)**
  - 2) Adoption of CR 15-070 Relating to Data Submission to the Prescription Drug Monitoring Program (PDMP) (Act 199) **(12-13)**
  - 3) Update on Legislation and Possible or Pending Rule-Making Projects
- E. Kratom: Report of Facts on Original Legislative Scheduling Decision – Discussion and Consideration (14-19)**

- F. **Annual Report – Discussion and Consideration (20-29)**
- G. **Prescription Drug Monitoring Program – Discussion and Consideration**
  - 1) Operations Statistics **(30-32)**
  - 2) Results from the December Pharmacy Compliance Audit **(33-36)**
  - 3) Access Suspension Process **(37)**
  - 4) ePDMP Development Update **(38)**
- H. **Informational Items – Discussion and Consideration**
  - 1) New Opioid Prescribing Guidelines for Management of Acute Pain to Prevent Drug Overdoses **(39-40)**
  - 2) Benzodiazepine Prescriptions, Overdose Deaths on the Rise in U.S. **(41-42)**
  - 3) SCAODA Annual Report **(43-47)**
  - 4) SCAODA Marijuana Ad-hoc Committee Report **(48-122)**
- I. Discussion and Consideration of Items Received After Preparation of the Agenda:
  - 1) Introductions, Announcements, and Recognition
  - 2) Presentations of Petition(s) for Summary Suspension
  - 3) Presentation of Proposed Stipulation(s), Final Decision(s) and Order(s)
  - 4) Presentation of Final Decision and Order(s)
  - 5) Informational Item(s)
  - 6) DLSC Matters
  - 7) Status of Statute and Administrative Rule Matters
  - 8) Education and Examination Matters
  - 9) Credentialing Matters
  - 10) Practice Questions
  - 11) Legislation / Administrative Rule Matters
  - 12) Liaison Report(s)
  - 13) Speaking Engagement(s), Travel, or Public Relations Request(s)
  - 14) Consulting with Legal Counsel
- J. Public Comments

**ADJOURNMENT**

The next scheduled meeting is May 17, 2016.

**VIRTUAL/TELECONFERENCE  
CONTROLLED SUBSTANCES BOARD  
MEETING MINUTES  
FEBRUARY 5, 2016**

**PRESENT:** Alan Bloom (*via GoToMeeting*), Yvonne Bellay (*via GoToMeeting*), Doug Englebert, Franklin LaDien (*via GoToMeeting*), Gunnar Larson (*via GoToMeeting*), Jeffrey Miller (*via GoToMeeting*), Wendy Pietz (*via GoToMeeting, joined the meeting at 9:36 a.m.*), Tina Virgil (*via GoToMeeting*), Timothy Westlake (*via GoToMeeting*)

**STAFF:** Chad Zadrazil – Managing Director, Nilajah Hardin - Bureau Assistant; Sharon Henes - Administrative Rules Coordinator; and other DSPS Staff

**CALL TO ORDER**

Doug Englebert called the meeting to order at 9:32 a.m. A quorum of eight (8) members was confirmed.

**ADOPTION OF AGENDA**

**MOTION:** Gunnar Larson moved, seconded by Jeffrey Miller, to adopt the agenda as published. Motion carried unanimously.

**APPROVAL OF MINUTES OF DECEMBER 1, 2015**

**MOTION:** Franklin LaDien moved, seconded by Gunnar Larson, to approve the minutes of December 1, 2015 as published. Motion carried unanimously.

**PUBLIC HEARING: CLEARINGHOUSE RULE 15-101 RELATING TO OPERATION OF  
PRESCRIPTION DRUG MONITORING PROGRAM (PDMP)**

*Wendy Pietz joined the meeting at 9:36 a.m.*

**Review and Respond to Clearinghouse Report and Public Hearing Comments**

**MOTION:** Jeffrey Miller moved, seconded by Franklin LaDien, to reject comment number(s) 5(b), and accept all remaining Clearinghouse comments for Clearinghouse Rule 15-101 relating to Operation of Prescription Drug Monitoring Program (PDMP). Motion carried unanimously.

**MOTION:** Yvonne Bellay moved, seconded by Alan Bloom, to authorize the Chair to approve the Legislative Report and Draft for Clearinghouse Rule 15-101 relating to Operation of Prescription Drug Monitoring Program (PDMP) submission to the Governor's Office and Legislature. Motion carried unanimously.

## CLOSED SESSION

**MOTION:** Franklin LaDien moved, seconded by Alan Bloom, to convene to closed session to deliberate on cases following hearing (s. 19.85(1)(a), Stats.); to consider licensure or certification of individuals (s. 19.85 (1)(b), Stats.); to consider closing disciplinary investigation with administrative warning (ss.19.85(1)(b), 440.205, and 961.385(2)(c) Stats.); to consider individual histories or disciplinary data (s. 19.85 (1)(f), Stats.); and, to confer with legal counsel (s.19.85(1)(g), Stats.). Doug Englebert, Chair, read the language of the motion. The vote of each member was ascertained by voice vote. Roll Call Vote: Yvonne Bellay-yes, Alan Bloom-yes; Doug Englebert-yes; Franklin LaDien-yes; Gunnar Larson-yes; Jeffrey Miller-yes; Wendy Pietz-yes; Timothy Westlake-yes; Tina Virgil-yes. Motion carried unanimously.

The Board convened into Closed Session at 9:50 a.m.

## RECONVENE TO OPEN SESSION

**MOTION:** Gunnar Larson moved, seconded by Franklin LaDien, to reconvene into open session. Motion carried unanimously.

The Board reconvened into Open Session at 10:28 a.m.

## VOTING ON ITEMS CONSIDERED OR DELIBERATED ON IN CLOSED SESSION

**MOTION:** Jeffrey Miller moved, seconded by Alan Bloom, to affirm all motions made in closed session. Motion carried unanimously.

## DELIBERATION ON ISSUANCE OF ORDER SUSPENDING ACCESS TO THE PRESCRIPTION DRUG MONITORING PROGRAM

### M.H., R.Ph.

**MOTION:** Franklin LaDien moved, seconded by Alan Bloom, to suspend the access of M.H., R.Ph., to the Prescription Drug Monitoring Program, pursuant to Wis. Stat. § 961.385(2)(c), and Wis. Admin. Code CSB § 4.09(3)(a), and to refer this matter to the Pharmacy Examining Board for review, pursuant to Wis. Stat. § 961.385(2)(c), and Wis. Admin. Code CSB § 4.13(2). Motion carried unanimously.

**MOTION:** Jeffrey Miller moved, seconded by Franklin LaDien, to delegate to the Chair the authority to lift the suspension of access to the Prescription Drug Monitoring Program in the matter of M.H., R.Ph. Motion carried unanimously.

## ADJOURNMENT

**MOTION:** Alan Bloom moved, seconded by Franklin LaDien, to adjourn the meeting. Motion carried unanimously.

The meeting adjourned at 10:30 a.m.

**State of Wisconsin  
Department of Safety & Professional Services**

**AGENDA REQUEST FORM**

1) Name and Title of Person Submitting the Request:  <b>Nilajah Hardin, Bureau Assistant</b>		2) Date When Request Submitted:  <b>01/20/16</b>  <small>Items will be considered late if submitted after 12:00 p.m. on the deadline date which is 8 business days before the meeting</small>									
3) Name of Board, Committee, Council, Sections:  <b>Controlled Substances Board</b>											
4) Meeting Date:  <b>03/15/16</b>	5) Attachments: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	6) How should the item be titled on the agenda page?  <b>Election of Officers Appointment of Liaisons and Delegation of Authority</b>									
7) Place Item in: <input checked="" type="checkbox"/> Open Session <input type="checkbox"/> Closed Session	8) Is an appearance before the Board being scheduled?  <input type="checkbox"/> Yes ( <a href="#">Fill out Board Appearance Request</a> ) <input checked="" type="checkbox"/> No	9) Name of Case Advisor(s), if required:  <b>N/A</b>									
10) Describe the issue and action that should be addressed:  <b>The Board shall Elect Officers and have the Chair appoint Liaisons. The Board shall also complete delegations of authority as necessary.</b>											
11) Authorization  <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 70%; border-bottom: 1px solid black;"><i>Nilajah D. Hardin</i></td> <td style="width: 30%; border-bottom: 1px solid black; text-align: right;"><i>01/20/16</i></td> </tr> <tr> <td style="border-bottom: 1px solid black;">Signature of person making this request</td> <td style="border-bottom: 1px solid black; text-align: right;">Date</td> </tr> <tr> <td style="border-bottom: 1px solid black;">Supervisor (if required)</td> <td style="border-bottom: 1px solid black; text-align: right;">Date</td> </tr> <tr> <td colspan="2" style="border-bottom: 1px solid black;">Executive Director signature (indicates approval to add post agenda deadline item to agenda)    Date</td> </tr> </table>				<i>Nilajah D. Hardin</i>	<i>01/20/16</i>	Signature of person making this request	Date	Supervisor (if required)	Date	Executive Director signature (indicates approval to add post agenda deadline item to agenda)    Date	
<i>Nilajah D. Hardin</i>	<i>01/20/16</i>										
Signature of person making this request	Date										
Supervisor (if required)	Date										
Executive Director signature (indicates approval to add post agenda deadline item to agenda)    Date											
Directions for including supporting documents: 1. This form should be attached to any documents submitted to the agenda. 2. Post Agenda Deadline items must be authorized by a Supervisor and the Policy Development Executive Director. 3. If necessary, provide original documents needing Board Chairperson signature to the Bureau Assistant prior to the start of a meeting.											

*March 2015*

<b>2015 OFFICER ELECTION RESULTS</b>	
<b>Board Chair</b>	Doug Englebert
<b>Vice Chair</b>	Alan Bloom
<b>Secretary</b>	Yvonne Bellay

<b>2015 LIAISON APPOINTMENTS</b>	
<b>SUA Liaisons</b>	Alan Bloom, Yvonne Bellay
<b>SCAODA Liaison</b>	Doug Englebert
<b>Legislative Liaison</b>	Doug Englebert (Alternate: Martin Koch)

**Delegation of Authority**

**MOTION:** Franklin LaDien moved, seconded by Yvonne Bellay, that the Board delegates authority to the Chair to sign documents on behalf of the Board. In order to carry out duties of the Board, the Chair has the ability to delegate this signature authority to the Board's Executive Director for purposes of facilitating the completion of assignments during or between meetings. Motion carried unanimously.

**MOTION:** Martin Koch moved, seconded by Gunnar Larson, in order to facilitate the completion of assignments between meetings, the Board delegates its authority by order of succession to the Chair, highest ranking officer, or longest serving member of the Board, to appoint liaisons to the Department where knowledge or experience in the profession is required to carry out the duties of the Board in accordance with the law. Motion carried unanimously.

**MOTION:** Martin Koch moved, seconded by Franklin LaDien, to authorize the SUA liaisons to review and make approval decisions regarding SUA applications. Furthermore, the Board authorizes DSPS staff to sign SUA permits on behalf of the Board. Motion carried unanimously.

**MOTION:** Franklin LaDien moved, seconded by Martin Koch, to authorize the SUA liaisons to approve required training or credentialing on behalf of the Board. Motion carried unanimously.

**MOTION:** Yvonne Bellay moved, seconded by Martin Koch, to delegate authority to the Legislative Liaison(s) to address Board issues related to legislative matters excluding media requests. Motion carried unanimously.

**MOTION:** Martin Koch moved, seconded by Franklin LaDien, to authorize the SCAODA liaison to vote on behalf of the Board at the State Council on Alcohol and Other Drug Abuse meetings. Motion carried unanimously.

**MOTION:** Yvonne Bellay moved, seconded by Franklin LaDien, that Board Counsel or another Department attorney is formally authorized to serve as the Board's designee for purposes of Wis. Admin. Code SPS § 1.08(1). Motion carried unanimously

*August 2015*

<b>2015 LIAISON APPOINTMENTS</b>	
<b>SUA Liaisons</b>	Alan Bloom, Yvonne Bellay
<b>SCAODA Liaison</b>	Doug Englebert
<b>Legislative Liaison</b>	Doug Englebert

**State of Wisconsin  
Department of Safety & Professional Services**

**AGENDA REQUEST FORM**

1) Name and Title of Person Submitting the Request:  <b>Sharon Henes Administrative Rules Coordinator</b>		2) Date When Request Submitted:  <b>2 March 2016</b>  Items will be considered late if submitted after 12:00 p.m. on the deadline date: ▪ 8 business days before the meeting	
3) Name of Board, Committee, Council, Sections:  <b>Controlled Substances Board</b>			
4) Meeting Date:  <b>15 March 2016</b>	5) Attachments: <input type="checkbox"/> Yes <input type="checkbox"/> No	6) How should the item be titled on the agenda page? <b>Legislation and Rule Matters – Discussion and Consideration</b> <b>1. Exclusion of [<sup>123</sup>I]ioflupane</b> <b>2. Adoption of CR 15-070 Relating to data submission to PDMP (Act 199)</b> <b>3. Update on Legislation and Pending and Possible Rulemaking Projects</b>	
7) Place Item in: <input checked="" type="checkbox"/> Open Session <input type="checkbox"/> Closed Session <input type="checkbox"/> Both		8) Is an appearance before the Board being scheduled?  <input type="checkbox"/> Yes ( <a href="#">Fill out Board Appearance Request</a> ) <input type="checkbox"/> No	9) Name of Case Advisor(s), if required:
10) Describe the issue and action that should be addressed:			
11) Authorization			
<i><b>Sharon Henes</b></i>		<i><b>2 March 2016</b></i>	
Signature of person making this request		Date	
Supervisor (if required)		Date	
Executive Director signature (indicates approval to add post agenda deadline item to agenda)		Date	
Directions for including supporting documents: 1. This form should be attached to any documents submitted to the agenda. 2. Post Agenda Deadline items must be authorized by a Supervisor and the Policy Development Executive Director. 3. If necessary, Provide original documents needing Board Chairperson signature to the Bureau Assistant prior to the start of a meeting.			

STATE OF WISCONSIN  
CONTROLLED SUBSTANCES BOARD

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IN THE MATTER OF RULE-MAKING : PROPOSED ORDER OF THE  
PROCEEDINGS BEFORE THE : CONTROLLED SUBSTANCES BOARD  
CONTROLLED SUBSTANCES BOARD : ADOPTING RULES  
: (CLEARINGHOUSE RULE )

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PROPOSED ORDER

An order of the Controlled Substances Board to create CSB 2.40 relating to exclusion of [<sup>123</sup>I]ioflupane.

Analysis prepared by the Department of Safety and Professional Services.

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ANALYSIS

**Statutes interpreted:** s. 961.20, Stats.

**Statutory authority:** s. 961.11 (4), Stats.

**Explanation of agency authority:**

**961.11(4)** If a substance is designated, rescheduled or deleted as a controlled substance under federal law and notice thereof is given to the controlled substances board, the board by affirmative action shall similarly treat the substance under this chapter after the expiration of 30 days from the date of publication in the federal register of a final order designating the substance as a controlled substance or rescheduling or deleting the substance or from the date of issuance of an order of temporary scheduling under 21 USC 811 (h), unless within that 30-day period, the board or an interested party objects to the treatment of the substance. If no objection is made, the board shall promulgate, without making the determinations or findings required by subs. (1), (1m), (1r) and (2) or s. 961.13, 961.15, 961.17, 961.19 or 961.21, a final rule, for which notice of proposed rulemaking is omitted, designating, rescheduling, temporarily scheduling or deleting the substance. If an objection is made the board shall publish notice of receipt of the objection and the reasons for objection and afford all interested parties an opportunity to be heard. At the conclusion of the hearing, the board shall make a determination with respect to the treatment of the substance as provided in subs. (1), (1m), (1r) and (2) and shall publish its decision, which shall be final unless altered by statute. Upon publication of an objection to the treatment by the board, action by the board under this chapter is stayed until the board promulgates a rule under sub. (2).

**Related statute or rule:** N/A

**Summary of, and comparison with, existing or proposed federal regulation:**

On September 11, 2015, the United States Department of Justice, Drug Enforcement Administration published its final rule in the Federal Register removing [<sup>123</sup>I]ioflupane from schedule II of the federal Controlled Substances Act. The scheduling action was effective September 11, 2015.

**Plain language analysis:**

The Controlled Substances Board did not receive an objection to excluding [<sup>123</sup>I]ioflupane as a schedule II under ch. 961, Stats. based upon the federal scheduling. The Controlled Substances Board took affirmative action on October 13, 2015 to similarly exclude naloxegol under chapter 961 effective October 19, 2015 to allow for publication in the Administrative Register. The Affirmative Action Order will expire upon promulgation of a final rule.

This rule amends 961.16 (2) (b), Stats. which excludes [<sup>123</sup>I]ioflupane from schedule II.

**Comparison with rules in adjacent states:**

**Illinois:** Illinois does not exclude [<sup>123</sup>I]ioflupane from scheduling.

**Iowa:** Iowa has a bill to exclude [<sup>123</sup>I]ioflupane from scheduling.

**Michigan:** Michigan does not exclude [<sup>123</sup>I]ioflupane from scheduling.

**Minnesota:** Minnesota does not exclude [<sup>123</sup>I]ioflupane from scheduling.

**Summary of factual data and analytical methodologies:**

The methodology was to remove [<sup>123</sup>I]ioflupane from scheduling to conform with the federal Controlled Substances Act.

**Analysis and supporting documents used to determine effect on small business or in preparation of economic impact analysis:**

**Fiscal Estimate and Economic Impact Analysis:**

The Fiscal Estimate and Economic Impact Analysis is attached.

**Effect on small business:**

These proposed rules do not have an economic impact on small businesses, as defined in s. 227.114 (1), Stats. The Department's Regulatory Review Coordinator may be contacted by email at Jeffrey.Weigand@wisconsin.gov, or by calling (608) 267-2435.

**Agency contact person:**

Sharon Henes, Administrative Rules Coordinator, Department of Safety and Professional Services, Division of Board Services, 1400 East Washington Avenue, Room 151, P.O. Box 8366, Madison, Wisconsin 53708; telephone 608-261-2377; email at Sharon.Henes@wisconsin.gov.

**Place where comments are to be submitted and deadline for submission:**

Comments may be submitted to Sharon Henes, Administrative Rules Coordinator, Department of Safety and Professional Services, Division of Board Services, 1400 East Washington Avenue, Room 151, P.O. Box 8366, Madison, WI 53708-8935, or by email to Sharon.Henes@wisconsin.gov. Comments must be received on or before to be included in the record of rule-making proceedings.

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TEXT OF RULE

SECTION 1. CSB 2.40 is created to read:

**CSB 2.40 Exclusion of [<sup>123</sup>I]ioflupane.** Section 961.16(2)(b), Stats., is amended to read:  
*(b) Coca leaves and any salt, compound, derivative or preparation of coca leaves. Decocainized coca leaves or extractions which do not contain cocaine or ecgonine are excluded from this paragraph. [<sup>123</sup>I]ioflupane is excluded from this paragraph. The following substances and any of their salts, esters, isomers and salts of esters and isomers that are theoretically possible within the specific chemical designation, are included in this paragraph.*

SECTION 2. EFFECTIVE DATE. The rules adopted in this order shall take effect on the first day of the month following publication in the Wisconsin administrative register, pursuant to s. 227.22 (2) (intro.), Stats.

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(END OF TEXT OF RULE)

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STATE OF WISCONSIN  
CONTROLLED SUBSTANCES BOARD

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IN THE MATTER OF RULE-MAKING : ORDER OF THE  
PROCEEDINGS BEFORE THE : CONTROLLED SUBSTANCES BOARD  
CONTROLLED SUBSTANCES BOARD : ADOPTING RULES  
: (CLEARINGHOUSE RULE 15-070)

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PROPOSED ORDER

An order of the Controlled Substances Board to create CSB 4.04 (2) (p) relating to submission of data to the prescription drug monitoring program.

Analysis prepared by the Department of Safety and Professional Services.

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ANALYSIS

**Statutes interpreted:** s. 961.385(2)(b), Stats.

**Statutory authority:** s. 961.385, Stats.

**Explanation of agency authority:** “The board shall establish by rule a program for monitoring the dispensing of monitored prescription drugs.” s. 961.385, Stats.

**Related statute or rule:** ch. CSB 4, Admin. Code

**Plain language analysis:**

This rule implements 2013 Act 199 requiring the name of the person, either from on the id presented or known by the pharmacist, to whom a drug is dispensed or delivered to be submitted to the prescription drug monitoring program.

**Summary of, and comparison with, existing or proposed federal regulation:** None

**Comparison with rules in adjacent states:**

**Illinois:** Illinois does not require the name of the person to whom a drug is dispensed or delivered to be submitted to the prescription drug monitoring program.

**Iowa:** Iowa does not require the name of the person to whom a drug is dispensed or delivered to be submitted to the prescription drug monitoring program.

**Michigan:** Michigan does not require the name of the person to whom a drug is dispensed or delivered to be submitted to the prescription drug monitoring program.

**Minnesota:** Minnesota does not require the name of the person to whom a drug is dispensed or delivered to be submitted to the prescription drug monitoring program.

**Summary of factual data and analytical methodologies:**

The methodology was to insert this requirement into the enumeration of required data to be submitted to the prescription drug monitoring program.

**Analysis and supporting documents used to determine effect on small business or in preparation of economic impact analysis:**

This rule was posted for economic comments for 14 days and none were received. Any economic impact resulting from the requirement to submit the name to PDMP is a result of the statutory requirement created by 2013 Act 199.

**Fiscal Estimate and Economic Impact Analysis:**

The Fiscal Estimate and Economic Impact Analysis is attached.

**Effect on small business:**

These proposed rules do not have an economic impact on small businesses, as defined in s. 227.114 (1), Stats. The Department’s Regulatory Review Coordinator may be contacted by email at Eric.Esser@wisconsin.gov, or by calling (608) 267-2435.

**Agency contact person:**

Sharon Henes, Administrative Rules Coordinator, Department of Safety and Professional Services, Division of Board Services, 1400 East Washington Avenue, Room 151, P.O. Box 8366, Madison, Wisconsin 53708; telephone 608-261-2377; email at Sharon.Henes@wisconsin.gov.

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TEXT OF RULE

SECTION 1. CSB 4.04 (p) is created to read:

CSB 4.04 (p) The name recorded under s. 450.11(1b)(bm), Stats.

SECTION 2. EFFECTIVE DATE. The rules adopted in this order shall take effect on April 9, 2017.

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(END OF TEXT OF RULE)  
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Dated \_\_\_\_\_

Agency \_\_\_\_\_

Chair  
Controlled Substances Board

**State of Wisconsin  
Department of Safety & Professional Services**

**AGENDA REQUEST FORM**

1) Name and Title of Person Submitting the Request:  <b>Chad Zadrazil</b>		2) Date When Request Submitted: <b>3/1/16</b> Items will be considered late if submitted after 4:30 p.m. and less than: <ul style="list-style-type: none"> <li>▪ 10 work days before the meeting for Medical Board</li> <li>▪ 14 work days before the meeting for all others</li> </ul>	
3) Name of Board, Committee, Council, Sections:  <b>WISCONSIN CONTROLLED SUBSTANCES BOARD</b>			
4) Meeting Date:  <b>3/15/16</b>	5) Attachments: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	6) How should the item be titled on the agenda page? <b>Kratom: Report of Facts on Original Legislative Scheduling Decision - Discussion and Consideration</b>	
7) Place Item in: <input checked="" type="checkbox"/> Open Session <input type="checkbox"/> Closed Session <input type="checkbox"/> Both	8) Is an appearance before the Board being scheduled? If yes, who is appearing?  <input type="checkbox"/> Yes by <input type="checkbox"/> No	9) Name of Case Advisor(s), if required:  N/A	
10) Describe the issue and action that should be addressed:  Discussion and consideration of the current schedule of Kratom and its compounds.			



The New York Times | <http://nyti.ms/1UnfZ5o>

U.S.

# Kratom, an Addict's Alternative, Is Found to Be Addictive Itself

By **ALAN SCHWARZ** JAN. 2, 2016

DELRAY BEACH, Fla. — Three shaky months into recovery from heroin addiction, Dariya Pankova found something to ease her withdrawal. A local nonalcoholic bar sold a brewed beverage that soothed her brain and body much as narcotics had. A perfect solution — before it backfired.

Ms. Pankova grew addicted to the beverage itself. She drank more and more, awakened her cravings for the stronger high of heroin, and relapsed. Only during another stay in rehab did Ms. Pankova learn that the drink's primary ingredient, a Southeast Asian leaf called kratom, affects the brain like an opiate and can be addictive, too.

“It's preying on the weak and the broken,” said Ms. Pankova, 23, a Brooklyn native who received treatment in Delray Beach. “It's a mind-altering substance, so people like me who are addicts and alcoholics, they think just because it's legal, it's fine. It's a huge epidemic down here, and it's causing a lot of relapses.”

Some users embrace kratom as a natural painkiller and benign substitute

for more dangerous substances that, in most states, is legal. But its growing popularity and easy availability are raising concerns among substance abuse experts and government officials who say it is being furtively marketed as a way out of addiction, even though it is itself addictive. Worse, some of those experts say, kratom can lead some addicts back to heroin, which is cheaper and stronger.

“It’s a fascinating drug, but we need to know a lot more about it,” said Dr. Edward W. Boyer, a professor of emergency medicine at the University of Massachusetts Medical School and a co-author of several scientific articles on kratom. “Recreationally or to self-treat opioid dependence, beware — potentially you’re at just as much risk” as with an opiate.

Concern is particularly high in South Florida, where a rising concentration of drug-treatment providers has coincided with the sprouting of kratom bars. But kratom is now available around the country. Powdered forms of the leaf are sold at head shops and gas-station convenience stores and on the Internet. Bars have recently opened in Colorado, New York, North Carolina and other states where customers nurse brewed varieties, varying in strength, from plastic bottles that resemble those for fruit juice.

Kratom exists in a kind of legal purgatory. Because it is categorized as a botanic dietary supplement, the Food and Drug Administration cannot restrict its sale unless it is proved unsafe or producers claim that it treats a medical condition. (Some packages are coyly labeled “not for human consumption” to avoid tripping such alarms.)

The F.D.A. did ban the import of kratom into the United States in 2014, however, under its authority when a substance is strongly suspected to be harmful. That year, marshals seized 25,000 pounds of it from a Los Angeles warehouse.

The Drug Enforcement Administration has listed kratom as a “drug of concern” but not a controlled substance, which would require proven health

risks and abuse potential. Indiana, Tennessee, Vermont and Wyoming have banned it on their own; several other states, including Florida and New Jersey, have set aside similar bills until more is known about kratom's health risks. The Army has forbidden its use by soldiers.

Kratom has been linked to seizures and respiratory depression, but deaths related to it appear rare. Linda Mautner, who lives in the Delray Beach area, has claimed that her 20-year-old son, Ian, committed suicide in 2014 in the throes of kratom addiction, but Mr. Mautner was also receiving treatment for depression. Some deaths in the United States have resulted from kratom's being laced with the prescription pain reliever hydrocodone or morphine.

Kratom's narcotic effects have been known for centuries in its native Thailand, which banned the substance decades ago amid widespread abuse. Nevertheless, kratom being sold in the United States is still smuggled in from Thailand, as well as several other Southeast Asian countries. Western research of kratom is in its infancy.

Some kratom advocates claim that it helped wean them from stronger and more dangerous opiates. Susan Ash of Norfolk, Va., said she had taken kratom during treatment for dependence on prescription painkillers, and now uses a small amount daily for chronic pain and depression. Last year, she founded the **American Kratom Association**, a consumer group of more than 2,000 members that lobbies against state bills to ban the substance.

"We know from all our experiences that kratom has the potential to be a wonderful medicine," said Ms. Ash, 46, adding that her organization receives little funding from kratom manufacturers. "We're all experiencing that it's changing our lives. We do agree that more science is needed to actually prove this potential that we know it has."

Meanwhile, kratom is sold somewhat under the radar. In Carrboro, N.C., a nonalcoholic bar called Krave serves kratom drinks under the name "ketum" to deter connections to the substance's darker side, the owner, Elizabeth

Gardner, said. Ms. Gardner added that if she learns that a customer is in substance-abuse recovery, she will disclose concerns about kratom's potential addictiveness.

Kavasutra, a popular chain of bars that sell kratom and kava, another plant-based drink, does not list kratom on its menu, but sells it regularly in bottles and small plastic bags of powder.

Kavasutra's owner, Dylan Harrison, was once one of South Florida's primary manufacturers and distributors of spice, a synthetic hallucinogen banned under federal law. He was released from federal prison in August 2014 after serving 10 months on drug charges. Several telephone messages left for Mr. Harrison were not returned.

Mr. Mautner's death has fueled debates among South Florida lawmakers over making kratom illegal, a move supported by the Broward County Medical Association. Neither Broward County nor Palm Beach County, which includes Delray Beach, has done so, however, and Palm Beach County decided in April to not require warning signs of kratom's addictiveness at bars and stores that sell it.

Ms. Pankova frequented the Kavasutra in Delray Beach not only because kratom soothed her cravings for opiates, she said, but also because it was not detectable on the drug tests she took as part of her recovery program. Many drug-treatment providers consider kratom use a full-fledged relapse. Ms. Pankova said she and many friends wound up spending \$60 a day on kratom drinks before moving back to less expensive heroin.

Another South Florida resident with that experience, Robert Waina, said he had abused dozens of different drugs before discovering kratom three years ago. He enjoyed the mild high to the point that he found himself ordering bottle after bottle. When he tried to cut back, he couldn't, and eventually suffered from such withdrawals that he had to go to rehab for kratom three times, most recently last spring.

Sitting in a coffee shop in Delray Beach, Mr. Waina said recently that he had stayed sober since then, avoiding kratom like any other drug.

“If I’m taking it,” he said, “as far as I’m concerned, I’m not clean.”

A version of this article appears in print on January 3, 2016, on page A12 of the New York edition with the headline: An Alternative for Addicts, Kratom Can Offer Relief, and Sometimes a Relapse.

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**State of Wisconsin  
Department of Safety & Professional Services**

**AGENDA REQUEST FORM**

1) Name and Title of Person Submitting the Request:  <b>Chad Zadrazil</b>		2) Date When Request Submitted:  Items will be considered late if submitted after 4:30 p.m. and less than: <ul style="list-style-type: none"> <li>▪ 10 work days before the meeting for Medical Board</li> <li>▪ 14 work days before the meeting for all others</li> </ul>	
3) Name of Board, Committee, Council, Sections:  <b>WISCONSIN CONTROLLED SUBSTANCES BOARD</b>			
4) Meeting Date:  <b>3/15/16</b>	5) Attachments: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	6) How should the item be titled on the agenda page? <b>Annual Report – Discussion and Consideration</b>	
7) Place Item in: <input checked="" type="checkbox"/> Open Session <input type="checkbox"/> Closed Session <input type="checkbox"/> Both	8) Is an appearance before the Board being scheduled? If yes, who is appearing?  <input type="checkbox"/> Yes by <input type="checkbox"/> No	9) Name of Case Advisor(s), if required:  N/A	
10) Describe the issue and action that should be addressed:  Discussion and consideration of the requirements of s. 961.36 and AB 766.			

**961.36 Controlled substances board duties relating to diversion control and prevention, compliance with controlled substances law and advice and assistance.**

- (1) The controlled substances board shall regularly prepare and make available to state regulatory, licensing and law enforcement agencies descriptive and analytic reports on the potential for diversion and actual patterns and trends of distribution, diversion and abuse within the state of certain controlled substances the board selects that are listed in s. 961.16, 961.18, 961.20 or 961.22.
- (1m) At the request of the department of safety and professional services or a board, examining board or affiliated credentialing board in the department of safety and professional services, the controlled substances board shall provide advice and assistance in matters related to the controlled substances law to the department or to the board, examining board or affiliated credentialing board in the department making the request for advice or assistance.
- (2) The controlled substances board shall enter into written agreements with local, state and federal agencies to improve the identification of sources of diversion and to improve enforcement of and compliance with this chapter and other laws and regulations pertaining to unlawful conduct involving controlled substances. An agreement must specify the roles and responsibilities of each agency that has information or authority to identify, prevent or control drug diversion and drug abuse. The board shall convene periodic meetings to coordinate a state diversion prevention and control program. The board shall assist and promote cooperation and exchange of information among agencies and with other states and the federal government.
- (3) The controlled substances board shall evaluate the outcome of its program under this section and shall annually submit a report to the chief clerk of each house of the legislature, for distribution to the legislature under s. 13.172 (3), on its findings with respect to its effect on distribution and abuse of controlled substances, including recommendations for improving control and prevention of the diversion of controlled substances.

**History:** 1981 c. 200; 1987 a. 186; 1995 a. 305 ss. 2, 3; 1995 a. 448 s. 234; Stats. 1995 s. 961.36; 1997 a. 35 s. 339; 2011 a. 32.



## 2015 ASSEMBLY BILL 766

January 22, 2016 - Introduced by Representatives NYGREN, TAUCHEN, SPIROS, PETERSEN, T. LARSON, QUINN, ROHRKASTE, CZAJA, PETRYK, SANFELIPPO, KATZMA, KNODL, A. OTT, KITCHENS, NOVAK, KREMER, EDMING, DUCHOW, TRANEL, KAHL, BILLINGS, KOLSTE, GOYKE, OHNSTAD, CONSIDINE and HINTZ, cosponsored by Senators DARLING, HARSDORF, MARKLEIN, OLSEN and CARPENTER. Referred to Committee on Health.

- 1     **AN ACT to create** 961.385 (5) and 961.385 (6) of the statutes; **relating to:** review  
2             and reporting requirements for the Prescription Drug Monitoring Program.

---

### *Analysis by the Legislative Reference Bureau*

This bill creates program review and reporting requirements for the Prescription Drug Monitoring Program (PDMP) administered by the Controlled Substances Board. Beginning in 2017, the bill requires the board to conduct an annual review of the PDMP to evaluate the actual program outcomes compared with projected outcomes. That review must include an evaluation of the satisfaction with the PDMP of pharmacists, pharmacies, practitioners, and other users of the PDMP and the PDMP's impact on referrals of pharmacists, pharmacies, and practitioners to relevant boards for discipline and to law enforcement agencies for investigation and prosecution. The bill requires the board to report the results of its annual program review to the Department of Safety and Professional Services. The bill sunsets the program review requirement after the program review is conducted in 2020.

Also beginning in 2017, the bill requires the board to submit a report to DSPS on an annual basis that includes all of the following:

1. An assessment of the trends and changes in the use of monitored prescription drugs in Wisconsin.
2. The number of practitioners, by profession, and pharmacies submitting records to the board under the PDMP.
3. A description of the number, frequency, and nature of certain submissions of information to the PDMP by law enforcement agencies, including notices of

**ASSEMBLY BILL 766**

suspected violations of controlled substances laws, opioid-related drug overdoses, deaths as a result of using a narcotics, and reports of stolen controlled-substance prescriptions. This reporting requirement becomes effective only if 2015 Assembly Bill 365 becomes law.

4. A description of the number, frequency, and nature of requests for disclosure of records generated under the PDMP.

5. The number of individuals receiving prescription orders from five or more practitioners or having monitored prescription drugs dispensed by five or more pharmacies within the same 90-day period.

6. The number of individuals receiving daily morphine milligram equivalents of one to 19 milligrams, 20 to 49 milligrams, 50 to 99 milligrams, and 100 or more milligrams.

7. The number of individuals to whom both opioids and benzodiazepines were dispensed within the same 90-day period.

For further information see the *state* fiscal estimate, which will be printed as an appendix to this bill.

---

*The people of the state of Wisconsin, represented in senate and assembly, do enact as follows:*

1           **SECTION 1.** 961.385 (5) of the statutes is created to read:

2           961.385 (5) (a) Beginning in 2017, no later than October 1 of each year, the  
3 board shall conduct a review of the program under this section to evaluate the actual  
4 outcomes of the program compared with projected outcomes, as determined by the  
5 board. The board's review shall include an evaluation of all of the following:

6           1. The satisfaction with the program of pharmacists, pharmacies,  
7 practitioners, and other users of the program.

8           2. The program's impact on referrals of pharmacists, pharmacies, and  
9 practitioners to licensing or regulatory boards for discipline and to law enforcement  
10 agencies for investigation and possible prosecution.

11           (b) This subsection does not apply after October 1, 2020.

12           **SECTION 2.** 961.385 (6) of the statutes is created to read:

**ASSEMBLY BILL 766**

1           961.385 (6) Beginning in 2017, no later than November 1 of each year, the board  
2 shall provide a report to the department of safety and professional services for the  
3 previous fiscal year that includes all of the following:

4           (a) The results of the board's review under sub. (5). This paragraph does not  
5 apply after November 1, 2020.

6           (b) An assessment of the trends and changes in the use of monitored  
7 prescription drugs in this state.

8           (c) The number of practitioners, by profession, and pharmacies submitting  
9 records to the board under the program.

10          (d) A description of the number, frequency, and nature of submissions by law  
11 enforcement agencies under s. 961.37 (3) (a).

12          (e) A description of the number, frequency, and nature of requests for disclosure  
13 of records generated under the program.

14          (f) The number of individuals receiving prescription orders from 5 or more  
15 practitioners or having monitored prescription drugs dispensed by 5 or more  
16 pharmacies within the same 90-day period.

17          (g) The number of individuals receiving daily morphine milligram equivalents  
18 of 1 to 19 milligrams, 20 to 49 milligrams, 50 to 99 milligrams, and 100 or more  
19 milligrams.

20          (h) The number of individuals to whom both opioids and benzodiazepines were  
21 dispensed within the same 90-day period.

**SECTION 3. Nonstatutory provisions.**

22           (1) RECONCILIATION PROVISION. The treatment of 961.385 (6) (d) of the statutes  
23 by this act takes effect only if the treatment of section 961.37 (3) (a) of the statutes  
24 takes effect as shown in 2015 Wisconsin Act .... (Assembly Bill 365). If 2015  
25

**ASSEMBLY BILL 766**

**SECTION 3**

1 Wisconsin Act .... (Assembly Bill 365) does not become law, the treatment of section  
2 961.385 (6) (d) of the statutes by this act is void.

3 (END)

# Controlled Substances Board

## 2007 Annual Report

### **I. History and Membership**

In 1970, the Wisconsin Legislature created the Dangerous Substances Control Council. With the enactment of the Uniform Controlled Substances Act in 1971, the Council was recreated as the Controlled Substances Board (CSB). The Board consists of six (6) members with varying expertise to provide a balanced, multi-disciplinary approach to controlled substances policy decision-making.

In 1995, Wisconsin Act 305 transferred the Controlled Substances Board from the Department of Health and Family Services to the Department of Regulation and Licensing, effective May 16, 1996.

#### Statutory membership of the Board:

1. A psychiatrist (appointed by the Governor)
2. A pharmacologist (appointed by the Governor)
3. Chair of the Pharmacy Examining Board or their designee
4. State Attorney General or designee
5. Secretary of the Department of Agriculture, Trade and Consumer Protection or designee
6. Secretary of the Department of Health and Family Services or designee

#### Present members of the Board:

1. Darold Treffert, MD, Psychiatrist
2. Cecelia Hillard, PhD, Professor, Medical College of Wisconsin
3. Timothy Boehmer, R.Ph., Pharmacy Examining Board
4. Robert Block, Wisconsin State Crime Lab, Department of Justice
5. Yvonne M. Bellay, DVM, State Humane Officer, Department of Agriculture, Trade and Consumer Protection
6. Doug Engelbert R.Ph., Pharmacy Practice Consultant, Department of Health and Family Services

## **II. Board Responsibilities**

- To administer a program to prevent and control abuse of controlled substances pursuant to s. 961-36, Wis. Stats., as well as several other provisions of the Uniform Controlled Substances Act, Chapter 961
- To administer drug scheduling policy under Chapter 961, the Uniform Controlled Substances Act, including special projects on drugs of particular public concern
- To authorize non-practitioners to possess controlled substances for research, education, industrial processing, analytic processing, animal control and dog training, i.e., Special Use Authorization.
- To serve as an advisor on drugs of abuse and controlled substances policy matters
- To interpret provisions of the Uniform Controlled Substances Act.
- To form memoranda of cooperation with other state agencies to deal with the issues of diversion, abuse and legitimate use of controlled substances.
- To annually analyze the purchases of controlled substances in Wisconsin and to report unusual trends to the Department of Regulation and Licensing.

## **III. Special Use Authorization (SUA) Permits**

The Controlled Substances Board under Chapter 961 issues permits authorizing individuals to manufacture, obtain, possess, use, administer or dispense controlled substances. The Board issues approximately 280 special use permits annually. Permits are necessary for research, teaching, analytical laboratories, industrial applications, humane societies and drug detection dog training. A number of administrative and policy issues have been addressed by the Board to improve the permit process.

The Board continues to delegate two appointed members of the board to be liaisons to the department for approval of SUAs. The Board has also found that authorizing the credentialing liaison from the department to sign all SUAs that are approved by the board member liaisons has worked well. This allows the SUA process to not be delayed because of the inability of the board to review and act on them for several months. SUA holders who have not renewed are allowed a 30 day grace period to renew. If they do not respond to the late renewal letter, their SUA will be terminated. They will also receive a letter from the DEA informing them that they must dispose of any controlled substances they possess.

The application process continues to be improved and refined. The Department's web site contains all the forms necessary to apply for and amend an SUA application. There is also a document explaining the physical requirement for storage of controlled substances.

Having all the applications on line has allowed credentialing personnel to notify SUA holders to visit the web site, download the new or renewal application and send it in.

#### **IV. Drug Use Trends in Wisconsin**

Automation of Reports and Consolidated Orders System (ARCOS) is an automated, comprehensive drug reporting system which monitors the flow of DEA controlled substances from their point of manufacture through commercial distribution channels to point of sale or distribution at the dispensing/retail level. Included in the list of controlled substance transactions tracked by ARCOS are the following: All Schedules I and II materials (manufacturers and distributors); Schedule III narcotic and gamma-hydroxybutyric acid (GHB) materials (manufacturers and distributors); and selected Schedule III and IV psychotropic drugs (manufacturers only).

ARCOS accumulates these transactions and summarizes them into reports which give investigators information that is used to identify the diversion of controlled substances into illicit channels of distribution. The Board periodically tracks ARCOS data.

#### **V. Affiliations**

The Board has a membership position on the Wisconsin Council on Alcohol and Other Drugs of Abuse and sends a member to its meetings.

The Board also receives regional data from the state crime labs on the prevalence of controlled substances/illicit drugs found during screenings from emergency room admissions, and receives reports from the Federation of State Medical Board's National Clearinghouse on Internet Prescribing.

#### **VI. 2007 Accomplishments**

- The Board issued approximately 29 Special Use Authorization Permits.
- The Board continued inquiry and discussions regarding internet prescribing and the potential it holds for diversion of controlled substances.
- The Board adopted rules placing 2-C-T-7, BZP, AMT and 5 MeO-DIPT in Schedule I of the Controlled Substances law.
- The Board continues to collaborate with the Veterinary Examining Board on issues relating to the chemical immobilization of animals.
- The Board continued to cooperate with the Wisconsin Pain Initiative in its efforts to have the Medical, Pharmacy and Nursing Boards adopt position statements regarding pain management that successfully balance clinical concerns with diversion concerns.

- The Board held discussions regarding drug disposal plans, which included an presentation from a Drug Enforcement Administration agent.
- The Board began reviewing a draft of a legislative proposal that would regulate salvia divinorum.

## **VII. Future Activities**

- Continue to monitor internet prescribing practices to identify areas of potential diversion, continue to monitor federal and other state initiatives to deal with this problem, and work with existing Wisconsin agencies and the legislature to address it.
- The Board will continue to look at annual Medicaid information on controlled substance prescriptions and analyze it for trends in overuse of prescription controlled substances.
- Continue to monitor ARCOS data.
- Work with all those who have a stake in the development of a state prescription drug monitoring program for controlled substances.
- Fulfill the role given the CSB by recent legislation regarding methamphetamine precursors. Continue to review possible scheduling of any new chemicals that are discovered that could be converted to methamphetamine.
- Participate in planning and if necessary, monitoring, of drug disposal plans.
- Continue to monitor and propose legislation or rules related to scheduling of controlled substances when necessary.
- Invited Lindsey Draper, Office of Justice Assistance staff person to the Governor's Commission to Reduce Racial Disparities in the Wisconsin Justice System, to present information relating to the Commission's progress and relevant issues.
- Continue to encourage DEA agents to attend Controlled Substances Board meetings.
- The Board's legal counsel met with legislators and other groups about prescription drug monitoring programs on behalf of the Department.

**State of Wisconsin  
Department of Safety & Professional Services**

**AGENDA REQUEST FORM**

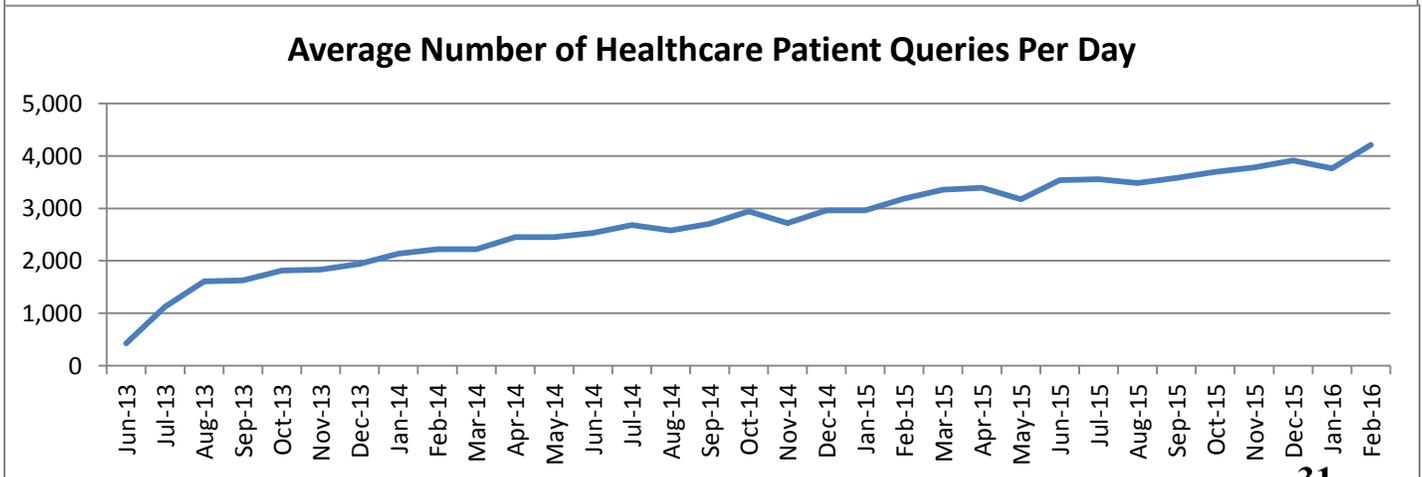
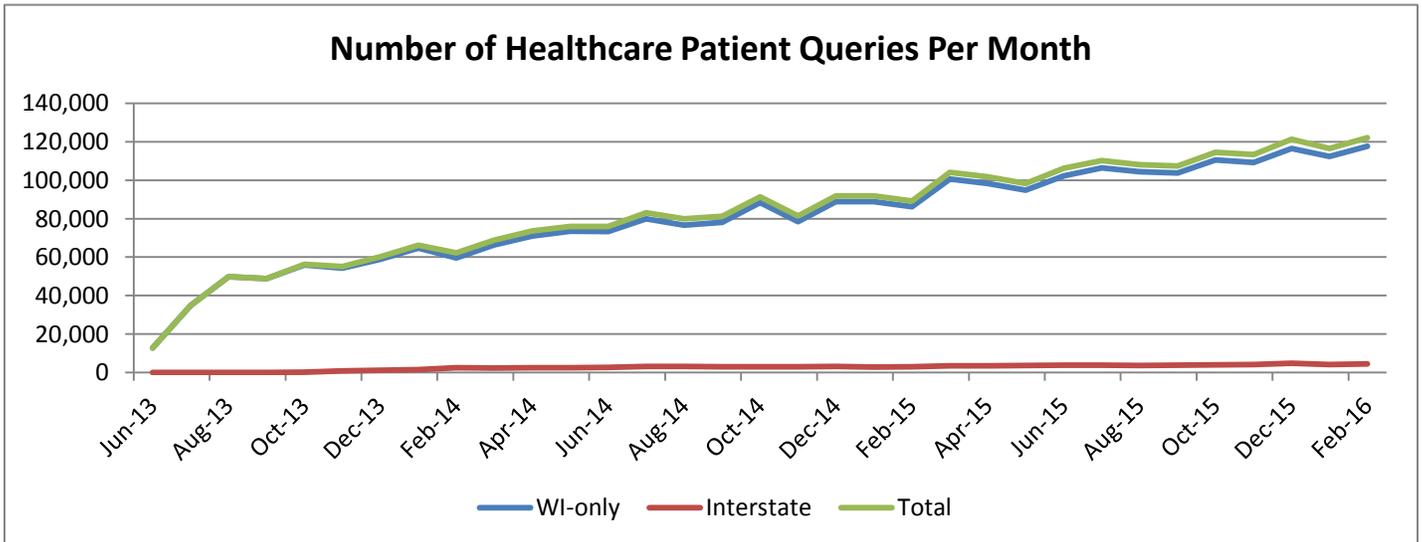
1) Name and Title of Person Submitting the Request:  <b>Chad Zadrazil</b>		2) Date When Request Submitted: <b>3/1/16</b> Items will be considered late if submitted after 4:30 p.m. and less than: <ul style="list-style-type: none"> <li>▪ 10 work days before the meeting for Medical Board</li> <li>▪ 14 work days before the meeting for all others</li> </ul>	
3) Name of Board, Committee, Council, Sections:  <b>WISCONSIN CONTROLLED SUBSTANCES BOARD</b>			
4) Meeting Date:  <b>3/15/16</b>	5) Attachments: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	6) How should the item be titled on the agenda page? <b>PDMP Statistics – Discussion and Consideration</b>	
7) Place Item in: <input checked="" type="checkbox"/> Open Session <input type="checkbox"/> Closed Session <input type="checkbox"/> Both	8) Is an appearance before the Board being scheduled? If yes, who is appearing?  <input type="checkbox"/> Yes by <input type="checkbox"/> No	9) Name of Case Advisor(s), if required:  N/A	
10) Describe the issue and action that should be addressed:  Discussion and consideration of PDMP operational statistics.			



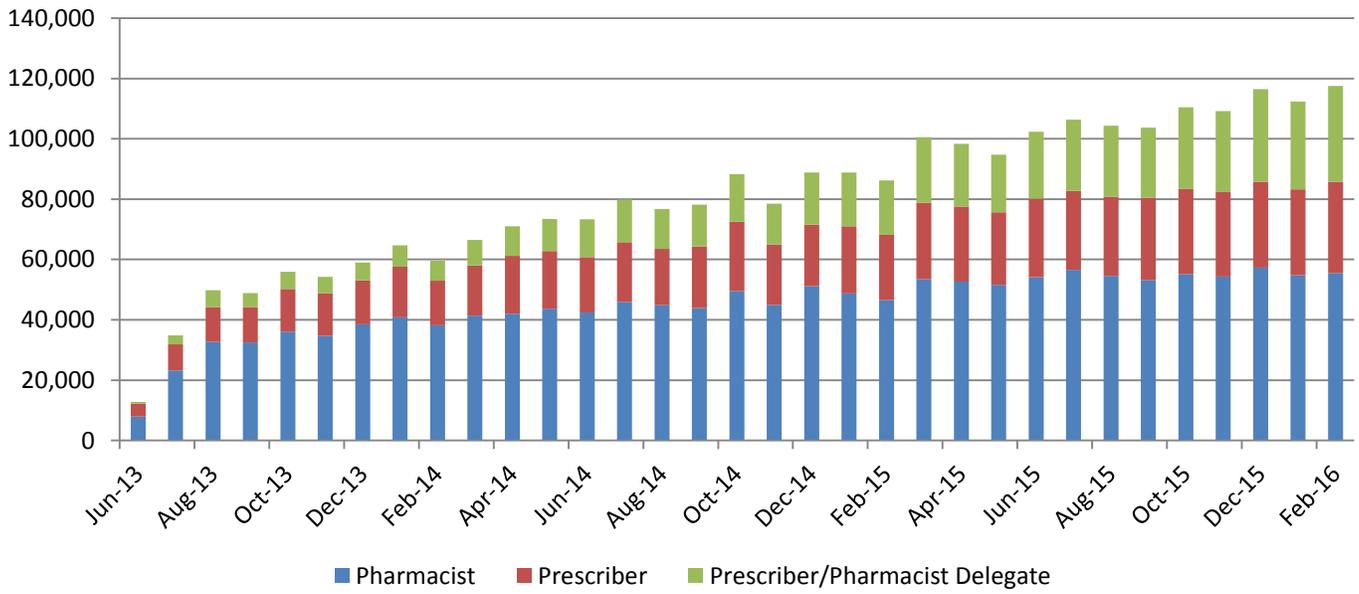
## Operational Statistics of the WI PDMP

*Compiled on March 10, 2016*

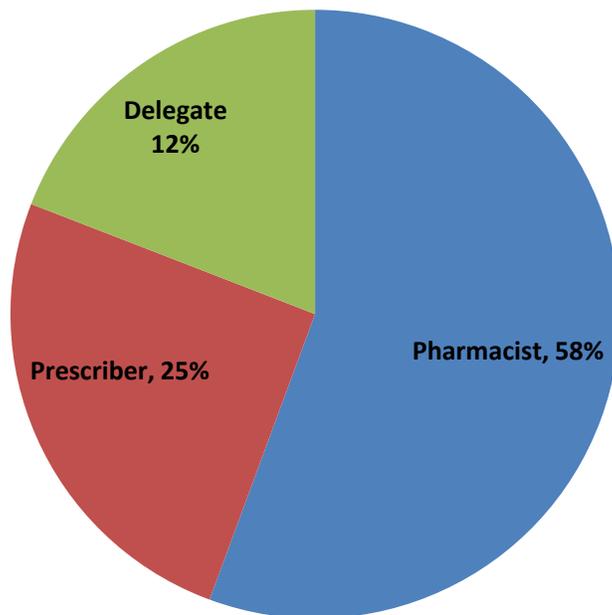
- Approximately 34.6 million R<sub>x</sub> records in the database
- Approximately 1,600 dispensers actively submitting data
- Approximately 14,500 healthcare users have query accounts
- Healthcare users have created over 2.75 million recipient queries since June 1, 2013
  - In addition, healthcare users have created over 90,000 interstate queries since October 1, 2013
- Healthcare Users have initiated approximately 1,600 alerts since July 1, 2013



### Healthcare Patient Queries Performed by User Group



### Healthcare Patient Queries Performed by User Group June 2013 - Feb. 2016

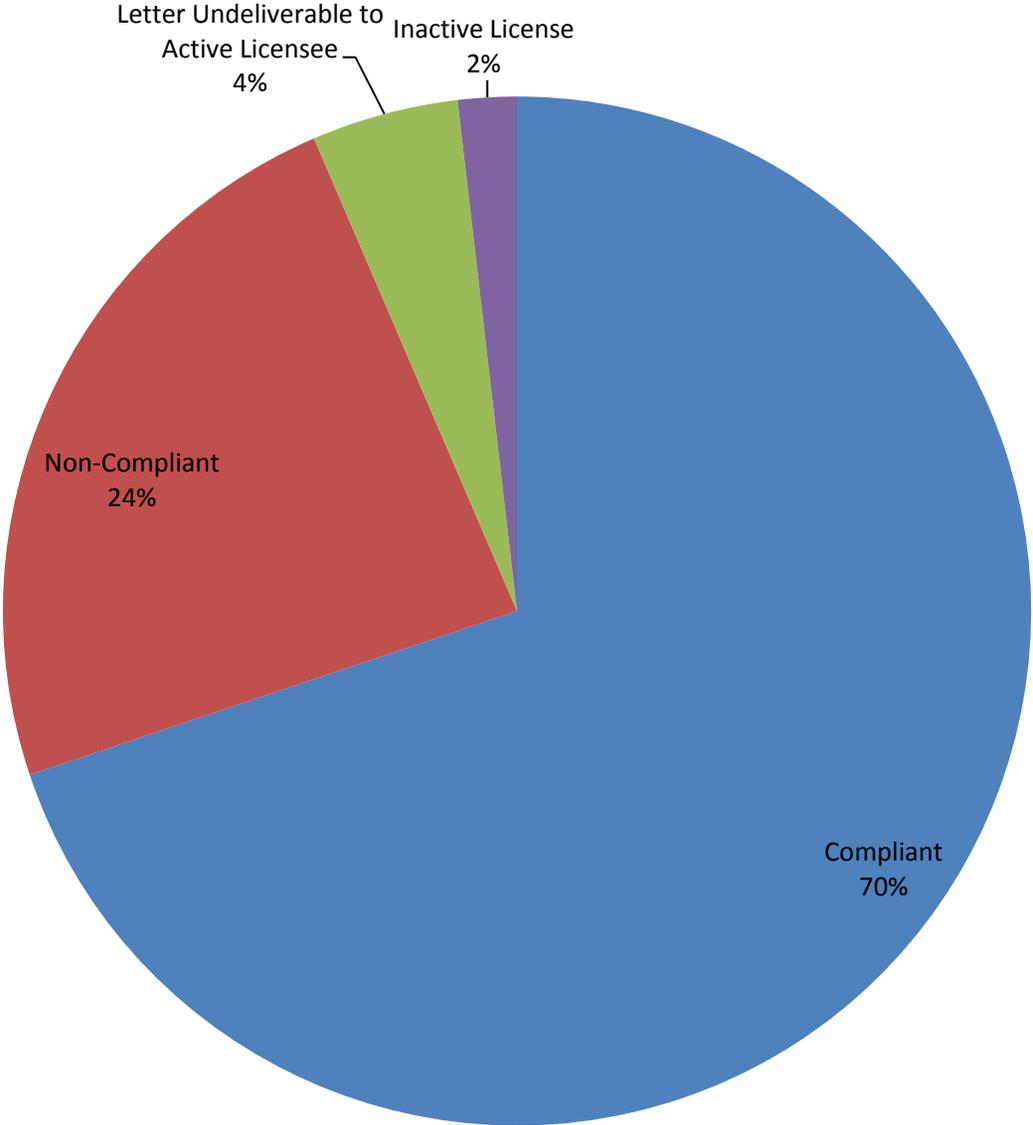


**State of Wisconsin  
Department of Safety & Professional Services**

**AGENDA REQUEST FORM**

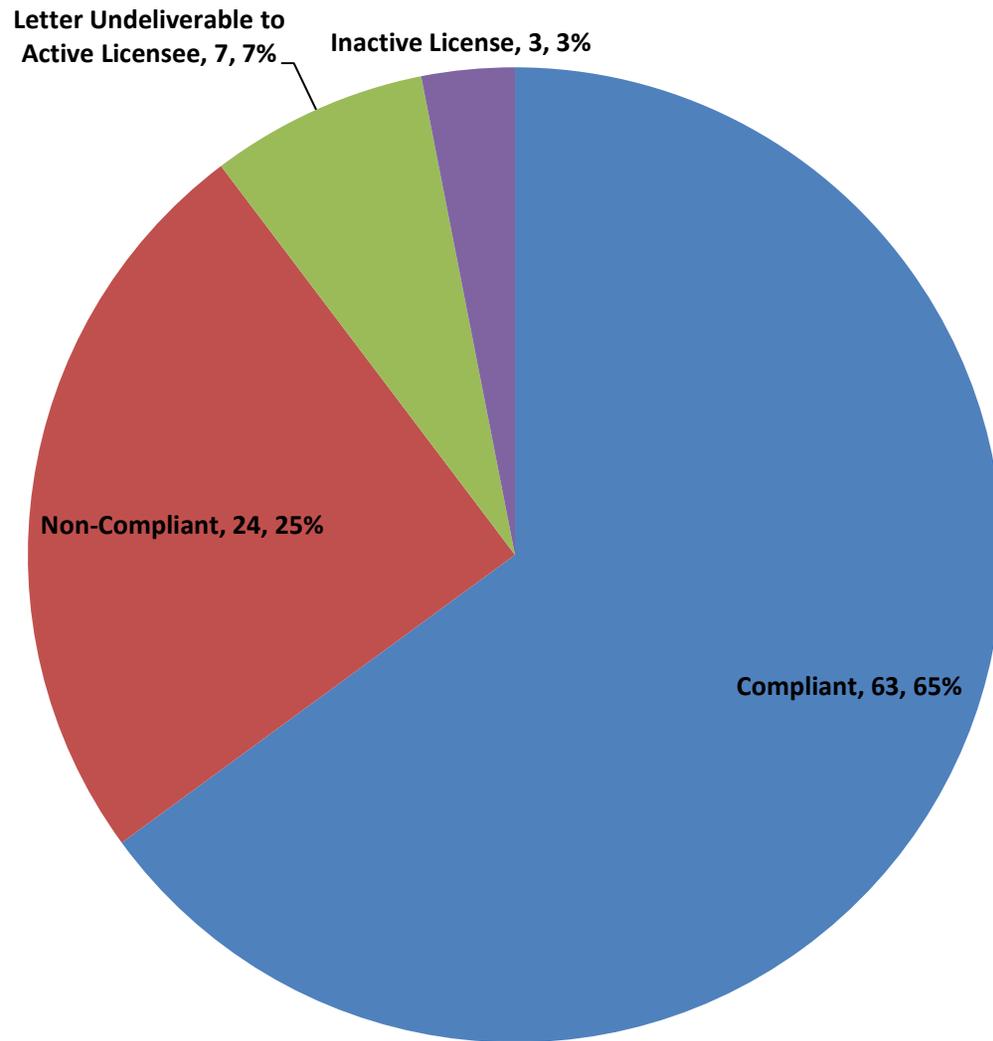
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3) Name of Board, Committee, Council, Sections:  <b>WISCONSIN CONTROLLED SUBSTANCES BOARD</b>			
4) Meeting Date:  <b>3/15/16</b>	5) Attachments: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	6) How should the item be titled on the agenda page? <b>Results from the December PDMP Pharmacy Compliance Audit – Discussion and Consideration</b>	
7) Place Item in: <input checked="" type="checkbox"/> Open Session <input type="checkbox"/> Closed Session <input type="checkbox"/> Both	8) Is an appearance before the Board being scheduled? If yes, who is appearing?  <input type="checkbox"/> Yes by <input type="checkbox"/> No	9) Name of Case Advisor(s), if required:  N/A	
10) Describe the issue and action that should be addressed:  Discussion and consideration of the results of the pharmacy compliance audit recently completed by PDMP staff and of possible referral of non-compliant pharmacies to the Pharmacy Examining Board.			

# 2015 PDMP Pharmacy Compliance Audit: Cumulative Results



n=325

## 2015 PDMP Pharmacy Compliance Audit: Results from Non-Compliance Letter

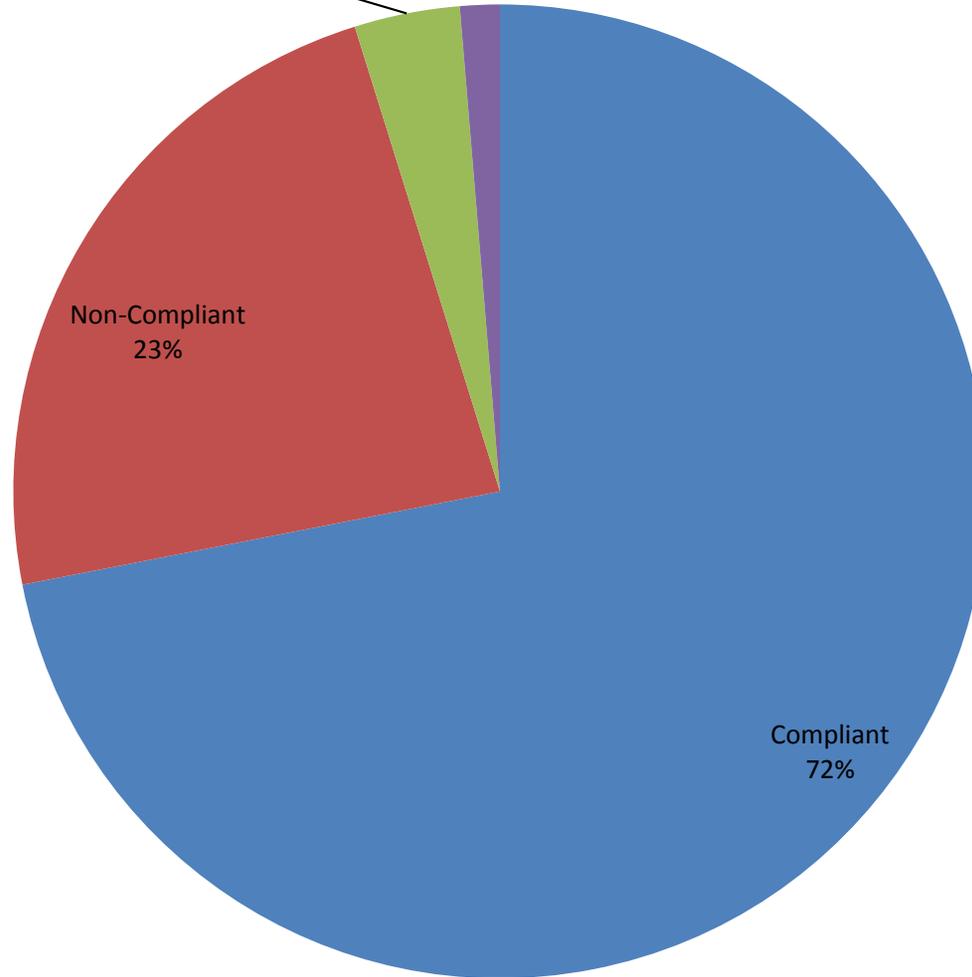


n=97

## 2015 PDMP Pharmacy Compliance Audit: Results from New Pharmacy Letter

Letter  
Undeliverable  
to Active  
Licensee  
4%

Inactive License  
1%



n=228

**State of Wisconsin  
Department of Safety & Professional Services**

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3) Name of Board, Committee, Council, Sections:  <b>WISCONSIN CONTROLLED SUBSTANCES BOARD</b>			
4) Meeting Date:  <b>3/15/16</b>	5) Attachments: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	6) How should the item be titled on the agenda page? <b>PDMP Access Suspension Process – Discussion and Consideration</b>	
7) Place Item in: <input checked="" type="checkbox"/> Open Session <input type="checkbox"/> Closed Session <input type="checkbox"/> Both	8) Is an appearance before the Board being scheduled? If yes, who is appearing?  <input type="checkbox"/> Yes by <input type="checkbox"/> No	9) Name of Case Advisor(s), if required:  N/A	
10) Describe the issue and action that should be addressed:  Discussion and consideration of the process the board may utilize to alter a user's access to the PDMP.			

**State of Wisconsin  
Department of Safety & Professional Services**

**AGENDA REQUEST FORM**

1) Name and Title of Person Submitting the Request:  <b>Chad Zadrazil</b>		2) Date When Request Submitted: <b>3/1/16</b> Items will be considered late if submitted after 4:30 p.m. and less than: <ul style="list-style-type: none"> <li>▪ 10 work days before the meeting for Medical Board</li> <li>▪ 14 work days before the meeting for all others</li> </ul>	
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4) Meeting Date:  <b>3/15/16</b>	5) Attachments: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	6) How should the item be titled on the agenda page? <b>ePDMP Development Update – Discussion and Consideration</b>	
7) Place Item in: <input checked="" type="checkbox"/> Open Session <input type="checkbox"/> Closed Session <input type="checkbox"/> Both	8) Is an appearance before the Board being scheduled? If yes, who is appearing?  <input type="checkbox"/> Yes by <input type="checkbox"/> No	9) Name of Case Advisor(s), if required:  N/A	
10) Describe the issue and action that should be addressed:  Discussion and consideration of the development of the ePDMP.			

**From:** [Bellay, Yvonne M - DATCP](#)  
**To:** [Zadzizil, Chad J - DSPP](#)  
**Subject:** FW: New Opioid Prescribing Guidelines for Management of Acute Pain to Prevent Drug Overdoses  
**Date:** 19 Jan 2016 10:05:42 AM

---

Chad,

Because I am also licensed in Ohio, I received this email today from Ohio Vet Med Board. I thought it might be of interest to the CSB.

Yvonne

Yvonne M Bellay, DVM, MS  
Animal Welfare Programs Manager/Epidemiologist  
Wisconsin Department of Agriculture, Trade and Consumer Protection  
Division of Animal Health

---

**From:** McClain, Joseph [mailto:Joseph.McClain@ovmlb.state.oh.us]  
**Sent:** Tuesday, January 19, 2016 9:53 AM  
**To:** Bellay, Yvonne M - DATCP <>  
**Subject:** New Opioid Prescribing Guidelines for Management of Acute Pain to Prevent Drug Overdoses

**[Do not reply to this email](#)**

Dear Clinician:

With the support of clinicians, Ohio has made some promising progress in key areas in its fight against prescription opioid abuse. In recent years, both the number of opioid doses dispensed to Ohio patients and the number of “doctor shoppers” have decreased, according to data from the Ohio Automated Rx Reporting System (OARRS).

Still, there is more that we must do to save lives. Prescription opioids remain a significant contributor to unintentional drug overdose deaths in Ohio, and the number overdose deaths increased year-to-year from 2012 through 2014. In this brief [video clip](#), Gov. John R. Kasich asks for your continued support in fighting prescription opioid abuse.

The Governor's Cabinet Opiate Action Team developed opioid prescribing guidelines for [emergency departments](#) in 2012 and for the management of chronic pain in 2013. It is now releasing new Guidelines for the Management of Acute Pain Outside of Emergency Departments for the management of acute pain expected to resolve within 12 weeks. Like the previous prescribing guidelines, these new guidelines are intended to supplement—not replace—clinical judgment. In this brief [video clip](#), a young patient shares his story of life on opioids: from legitimate use during recovery from a sports injury, to abuse and addiction.

Please visit [opioidprescribing.ohio.gov](http://opioidprescribing.ohio.gov) for copies all three opioid prescribing guidelines and prescriber tools and resources, including a letter to give to patients that explains a safer approach to treating their acute pain following these guidelines.

These new prescribing guidelines for the outpatient management of acute pain have been endorsed by numerous organizations including but not limited to: Ohio State Medical Association, Ohio Osteopathic Association, Ohio Academy of Family Physicians, Ohio Physical Therapy Association, Ohio Hospital Association, Ohio Public Health Association, State Medical Board of Ohio, Ohio State Dental Board, Ohio Board of Nursing, and State of Ohio Board of Pharmacy.

Thank you for your continued support in Ohio's fight against prescription opioid abuse.

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[id=16365653.637434ca7738be76669d7bb9470d552c&n=T&l=ovmlb-board&o=482839](http://list.em.ohio.gov/u?id=16365653.637434ca7738be76669d7bb9470d552c&n=T&l=ovmlb-board&o=482839)

(It may be necessary to cut and paste the above URL if the line is broken)

or send a blank email to [leave-482839-](mailto:leave-482839-16365653.637434ca7738be76669d7bb9470d552c@list.em.ohio.gov)

[16365653.637434ca7738be76669d7bb9470d552c@list.em.ohio.gov](mailto:16365653.637434ca7738be76669d7bb9470d552c@list.em.ohio.gov)



Breaking News: Wall Street rally pushes Dow and S&P 500 up more than 2 percent; Nasdaq closes up nearly 3 percent

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Related: HEALTH

# Benzodiazepine prescriptions, overdose deaths on the rise in U.S.

BY MADELINE KENNEDY

(Reuters Health) - Even as opiate abuse has become a growing problem in the U.S., overdose deaths involving sedatives and antiseizure medications in the benzodiazepine category have also risen steeply, according to a recent study.

Prescriptions for benzodiazepines have more than tripled and fatal overdoses have more than quadrupled in the past 20 years, researchers found.

“Overdoses rose at a faster rate than prescriptions, suggesting that people were using benzodiazepines in a riskier way over time,” said lead author Dr. Marcus Bachhuber, assistant professor of medicine at Albert Einstein College of Medicine in New York.

Benzodiazepines typically used to treat anxiety or depression include alprazolam (Xanax), chlordiazepoxide (Librium), diazepam (Valium) and lorazepam (Ativan). The benzodiazepine clonazepam (Klonopin) is used for seizures, while oxazepam (Serax) and temazepam (Restoril) are used for insomnia.

“Benzodiazepines have several known safety risks: in addition to overdose, they are conclusively linked to falls, fractures, motor vehicle accidents, and can lead to misuse and addiction,” Bachhuber told Reuters Health by email.

The study team used data from the annual Medical Expenditure Panel Surveys between 1996 and 2013, which asked U.S. adults whether they had filled one or more benzodiazepine prescriptions.

In those 20 years, the number of adults with benzodiazepine prescriptions grew by more than two thirds, from 8.1 million to 13.5 million, the researchers found. In 1996, around 4 percent of people surveyed had filled a benzodiazepine prescription, and by 2013, this had risen to 5.6 percent.

They also found that the amount of medication distributed had grown by three-fold. After standardizing doses of all drugs, they found that people with prescriptions received 1.4 times more medication in 2013 than 20 years earlier.

Benzodiazepines were most often prescribed for anxiety disorders, mood disorders such as depression, and insomnia.

Based on data from the Centers for Disease Control and Prevention, overdose deaths involving benzodiazepines rose from 0.58 per 100,000 people in 1999 to 3.07 per 100,000

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in 2013, according to the results in American Journal of Public Health.

This increase seemed to level off after 2010 overall, but among certain groups, including people over age 65 and certain minorities, there was no plateau and the rate kept rising, the study found.

Higher doses, more days of treatment and people combining their prescriptions with illegally obtained benzodiazepines may account for the increase in overdose deaths, the study team writes.

Dr. Tae Woo Park told Reuters Health by email that deadly overdoses from benzodiazepines alone are actually rare.

"Typically, overdose deaths occur when the benzodiazepine is combined with another sedating medication, such as an opioid or alcohol," said Park, a professor at the Alpert Medical School at Brown University in Providence, Rhode Island, who was not involved in the study.

Park added that benzodiazepines are not recommended for older people because of the risk of falls.

Bachhuber said the public and doctors need to be aware of the dangers of combining benzodiazepines with other substances and should keep in mind alternative treatments including therapy or safer medications.

"Benzodiazepine prescriptions are widespread, but their use may not be the smart choice for many patients," Bachhuber said.

"People should be cautious when taking benzodiazepines, particularly when combining them with alcohol or opioid medications," Park added.

SOURCE: bit.ly/1RW7vnS American Journal of Public Health, online February 18, 2016.

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## ANNUAL REPORT

<b>SCAODA goals for 2014-18</b>
1. Provide leadership and direction on AODA issues in Wisconsin by serving as the voice to whom the Governor, legislators, local coalitions, and media turn for guidance on AODA issues and promote collaboration across multiple sectors to advance progress on SCAODA goals.
2. Change Wisconsin's cultural norms to transform the state's AODA problems into healthy behavioral outcomes.
3. Inform Wisconsin citizens on the negative fiscal, individual, and societal impacts of substance abuse.
4. Advocate for adequate funding, capacity, and infrastructure to implement effective outreach, prevention, treatment, and recovery services for all in need.
5. Remedy historical, racial /ethnic, gender, and other bias in substance use disorder systems, policies, and practices.

<b>SCAODA priorities for 2014-15</b>
1. Expand substance use disorder workforce capacity
2. Address population-specific needs
3. Reduce harmful alcohol consumption
4. Inform the public about substance use disorder-related consequences
5. Increase the use of evidence-based practices in prevention, treatment, and recovery
6. Address emerging substance use disorder trends

Committee	Plan to address goal/priority	SCAODA Goal	SCAODA Priority	Progress
Diversity	Develop a logo.	5	2	<ul style="list-style-type: none"> <li>Completed.</li> </ul>
	Develop a process to identify unmet needs of underserved populations.	5	2	<ul style="list-style-type: none"> <li>Ongoing.</li> <li>Increased diversity members—bringing different voices to the table.</li> <li>Rotating the Diversity meeting between different underserved agencies to learn of their local needs.</li> <li>Reviewed existing state and federal disparities data reports.</li> <li>Influenced DMHSAS to add Deaf and Hard of Hearing population in the DMHSAS data system (PPS).</li> <li>Reviewed DMHSAS data report (2013/2014).</li> </ul>
	Promote CLAS protocols for identifying culturally-intelligent (CI) best practices and advocate for CI training for AODA counselors.	5	2	<ul style="list-style-type: none"> <li>Diversity Committee received CLAS Standard updates.</li> <li>Diversity Committee learned about Division of Public Health CLAS Standard initiative.</li> <li>Diversity Committee scheduled a CLAS Standard update/training for SCAODA at its September 11 meeting.</li> </ul>
	Advocate for training and retention of minority AODA counselors.	4	2	<ul style="list-style-type: none"> <li>Leadership &amp; Culture: a community empowerment institute.</li> <li>Diversity Committee advocated for more underserved workshops at the mental health and substance abuse annual conference.</li> <li>Diversity Committee's letter sent to SCAODA regarding licensing issues (DSPS).</li> <li>Diversity Committee is working on getting a DSPS staff to present at Diversity meeting.</li> </ul>
	Have a presence at the annual mental health and substance abuse conference and make annual presentations to SCAODA.	5	2,5	<ul style="list-style-type: none"> <li>2014 – underserved topics (LGBT, veteran, Latino, Native American, African and Hmong) were included in the annual conference.</li> <li>CLAS Standard will be held at SCAODA in September.</li> <li>Scheduled Diversity workshop for October 21, 2015.</li> </ul>
	Maintain the diversity portion of the	4	2	<ul style="list-style-type: none"> <li>Ongoing.</li> </ul>

	SCAODA website.			
<b>Intervention and Treatment</b>	Increase the number of parents identified with substance use disorders who are referred to treatment and identify a protocol to assess parents with children in the child welfare system for substance use disorders.	4	2,5	<ul style="list-style-type: none"> <li>• SCAODA adopted the motion to formally seek collaboration between DHS and DCF in order to improve outcomes for families with SUD involved in the child welfare system. DCF invited SCAODA to provide a member to the DCF council and Norman Briggs began to serve in this capacity.</li> <li>• The development of an assessment tool was put on hold pending the results of further collaboration.</li> </ul>
	Increase adolescent treatment services and identify the extent to which providers use the Adolescent Treatment Framework.	4	2,5	<ul style="list-style-type: none"> <li>• The renewal of the Children, Youth and Family sub-committee was completed, including recruitment of members.</li> <li>• The CYF committee is currently exploring the treatment programs available in Wisconsin.</li> </ul>
	Create a workgroup to review certification guidelines for opioid treatment providers and ensure the use of evidence-based treatment and case management.	4	2,5,6	<ul style="list-style-type: none"> <li>• ITC members obtained increased knowledge of the strengths, concerns and barriers associated with medication-assisted treatment (presentation by Dr. Felgus).</li> <li>• Data were gathered regarding suboxone providers in Wisconsin.</li> <li>• Funding was approved for three new opioid treatment programs and these programs are being developed as of August 2015.</li> </ul>
<b>Planning and Funding</b>	Create steady revenue streams to fund AODA prevention and treatment efforts by creating an ad hoc committee to study possible funding structures and support adequate Medicaid reimbursement for AODA services.	4	1, 3, 5	<ul style="list-style-type: none"> <li>• Funding ad hoc committee has met seven times and drafted a report that will be presented to SCAODA at the December meeting.</li> <li>• SCAODA supported the expansion of Medicaid to cover the treatment portion of residential substance use disorder treatment.</li> <li>• The committee recommended system-wide SBIRT implementation be a priority in the 2016-17 block grant plan. Implementation in the schools is a plan priority and SBIRT is current being implemented in some schools.</li> </ul>

				<ul style="list-style-type: none"> <li>Proposed priorities for the 2016-17 SABG plan, including implementing SBIRT and addressing binge drinking and opioid abuse.</li> </ul>
	Develop a clear and consistent SCAODA message that the public and legislators will support.	1, 2, 3	3, 4	<ul style="list-style-type: none"> <li>The committee developed educational materials that were distributed to all legislators after the 2014 election.</li> <li>A “SCAODA” message has not yet been developed.</li> </ul>
	Increase the capacity of SCAODA to effectively advocate on AODA matters.	1, 4	3, 4	<ul style="list-style-type: none"> <li>A committee member met with the new SCAODA legislative representatives. The only unfilled position is the Assembly Republican representative. Letters were sent to the Assembly Republican leadership and the health field-related committee chairs seeking a representative.</li> <li>Proposed statutory language has been drafted to change the SCAODA statute to increase the number and variety of representatives.</li> <li>Hosted a public forum in October 2014 to gather key stakeholder input on substance use disorder issues.</li> </ul>
<b>Prevention</b>	Promote trauma-informed care within substance use disorder system.	5	2,5	<ul style="list-style-type: none"> <li>A session on trauma informed care was presented at the state prevention training in June 2015.</li> <li>Judie Hermann from DCF provided information to the committee on upcoming trainings and will keep the group updated on adverse childhood experiences (ACE) master trainers.</li> <li>Milwaukee County is partnering with the United Way to implement a trauma informed care screening project in a community school.</li> </ul>
	Inform credentialing rules related to professional prevention specialist certification.	4	1	<ul style="list-style-type: none"> <li>DSPS provided a training session at the state prevention training in June 2015.</li> <li>DHS staff shared concerns and questions from providers developed through consultation with the prevention committee with DSPS related to certification.</li> <li>The Prevention Committee will</li> </ul>

				review the DSPS Substance Abuse Counselor Board Membership and decide whether it would be appropriate to request further representation from the prevention field (October 2015).
	Explore convening a study group to research how to integrate AODA prevention and public health policies in the workplace.	1,3,5	1,2,3,4,5,6	<ul style="list-style-type: none"> <li>• A presentation was provided on workplace substance use disorder prevention at the state prevention training in June 2015.</li> <li>• Representation from workplace policy experts was recruited for participation on the marijuana ad-hoc committee.</li> <li>• The Prevention Committee has requested that workplace issues be a standing agenda item for all Prevention Committee meetings.</li> <li>• Presentation by Scott Webb (DHS) to SCAODA.</li> <li>• Committee members will be recruited to participate in a workgroup to discuss workplace issues with the Wisconsin Association of Local Health Departments and Boards.</li> </ul>
	Create an ad hoc committee to study policies related to marijuana.	1,3,5	2,4,6	<ul style="list-style-type: none"> <li>• Several sessions on marijuana legalization were presented at the state prevention training in June 2015.</li> <li>• The marijuana ad-hoc committee was formed in October 2014 and has been meeting to develop recommendations.</li> <li>• The final meeting of the ad-hoc committee will take place on Aug. 27, 2015, with a recommendation report ready for the prevention committee to review in October 2015 and SCAODA in December 2015.</li> </ul>

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# Marijuana in Wisconsin



## *Research-Based Review and Recommendations for Reducing the Public Health Impact of Marijuana*

**December 2015**

Wisconsin State Council on Alcohol and Other Drug Abuse  
Prevention Committee  
Marijuana Ad-hoc Committee



State of Wisconsin  
State Council on Alcohol and Other Drug Abuse  
1 West Wilson Street, P.O. Box 7851  
Madison, Wisconsin 53707-7851



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## Charge to the Marijuana Ad Hoc Committee

Over the past several years, the Wisconsin State Council on Alcohol and Other Drug Abuse (SCAODA) has issued reports that have focused on the prescription drug and heroin epidemic facing Wisconsin, as well as policy solutions aimed at these issues.

- *In 2012, the Controlled Substances Workgroup's report, Reducing Wisconsin's Prescription Drug Abuse: A Call to Action (Call to Action Report), it was recommended that SCAODA convene a workgroup to examine the use and related consequences of illicit drug use in Wisconsin, focusing on illegal opiates.*
- *In 2013, the SCAODA 911 Good Samaritan Legislation Ad-hoc Committee produced a report and subsequently also recommended that a workgroup be formed and dedicated to identifying the extent of heroin use in the state of Wisconsin and examining the many facets that lead to heroin use.*
- *In 2014, the Heroin Ad-hoc Committee produced the report Wisconsin's Heroin Epidemic: Strategies and Solutions (Analysis and Recommendations for Reducing Heroin Abuse in Wisconsin) providing recommendations to SCAODA regarding programming that could be implemented to prevent and reduce the harm associated with heroin use and assist communities in dealing with heroin-related public health consequences.*

During this time, SCAODA Prevention Committee members readily acknowledged the need for a Marijuana Ad-hoc Committee. Throughout the research process for both the SCAODA Controlled Substances report and Heroin Epidemic report, the consistent theme heard from individuals with substance use disorders and professionals who treat them, was that they did not start with heroin or prescription drugs. The answer was more times than not marijuana and/or alcohol. Heightening this need is the nationwide marijuana movement, in which some States have decriminalized marijuana possession, legalized marijuana for medicinal use, as well as legalized marijuana for recreational use.

For these reasons, the Wisconsin SCAODA established the Marijuana Ad-hoc Committee in October 2014. Under the guidance of the SCAODA Prevention Committee's purpose and goals, the Marijuana Ad-hoc Committee was charged with researching, evaluating and developing recommendations that best serve the public health and safety of all Wisconsin residents. Looking at the issue objectively, the committee will come to a place of offering recommendations on these issues.



## Marijuana Ad Hoc Committee Membership

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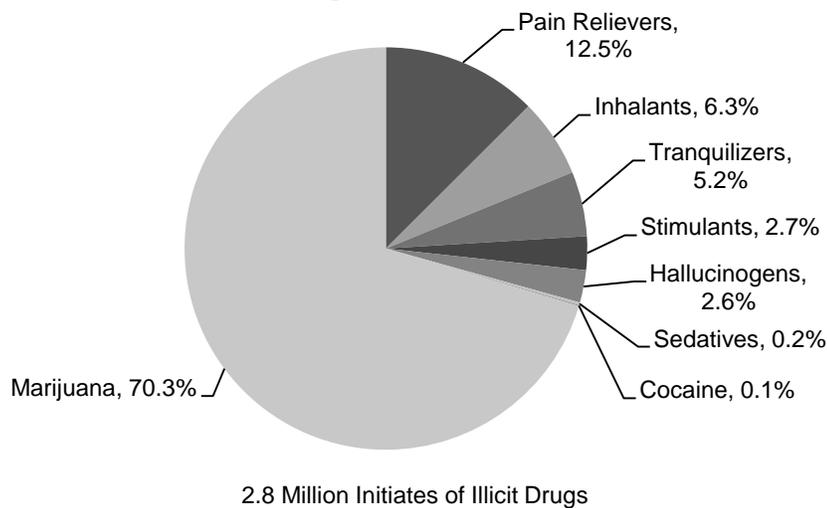
*\*Workgroup members listed were contributors to this report. Individual recommendations in this report are not necessarily endorsed by them, or their employers.*



## Background

The United States has a richly storied and complex history of marijuana use and subsequent regulation. Nationally, whether smoked, eaten, drunk or inhaled, marijuana is the most commonly used illicit drug (SAMHSA, 2014). According to the National Survey on Drug Use and Health (NSDUH, 2013), marijuana use has increased since 2007. In 2013, there were 19.8 million current users, or about 7.5 percent of people aged 12 or older; up from 14.5 million (5.8 percent) in 2007. Data further indicates that more than half of new illicit drug users begin with marijuana (NSDUH, 2013).

### First Specific Drug Associated with Initiation of Illicit Drug Use, 2013

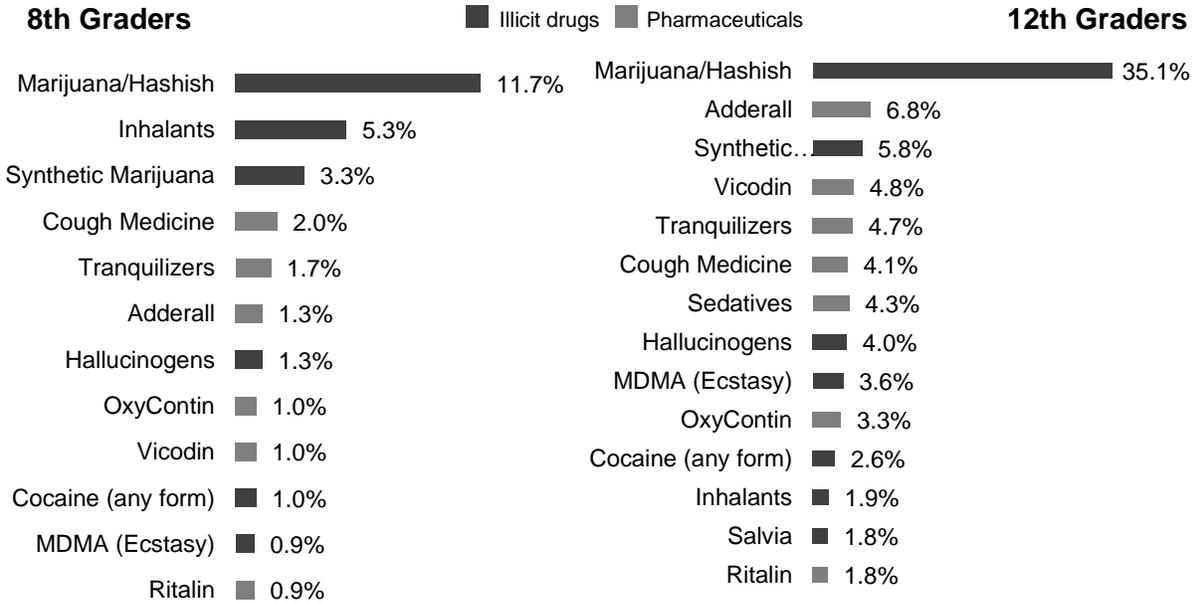


The NSDUH (2013) notes that marijuana use is widespread among young people and is favored most by those 18-20 years old. While a yearly survey of middle and high school students reveals rates of marijuana use have leveled after several years of increase, the number of young people who believe marijuana use is risky is decreasing (Johnston, 2014).

Concurrently, University of Michigan's 2014 Monitoring the Future Study collected similar findings after surveying drug use and attitudes among American 8th, 10th, and 12th graders. The data highlighted encouraging news about youth drug use including no increase in use of marijuana and a general decline over the last two decades in the use of illicit drugs. However, the survey called attention to concerning and growing trends; namely, decreases in perceived harm and disapproval of marijuana use (Monitoring the Future, 2014).



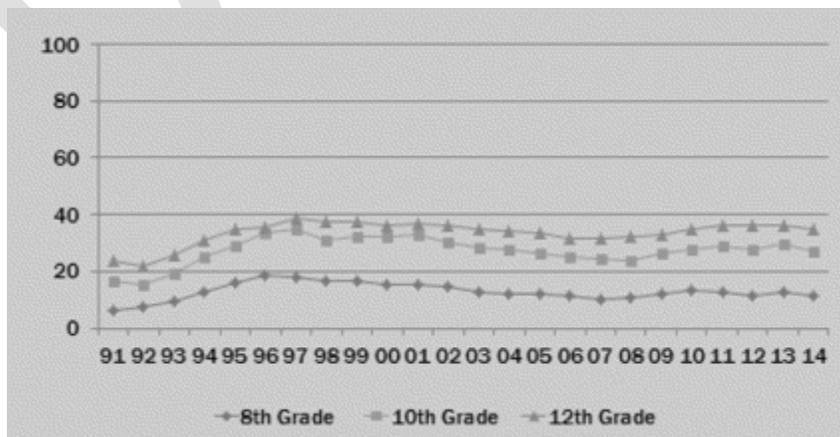
### Top Drugs among 8<sup>th</sup> and 12<sup>th</sup> Graders, Past Year Use



\* Only 12<sup>th</sup> graders surveys about sedative use  
Source: University of Michigan, 2014 Monitoring the Future Study

Among youth, marijuana use remained stable in 2014, even though the percentage of youth perceiving the drug as harmful went down. In all grade levels (8<sup>th</sup>, 10<sup>th</sup> and 12<sup>th</sup>), past 30-day use remained constant. Data shows that 8th graders stayed at 6.5 percent, 10th graders at 16.6 percent, and 12th graders at 21.2 percent. Amongst 12th graders, nearly 6 percent report daily use of marijuana, which is similar to 2013 data. In addition, 81 percent of 12 graders reported that the drug is easy to obtain. In 2014 perceived availability of marijuana did decline among 8<sup>th</sup> graders. Nearly 37 percent of 8<sup>th</sup> graders reported it is easy to obtain marijuana, compared to 39.1 percent in 2013 (Monitoring the Future, 2014).

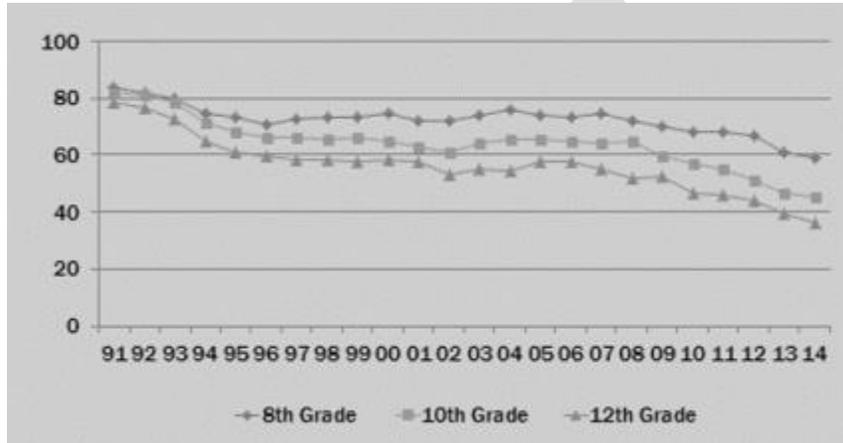
#### Percent of Students Reporting Use of Marijuana in Past Year





Although rates of use among youth have remained comparatively stagnant over the past several years, a notable shift of teens’ attitudes about marijuana’s perceived risks endures. Among high school seniors, the majority do not believe smoking marijuana occasionally is harmful. Over a recent five year period (2009-2014), the perception that regular use of marijuana puts the user at great risk has also seen a steep decline. In 2009, 52.4 percent of 12<sup>th</sup> graders believed regular use posed a great risk to the user. In 2013, this number dropped to 39.5 percent and again to 36.1 percent in 2014. Conversely, 56.7 percent of seniors say they disapprove of adults who smoke it occasionally, and 73.4 percent say they disapprove of adults smoking marijuana regularly (Monitoring the Future, 2014).

**Percent Perceiving Great Risk of Smoking Marijuana Regularly**



Moreover, marijuana use continues to exceed cigarette use in all three grade levels. In 2014, 21.2 percent of high school seniors had used marijuana in the past 30 days, whereas only 13.6 percent had smoked cigarettes (Monitoring the Future, 2014).

Rates of actual and perceived marijuana use among youth and adults, alike, is important as it causes physical and mental health consequences, including marked short- and long-term effects on the brain. While it is more likely to happen with daily use, or if started at a young age, addiction can develop. Altogether, marijuana can cause problems with memory, learning and behavior; consequences that are compounded with increasing amounts of THC found in present-day marijuana.



## Executive Summary

For 12 months, the Marijuana Ad-hoc Committee examined the scope of marijuana use and problems associated with use that face Wisconsin and its citizens. The Committee developed recommendations to reduce the public health and safety consequences related to marijuana use.

In researching this broad topic, the Committee quickly recognized the need to not only focus on prevention efforts by reducing the initiation of marijuana use, but also how marijuana use affects individuals, families, and larger systems within the general public. It was agreed upon by Committee Members to break into Workgroups to capture all of these issues, including identification of vulnerable members of the population. The Workgroups included:

- 1) **Cannabinoid Research**
- 2) **Legalities and Regulations**
- 3) **Prevention**
- 4) **Treatment and Recovery**

This report provides recommendations specific to each of the four Workgroup sections. The recommendations include comprehensive approaches for addressing the prevention of marijuana use and other substance use disorders at the individual, family, organizational, community, municipality, county, tribal and state levels.

The Marijuana Ad Hoc Committee would like to thank the following individuals and organizations for their assistance, guidance and expertise in developing these recommendations: Norman Briggs (ARC), Derek Iverson (Marshfield Police Department), Andrea Jacobson (Wisconsin Department of Health Services), Robert Kovar (Marshfield Clinic Center for Community Outreach), Lucas Moore (Wisconsin Department of Health Services), and Nick Oleszak (Constructive Analytics).



## Cannabinoid Research

### Basis for the Use of Cannabinoids in Medicine

Throughout most of human history cannabis has been used as a therapeutic agent with no real understanding of how it affects the body and on what basis it produces its effects. It was not until 1964 that the psychoactive component of cannabis, delta-9-tetrahydrocannabinol (THC) was discovered and later synthesized (Gaoni & Mechoulam, 1964). It was also around this time that smoked cannabis began to gain popularity and that individuals began to experiment with smoked cannabis as a delivery vehicle for its perceived therapeutic benefits. Because of a lack of technology required to truly understand the active components of cannabis, it has only been in the past three decades that cannabinoids and their respective bodily systems have begun to be understood. The age of modern cannabinoid therapeutics has now started and a brief literature search yields an abundance of current research into potential and real therapeutic benefits of the active ingredients of cannabis.

It is important to make some distinctions in nomenclature for the purposes of distinguishing plant-based extracts (whole dried cannabis, oil extracts of cannabis, etc.) from pharmaceutical grade compounds (a distinct chemical entity produced in a reproducible fashion via specific laboratory methods to a known degree of purity, dose, and chemical structure). **Throughout the rest of this section, the term(s) cannabis or marijuana will denote non-pharmaceutical grade extracts of one or more of the cannabis plant species or parts of the whole plant itself, whereas the term cannabinoids will be utilized to denote specific chemical entities (whether natural or synthetic) that have been discovered and/or produced by the exacting standards of laboratory science via reproducible methods.** It is this latter group of pharmaceutical grade compounds that have permitted clinicians and scientists to begin to study and understand the exact mechanism by which this family of chemicals produces their physiological effects on the human body.

Through the study of these cannabinoid entities, by the late 1980's and early 1990's scientists began to discover the intricate neural networks that comprise the endocannabinoid system in the human body. While the endocannabinoid system is still not fully understood, it has become clear that the cannabinoid receptors (to which THC and other cannabinoid compounds attach to produce their effects) are found in nearly every system of the body. As such, the endocannabinoid system appears to play a crucial role in the body's normal physiology. Please see Appendix **A** for an in-depth look at the endocannabinoid system.

#### Difference between Folk Remedies and Modern Medicine

##### Plant-based Extract (Folk Remedies)

- Use plant products whose composition is uncertain and unregulated.
- Treat poorly defined illnesses or symptoms with unknown basis.
- Are based on little understanding on the pathophysiology of the disorders being treated.
- Are based on little understanding of the role of "medicine" in the therapy.
- Are used in inconsistent and hard-to-quantify amounts.

##### Pharmaceutical Grade Chemicals (Modern Medicine)

- Use highly purified or defined medications, often compromising chemicals synthesized in a laboratory.
- Treat specific diseases (FDA approved for specific indications at specific dosages).
- Elucidate the nature of the illness.
- Use medicines that have a recognized effect on pathological processes; often understand the mechanism of action.
- Are administered in controlled doses; delivery systems provides predictable does over a defined period of time.



The following sub-sections will focus primarily on evidence derived from well controlled, scientifically sound clinical trials to determine current knowledge of clinical indications, routes of administration, and dosing for cannabinoid therapeutics; investigational or theoretical therapeutic indications; and well described adverse effects.

## Current Research and Specific Indications for the Use of Cannabinoids in Medicine

One of the most common rationalizations provided by advocates for the legalization of cannabis, cannabis extracts, and cannabinoid pharmaceuticals is that the Drug Enforcement Agency's (DEA's) schedule 1 designation, which creates an illegal status for herbal cannabis and certain specific cannabinoids, hampers research into the potential therapeutic potential of cannabinoid pharmaceuticals. In fact, as is evident by the accumulating research noted in this section, *this is not the case*. In Wisconsin, for example, Wisconsin State Statute 961.335, titled Special Use Authorization, delineates specific guidelines for obtaining a permit for use of controlled substances (including Schedule 1 substances, such as cannabis) for research purposes (Wisconsin Legislature, 2015). In addition, synthetic THC, dronabinol (Marinol®), which is chemically indistinguishable from THC, extracted from the cannabis plant and, in an oral formulation, is currently available by prescription. Dronabinol is FDA approved for the treatment of chemotherapy-associated nausea/vomiting for patients who have failed to respond to conventional anti-emetics as well as AIDS-associated anorexia and wasting syndrome. Of note, as with other pharmaceuticals approved by the FDA, once approved for an indication, the medication is available for off-label prescription by a licensed provider and for research purposes for any number of other evidence-based indications.

Research into the effects of individual cannabinoids for specific indications and the optimal balance of different cannabinoid combinations (and there are thousands of possible permutations) is definitely warranted, but the composition and purity of these preparations must be well described so that studies can be replicated. Furthermore, exact dosing information for the primary cannabinoids [e.g. THC and cannabidiol (CBD)] is necessary and readers should be alerted to the fact that typical "recreational" and "medicinal" marijuana available at dispensaries in states where marijuana has been legalized vary substantially in their THC and CBD levels. Still, on average, they contain up to 10-times the dose of THC (10-15% or 10-15 mg) used in clinical trials (THC 1.3-5 mg), which may actually result in worsening of symptoms over time. Such refined medications are already in development and at least one, nabiximols (Sativex®) is currently in phase 3 clinical trials in the United States for use in multiple sclerosis to control spasticity (GW Pharmaceuticals, 2014) and for chronic, refractory pain in patients with cancer (GW Pharmaceuticals, 2012).

Appendix A details the extensive progress that has been made into understanding the complex physiological interactions of the endocannabinoid system in the body. Appendix B provides a thorough review of the current research into the potential therapeutic applications of cannabis and cannabinoids for treatment of specific diseases including: glaucoma, nausea, epilepsy, inflammation, chronic pain, spasticity in multiple sclerosis, AIDS-associated anorexia and wasting syndrome, and post-traumatic stress disorder (PTSD).

## Concerns Regarding Cannabinoids Use as Medicine

Cannabis and cannabis extracts produce the majority of their physiological effects as a result of their cannabinoid content, [some of the pesticide residue may also be contributing to some unwanted side effects (Wilkinson & D'Souza, 2014)], and it is for this reason that **pharmaceutical grade cannabinoids** are now in full production and development. Both cannabis/cannabis extracts and cannabinoid



pharmaceuticals produce significant physiological effects on the body, some potentially beneficial, but other less desirable effects are also common as is the case with any substance that is ingested.

Adverse effects associated with cannabis, cannabis extracts, and cannabinoid pharmaceuticals vary depending on a number of factors including: the exact cannabinoid composition/ purity of the substance or pharmaceutical in question; the dose of the active cannabinoid compounds in the preparation; genetic variability of the end-user; the age of first use of the end-user; and the duration and frequency of use.

As a general rule, smoked cannabis tends to have more adverse effects than vaporized cannabis and vaporized cannabis tends to have more adverse effects than pharmaceutical grade pure cannabinoid preparations which are usually administered via oral or sublingual routes in controlled doses. In addition, herbal cannabis and cannabis extracts tend to be less predictable with respect to their side effects than pharmaceutical grade cannabinoid products because their exact composition and likeness cannot be fully guaranteed prior to ingestion.

In essence, individuals who use smoked cannabis or cannabis extract for therapeutic purposes are receiving an unquantifiable amount of cannabinoids, typically in unknown proportions. As a result, it is quite difficult to study the effects of cannabis or cannabis extract because the exact composition of each “dose” cannot be known by the investigator or the patient. In contrast, pharmaceutical grade products, by their nature, have well-established chemical compositions with known purity levels at exact doses.

Pharmaceutical grade products are produced in highly reproducible dosages and purity, which allows their administration in very controlled and measurable quantities. It is for this reason that modern medicine has chosen to focus study on these “pure” chemicals rather than the uncertain herbal products that are sold in cannabis dispensaries that can vary in active cannabinoids from batch to batch, even within the same species of plant (Hemphill, Turner, & Mahlber, 1980; Mahlberg & Hemphill, 1983; Tipparat, Natakankitkul, Chamnivkaipong, & Chutiwat, 2011).

The following provides a detailed review of adverse effects associated with cannabis and cannabis extract. Detailed information on additional adverse effects (cardiovascular, pulmonary, renal, hepatobiliary and gastrointestinal, and violence potential) can be found in Appendix C.

**PSYCHIATRIC ADVERSE EFFECTS** - The use of cannabinoids at high doses (and with increasing frequency) or the use of high potency cannabinoids (such as the synthetic drugs K2 and Spice) is associated with a significantly increased risk of psychotic reactions and paranoia. While no study has been able to definitively identify a cause and effect relationship between cannabis use and psychotic reactions or schizophrenia, the relationship between the two demonstrates a strong positive correlation and meets most of the “criteria for causality” (Radhakrishnan, Wilkinson, & D'Souza, 2014). It is clear, therefore, that the use of cannabinoids, particularly those with higher potency (such as K2 and spice) or higher doses of lower potency cannabinoids (including THC) is associated with an increased risk of psychotic reactions (Volkow, Baler, Compton, & Weiss, 2014); and at least one study has demonstrated a shorter time to onset of schizophrenia (measured by first psychotic episode) in a cohort of patients with higher dose cannabis consumption of up to six years (Di Forte, et al., 2014).

In addition to psychotic reactions, the literature also describes a relationship between cannabis and anxiety/ panic disorder, particularly in naïve users (Volkow, Baler, Compton, & Weiss, 2014). It is not clear how common these types of reactions actually are and causality has not been established. However, at least one longitudinal study found that teen marijuana users were more likely than non-users to develop an anxiety disorder (Degenhardt et al., 2013). It is also clear that there is a significant positive



correlation between panic disorder/ anxiety and long-term cannabis use or cannabis use disorder (CUD) as described by a meta-analysis published in 2014 (Kedzior & Laeber, 2014).

Studies also suggest a high comorbidity between adolescent cannabis use and mood disorders, such as major depressive disorder (MDD) and bipolar disorder (BD). In fact, many longitudinal studies suggest that early cannabis use may predispose teenagers to subsequent anxiety and mood disorders in late adolescence and adulthood. For example, a large three year longitudinal study of adolescents and adults found that cannabis use at baseline predicted an increase in MDD and BD. Long-term use of cannabis has also been associated with the development of depression, primarily when use begins at a young age (Patton, et al., 2002; Chadwick, Miller, & Hurd, 2013). Therefore, converging lines of evidence suggest that chronic, regular use of recreational marijuana in youth is associated with increased risk for psychotic episodes, increased severity of psychotic disorders, and increased risk for anxiety and mood disorders.

**MOTOR VEHICLE ACCIDENTS (DRUGGED DRIVING)** - Given the widespread distribution of cannabinoid receptors throughout the brain and body, it is not surprising that cannabis and cannabinoids have acute effects on neurocognitive and physiological function. With acute ingestion, cannabis and THC produce dose-dependent impaired motor coordination, decreases in reflex time, impaired attention, and impaired tracking ability (Ramaekers, Berghaus, van Laar, & OH., 2004; Solowij, 1998). As a result of the impaired motor coordination, investigations have demonstrated an increased risk of motor vehicle accidents. In Colorado, where marijuana was legalized in 2014, the number of motor vehicle accidents in which marijuana use is implicated increased by 100% at the same time that motor vehicle accidents due to alcohol decreased (Salomonsen-Sautel, Min, Sakai, Thurstone, & Hopfer, 2014).

As a result of this data, drugged driving laws have begun to be enacted in a number of states, though uncertainty remains regarding at what level of THC a driver should be considered intoxicated. In Colorado, the current level deemed to be legal proof of intoxication is a blood level of 5 ng per milliliter, which is at the higher end of the levels deemed to produce substantial driving impairment (Hartman & Huestis, 2013).

Another vexing issue regarding regulation of drugged driving is the fact that the metabolism of cannabis is not as straight forward as it is for alcohol. Because cannabis is stored in fat cells, an individual may have detectable levels of THC in their urine for up to two weeks (particularly with chronic use) even if s/he has not used cannabis products in the past week. As a result, patients who test positive on a urine test for THC (at any level) may not have ingested it recently, and the effects of long-term use on driving ability are less clear due to the development of some tolerance.

New methods are currently under development to be able to distinguish acute ingestion from chronic use using saliva samples but these methods are not yet available for widespread use and have not been adequately validated for use as a “drugged driving” test in the same way that we currently utilize a breathalyzer for alcohol intoxication (Lee, et al., 2013). It is for this reason, that in states where cannabis is now legal, it has been challenging to mitigate the effects of drugged driving. It is also not clear whether there is a differential effect on younger drivers than on more experienced drivers. Further research into the public health risks of cannabis drugged driving is necessary before widespread legalization ensues.

**NEUROPSYCHOLOGICAL DECLINE** - The effects of chronic marijuana use appear to depend on quantity (dose), frequency, duration, and age-of-onset of cannabis use. Importantly, studies show that earlier age of regular cannabis use onset (CUO) is associated with more severe cognitive consequences; for example, individuals with an adolescent CUO (before age 15-18 depending on the study) were more likely to demonstrate cognitive problems, including lowered IQ, poorer attention, verbal memory, visual search, verbal fluency, and executive function and greater abnormalities in brain function and structure.



This is thought to be due to disruption of healthy neurodevelopment of gray and white matter, which continues into the mid-20's. For example, one recent longitudinal study following youth from age 13 to 38 found that use of cannabis on a regular basis before the age of 18 predicted significant long-term cognitive deficits that do not appear to completely reverse even when use stops in adulthood (Meier, et al., 2012). These changes included a significant decline in IQ, as well as reductions in the domains of executive function, memory, and processing speed (Meier, et al., 2012).

Cross-sectional studies in adolescent and emerging adult cannabis users (ages 15-25) have demonstrated cognitive deficits (generally small to medium in size) in complex attention, verbal memory, working memory, processing speed, and executive functioning compared to healthy non-using youth. With few exceptions, studies have reported brain structural abnormalities in regular cannabis-using youth in areas that underlie executive function, memory, emotional control, reward processing, and psychomotor speed. For example, in a recent study published in *The Journal of Neuroscience*, regular cannabis use in young adults was quantitatively associated with abnormalities in the brain. Specifically, in structures (nucleus accumbens and amygdala) involved in the development of addiction as well as areas integral in decision making, emotional regulation, and executive functioning (Gilman, et al., 2014).

Other studies have also shown that cannabis use may affect the integrity of the white matter fiber tracts in the prefrontal region of the brain (the white matter is where the nervous system houses the “wires” that connect one nerve cell to others and allows them to communicate), (Gruber & Yergelun-Todd, 2005). One study found reduced white matter quality in areas that connect the prefrontal cortex to the limbic regions, and this reduced white matter integrity was linked with increased depressive and apathy symptoms in young adult marijuana users (Shollenbarger et al., 2015). These neuroanatomical and neurocognitive abnormalities may account to some extent to study findings that link heavy marijuana use with lower income, greater need for socioeconomic assistance, unemployment, and lower satisfaction with life (Fergusson & Boden, 2008; Brook, Lee, Finch, Seltzer, & Brook, 2013). These studies also highlight the critical need to prevent regular marijuana exposure (especially high potency THC) in adolescents and young adults (ages 13-25).

**ADDICTION POTENTIAL** - The risk of addiction to cannabis depends on the same factors as the effects on neurocognitive side effects and includes quantity (dose), frequency, duration, age-of-onset of cannabis use, but also relies on host genetic factors that include susceptibility to addiction (e.g. family history of substance use). Despite a widespread belief by the public that cannabis is not addictive, scientific data clearly demonstrates that 9% of the general population will develop addiction to cannabis (Volkow, Baler, Compton, & Weiss, 2014). The risk of addiction is greatest for individuals who first use cannabis as teenagers (up to 16%) and for those individuals who use marijuana on a daily basis (as high as 50%), (Hall & Degenhardt, 2009). Investigators have even described a very distinct cannabis withdrawal syndrome, lending further support to the development of physical dependence, one of the diagnostic criteria for substance use disorders (Gorelick D. , et al., 2012). Withdrawal can make it difficult for an individual using cannabis to cease use. Data also point to an up to four-fold increase in symptoms of cannabis dependence within two years in individuals who begin use of cannabis in adolescence (Chen, Storr, & Anthony, 2009).

**CANNABIS WITHDRAWAL SYNDROME** - As noted previously, chronic, daily cannabis use creates neurophysiological dependence to exogenous cannabinoids. As a result of this physical dependence, individuals who are physically dependent on cannabis will experience unpleasant symptoms with discontinuation – symptoms that have been described in the past 10 years as the Cannabis Withdrawal Syndrome (CWS), (Gorelick, Levin, Copersino, & al, 2012; Gorelick D., et al., 2012). The most common symptoms of CWS include irritability, anger, or aggression; nervousness or anxiety; insomnia; decreased appetite or weight loss; restlessness; depressed mood; and physical symptoms causing significant



discomfort (stomach pains, shakiness/tremors, sweating, fevers, chills, or headache). In a study in 2011, investigators validated symptoms to develop a cannabis withdrawal scale for use in clinical practice (Allsop, Norberg, Copeland, Fu, & Budney, 2011). Unlike alcohol or sedative withdrawal, cannabis withdrawal is not fatal, but if not identified and treated early, it will lead to relapse in a large proportion of dependent cannabis users. As a result, in recent years, a number of studies have been (and continue to be) performed to discover safe and effective treatment options for CWS.

To date, the most effective treatments for CWS include gabapentin, an anti-epileptic drug, and dronabinol, (synthetic THC), (Mason, et al., 2012; Vandrey, et al., 2013; Levin, et al., 2011). Further research is necessary to determine if other medications are effective at reducing the signs and symptoms of cannabis withdrawal and to what extent these early interventions also assist with maintenance of sobriety from cannabis long-term.

## Opportunities for Future Research

### Optimal Route of Administration

Cannabinoids can be introduced into the body via a number of different routes. From the standpoint of recreational use, however, the most common methods of administration include smoked and vaporized cannabis. Given that smoked cannabis has the potential to produce significant additional risks to an individual's health including an increased risk of lung cancer, cardiovascular disease, chronic lung inflammation; and immunological changes in the lungs that predispose a user to develop pneumonia; **it is clear from the research that smoking cannabis is not the optimal route of administration to achieve the beneficial effects of cannabinoids with the least amount of risk.**

Oral cannabinoid preparations appear to be safe and effective, though the optimal dose and composition of these products still needs to be determined through clinical research. Sublingual administration appears to be well tolerated and safe though only a single formulation is currently available for use through this route of administration (Sativex®). Additional research into the safety and efficacy of vaporized cannabinoid preparations (including specific vaporizers), oral preparations, additional sublingual preparations, and possible transdermal preparations needs to be undertaken.

### Appropriate Cannabinoid Doses for Specific Indications

As noted in the previous sections, cannabinoids have therapeutic potential but also carry a risk of adverse effects, all of which appear to increase in a dose-dependent fashion (Di Forte, et al., 2014; Ramaekers, Berghaus, van Laar, & OH., 2004). **Recent evidence from different trials suggests that the beneficial effects of cannabinoids may occur at lower doses, thus sparing individuals the adverse effects associated with higher doses** (Wilsey, et al., 2013; Roitman, Mechoulam, Cooper-Kazaz, & Shalev, 2014; Blake, Robson, Ho, Jubb, & McCabe, 2006; Cooper, Comer, & Haney, 2013). Even so, the optimal dose for treatment of specific conditions has not clearly been defined and will likely depend on the cannabinoid pharmaceutical being investigated. As the data regarding synthetic cannabinoids, which are as much as 200 times more potent than THC, is now beginning to reveal, **more is not necessarily better with cannabinoid pharmaceuticals.**

### Appropriate Ratio of THC/CBD for Extract Preparations for Specific Indications

In addition to dose, the composition of cannabinoids in a specific cannabinoid preparation must also be clearly described and understood, both in terms of efficacy and adverse effects. For example, investigators have described an “entourage effect” whereby the interaction of different cannabinoid molecules produces a more robust effect with lower side effects than an individual cannabinoid pharmaceutical would on its own (Russo, 2011). At this point, however, the only study that has



specifically tested this hypothesis has not demonstrated a benefit to whole marijuana over dronabinol (synthetic THC) for relief of experimental pain (Cooper, Comer, & Haney, 2013). It is clear, however, that CBD and THC differentially impact psychopathology symptoms and affective processing. CBD modulates the neuropsychiatric effects of THC and may allow for higher dosing of THC in combination than would be tolerated without the addition of CBD. **The exact ratio of THC: CBD for specific diseases, however, has not been clearly elucidated and the only standardized pharmaceutical containing a mixture of both cannabinoids is only available in a very stable 1:1 ratio (Sativex®) (Potter, 2014).**

It will be important to differentiate between high-THC containing cannabis and low-THC containing cannabis with respect to toxicity and adverse effects. Recent studies that demonstrate clear benefit from low concentrations of THC are in stark contrast to the ever-increasing concentrations of THC in currently available cannabis subspecies available in cannabis dispensaries in states where cannabis has been legalized (Wilsey, et al., 2013; Roitman, Mechoulam, Cooper-Kazaz, & Shalev, 2014). In addition, while levels of THC are rising, levels of CBD, which has emerged as a potentially neuroprotective, anti-psychotic and anti-anxiety agent, have remained low, between 0-1%. This is important because studies show that the dose and ratios of THC and CBD in marijuana predict neurocognition and risk for psychiatric disorders and psychiatric symptoms.

It will be important for policy makers to consider regulation of THC and/or CBD content of herbal cannabis rather than to regulate the plant itself. Given that the adverse effects of cannabinoids appear to be dose-dependent, regulating the concentration of these chemicals in cannabis only seems logical. Again, further research is necessary to determine what the ideal THC: CBD ratio is for both medicinal purposes, and to reduce the potential public health impact of legal marijuana.

#### **Age-Related Concerns (Effects on Neurocognitive Development)**

**As is the case with most chemicals that produce neuropsychiatric effects, including tobacco products and alcohol, the adverse effects of cannabinoids on the developing brain of children and adolescents has now been well described in numerous studies (Brook, Lee, Finch, Seltzer, & Brook, 2013; Chadwick, Miller, & Hurd, 2013; Fergusson & Boden, 2008; Carroll, 2015).** These chemicals produce a differential side effect profile depending on age of first use with younger individuals at higher risk to develop worse and more permanent adverse effects. **The adverse effects of cannabinoids in children, adolescents, and young adults is now well described and includes neuropsychological decline, (Meier, et al., 2012) an increased incidence of addiction to cannabinoid pharmaceuticals, and an increased risk of psychiatric disorders (including psychotic disorders and depression) (Chadwick, Miller, & Hurd, 2013; Patton, et al., 2002).** As a result, and similar to alcohol and tobacco products, cannabis and cannabinoids should not be permitted to be marketed, sold, or used by individuals younger than 21 years of age except as approved for use for specific indications by the Food and Drug Administration (FDA) after rigorous investigation through the FDA drug approval process and the long-term effects of in-utero exposure to cannabinoids still require significant investigative efforts.

### **Cannabinoid Research Recommendations**

**Recommendation 1: Cannabis, cannabinoid pharmaceuticals and cannabis/cannabinoid delivery systems should be subject to the same rigorous standards for approval that are applicable to other prescription medications and medical devices and should not be available for use by patients until such a time as they have been approved by the Food and Drug Administration (FDA).**



**Recommendation 2: The State and Federal government should encourage and promote further research and development focused on the study of specific pharmaceutical grade cannabinoid compounds and preparations (including whole plant preparations) for various clinical applications.**

After clinical trial studies are conducted to determine the benefits and long-term side effects of marijuana use on health, laws should only be considered that:

- Are limited in scope to individuals with identified conditions shown through research to benefit from the medicinal properties of marijuana plant extracts.
- Provide clear guidelines for dosing amounts.
- Provide consistent quality control testing of the cannabinoid dosing and additives.
- Identify restrictions on packaging and distribution that are equivalent to any other prescribed medication.

**Recommendation 3: Smoked cannabis is not a safe delivery system for cannabinoids, and should not be legalized in any form since it appears to have similar clinical efficacy via inhalation (vaporized route), sublingual, and oral routes which are safer, and that may have decreased abuse potential.**

**Recommendation 4: Non-pharmaceutical grade oral formulations (“edibles”) and oral formulations are not approved by the FDA and should not be permitted. There is significant variability in dosing between samples, inconsistent distribution of cannabinoids and there are current FDA approved oral cannabinoids by prescription, in the form of Dronabinol (Marinol®) and Nabilone (Cesamet®).**

**Recommendation 5: Cannabis and cannabis extract(s) for use in individuals younger than age 21 should not be legalized in any form unless specifically FDA approved. A growing body of evidence links early cannabis exposure with neurobiological brain abnormalities, an increased risk of addiction, potential to be a gateway drug leading to other drug abuse, permanent neurocognitive decline, lower school performance and compromised lifetime achievement.**

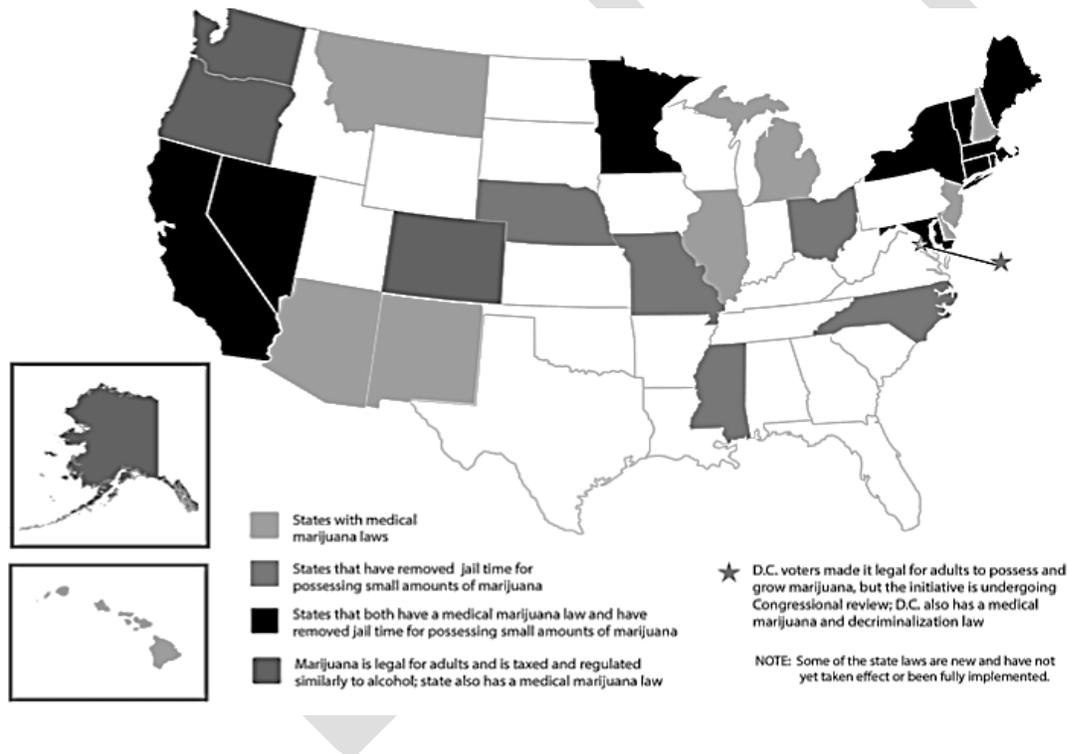


## Legalities and Regulations

### Introduction

Cannabis remains the most commonly used illicit drug today, particularly among youth (Substance Abuse and Mental Health Services Administration (SAMHSA), 2014). As of 2015, roughly 23 states and the District of Columbia passed laws allowing the use of medical marijuana. Four states, Colorado, Washington, Alaska and Oregon have also legalized marijuana use by individuals 21 and older (MPP, 2015; see Figure 1). Historical drug policy perspectives suggest that as pro-marijuana legislation shifts occur, use in youth may also increase (Joffe & Yancy, 2004). Examining the impact of policy on cannabis use in adolescents and emerging adults remains a crucial focus in public health research today. The mean age of initiated cannabis use in 2013 was approximately 18 years old (SAMHSA, 2014) and younger initiates may be more likely to use other illicit drugs (Haug et al., 2014) and suffer greater neurocognitive consequences (Lisdahl et al., 2013).

**Figure 1: US Marijuana Policy Map, 2015 (Adapted from Marijuana Policy Project)**



This section describes three primary policy categories addressing personal use of marijuana: prohibition, legalization and decriminalization and summarizes available research on the impact of these policies on important public health outcomes. Recommendations are provided from a *public health perspective* which legislators are urged to consider when reviewing marijuana policy in Wisconsin.

### Prohibition

**Definition:** Prohibition legally restricts the manufacturing/cultivation, sale, and possession of marijuana. Prohibition laws vary by state.



**Current Marijuana Laws in Wisconsin:**

**Possession:** First offense possession of any amount of marijuana is a misdemeanor punishable by a fine of up to \$1,000 and/or imprisonment of up to 6 months. For subsequent offenses possession of any amount of marijuana is a class I felony and is punishable by a fine of up to \$10,000 and/or imprisonment for up to 3.5 years. (Wisconsin Stat. § 939.50(3)(i), Wisconsin Stat. § 961.14(3g)(em)). Wisconsin Stat. § 961.475 - Treatment option: Whenever any person pleads guilty to or is found guilty of possession or attempted possession of a controlled substance or controlled substance analog under § 961.41 (3g), the court may, upon request of the person and with the consent of a treatment facility with special inpatient or outpatient programs for the treatment of drug dependent persons, allow the person to enter the treatment programs voluntarily for purposes of treatment and rehabilitation. Treatment shall be for the period the treatment facility feels is necessary and required, but shall not exceed the maximum sentence allowable unless the person consents to the continued treatment. At the end of the necessary and required treatment, with the consent of the court, the person may be released from sentence. If treatment efforts are ineffective or the person ceases to cooperate with treatment rehabilitation efforts, the person may be remanded to the court for completion of sentencing. (<https://docs.legis.wisconsin.gov/statutes/statutes/961/1V/475>)

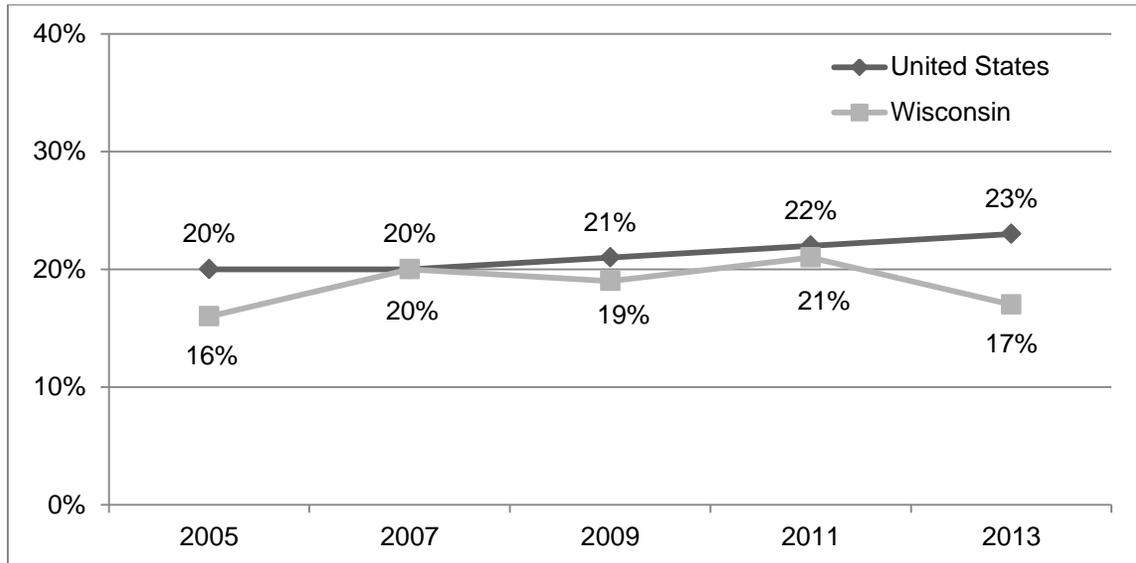
**Sale/Delivery/Cultivation:** Under Wisconsin law possession with the intent to distribute is the same as distribution. Distribution of 200 grams or less of marijuana is a class I felony and is punishable by a fine of up to \$10,000 and/or imprisonment for up to 3.5 years. Distribution of 200-1,000 grams of marijuana or cultivation of 4-20 plants is a class H felony and is punishable by a fine up to \$10,000 and/or up to 6 years of imprisonment. Distribution of 1,000-2,500 grams of marijuana or cultivation of 20-50 plants is a class G felony and is punishable by a fine up to \$25,000 and/or up to 10 years of imprisonment. Distribution of 2,500-10,000 grams of marijuana or cultivation of 50-200 plants is a class F felony and is punishable by a fine up to \$25,000 and/or up to 12.5 years of imprisonment. Distribution of over 10,000 grams of marijuana or cultivation of over 200 plants is a class E felony and is punishable by a fine up to \$50,000 and/or up to 15 years of imprisonment. (Wisconsin Stat. § 961.14(1)(h), Wisconsin Stat. § 939.50(3)(e-i)). Subsequent offenders are subject to increased penalties ranging from up to 7.5 years of imprisonment for class I felony to up to 19 years of imprisonment for a class E felony (Wisconsin Stat. § 961.48).

Current Wisconsin state marijuana policy is considered prohibition. For example, the first offense of possession of marijuana (any amount) is a misdemeanor punishable by a fine up to \$1,000 or imprisonment of up to 6 months. Subsequent offenses are considered a felony (see box to the left for more details). However, some municipalities have passed ordinances that provide alternative consequences. For example, in 1997, the City of Milwaukee passed an ordinance that allows first-time offenders that possess 25 grams of marijuana or less to receive the equivalent of a municipal ticket. For second and subsequent offenses involving 25 grams or less, they are charged with a criminal offense under state law (misdemeanor or felony depending on previous record) (Public Policy Forum, 2015).

**Current Youth Use Rates:** Current (past 30 day) use of marijuana in Wisconsin youth (17%) continues to be lower than or similar to national rates (23%) (WDHS, 2014; see Figure 2). Nationwide, daily use of marijuana in adolescents increased during the mid to late 90’s, stabilized, then climbed again from 2009-2011 and have been relatively stable since then (Johnson et al., 2015). Youth perceptions of risk have been decreasing since 1990, reaching levels measured in the 70’s (Johnson et al., 2015). However, as discussed in the sections below, additional research is needed to differentiate how specific policies (e.g., prohibition, legalization, and decriminalization of marijuana) impact youth rates.



**Figure 2: Current Marijuana Use among High School Students in Wisconsin vs. the United States, 2005-2013 (adapted from the WI DHS, 2014)**



**Wisconsin Rates of Incarceration for Marijuana (THC) Possession**

Currently, there is broad discretion within the justice system at all levels to enforce possession of marijuana offenses. For example, in Wisconsin the first offense of possession of marijuana (any amount) is a misdemeanor punishable by a fine up to \$1,000 or imprisonment of up to 6 months. Subsequent possession offenses see an increase in potential fines of up to \$10,000 and/or imprisonment for up to 3.5 years. Sentencing is discretionary for possession and covers a wide range of punishments for the same offense making current, accurate data on incarceration for possession of marijuana offenses in Wisconsin difficult to obtain. Therefore, a more detailed and accurate tracking system to properly codify criminal and civil legal consequences for possession of marijuana (and all drugs) within the Consolidated Court Automation Programs (CCAP) database is needed. Specifically, CCAP should include a comparison of the time sentenced to the actual amount of time served in jail.

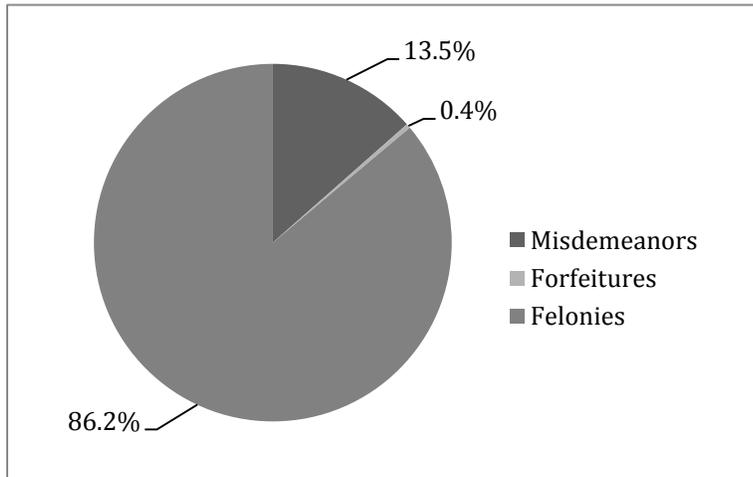
Despite these limitations, for the current report, the Committee conducted a preliminary review of the CCAP data for calendar year 2013, which revealed that 6,715 people were charged with possession of THC (marijuana) in Wisconsin. Of those, 1,406 were sentenced to jail (23%). However, a closer review of the data revealed 46% of those sentences were either imposed and stayed, or mediated through some other form of judicial discretion that did not involve confinement in jail. Further, in 2013, 4,394 cases were entered in CCAP in which possession of THC was either the only, or the most serious, charge. Of those, 999 (22%) were sentenced to jail. Of those, 41% were either imposed and stayed or mediated through some other form of judicial discretion that did not involve confinement in jail. In either case, if an initial jail sentence was issued, the average sentence was 71 days. Individuals with little or no previous criminal history were rarely sentenced to jail for first possession of marijuana.

Recently, the Public Policy Forum (2015) closely examined convictions and sentencing in Milwaukee County from 2012-2015. Their analysis revealed that in Milwaukee, the impact of current marijuana policy might primarily impact repeated offenders. For example, between the years of 2012-2015 of the 4,554 total marijuana possession cases where the defendant was found guilty, only 11 individuals received a jail sentence; among those, only 8 served any jail time (Public Policy Forum, 2015). Of note for future policy-makers, the majority of those who received fines did not pay them (14% made partial payments, 28% paid in full, and 58% made no payments), possibly suggesting fines represent too great of an economic burden. In contrast, 86% of second and subsequent marijuana only possession offenses resulted in a felony charge (Public Policy Forum, 2015) (see Figure 3). The majority of these felony convictions



resulted in jail time (265 of 275 defendants, with 9 additional individuals sentenced to time in the WI state prison) (Public Policy Forum, 2015). Therefore, second and subsequent offenses are costly and typically result in jail-time, at least in Milwaukee County.

**Figure 3: Second Offense Marijuana Possession Charges, Milwaukee County, 2012-2015 (Public Policy Forum, 2015)**



**Racial Disparities**

The range of penalties and discretionary sentencing currently allowed under Wisconsin law may contribute to racial and socioeconomic disparities. Indeed, one major criticism of prohibition is it has disproportionately impacted ethnic minorities, especially African American males (Golub et al., 2007; ACLU, 2013; Pawasarat & Quinn, 2013). In Wisconsin, African Americans were 5.98 times more likely than Caucasians to be arrested for marijuana possession; the disparity was highest in Brown (7.6x) and Rock counties (6.6x) (ACLU, 2013). Wisconsin demonstrates the fifth highest racial disparity in marijuana arrests in the country and this disparity has increased 153% during the years 2001-2010 (ACLU, 2013). In Milwaukee, African Americans make up 26% of the population and account for 86% of all those found guilty of a second or subsequent marijuana possession offense in 2013-2014 (Public Policy Forum, 2015).

The Wisconsin Youth Risk Behavior Surveillance System (WI YRBS) found that marijuana continues to be the illicit drug most frequently used by high school students. Among high school students, current marijuana use was highest among African American, American Indian and multiracial students. In 2011 and 2013, African American teens were twice as likely to use marijuana in high school compared to Caucasians (34% vs. 17%) in Wisconsin (WI DHS, 2014). Teen use rates have not been correlated with nor do they explain the racial disparity in arrest and sentencing rates in Wisconsin. However, teen usage rates clearly demonstrate the need for culturally competent prevention and intervention efforts that recognize and address the higher usage rates by youth of color in Wisconsin.

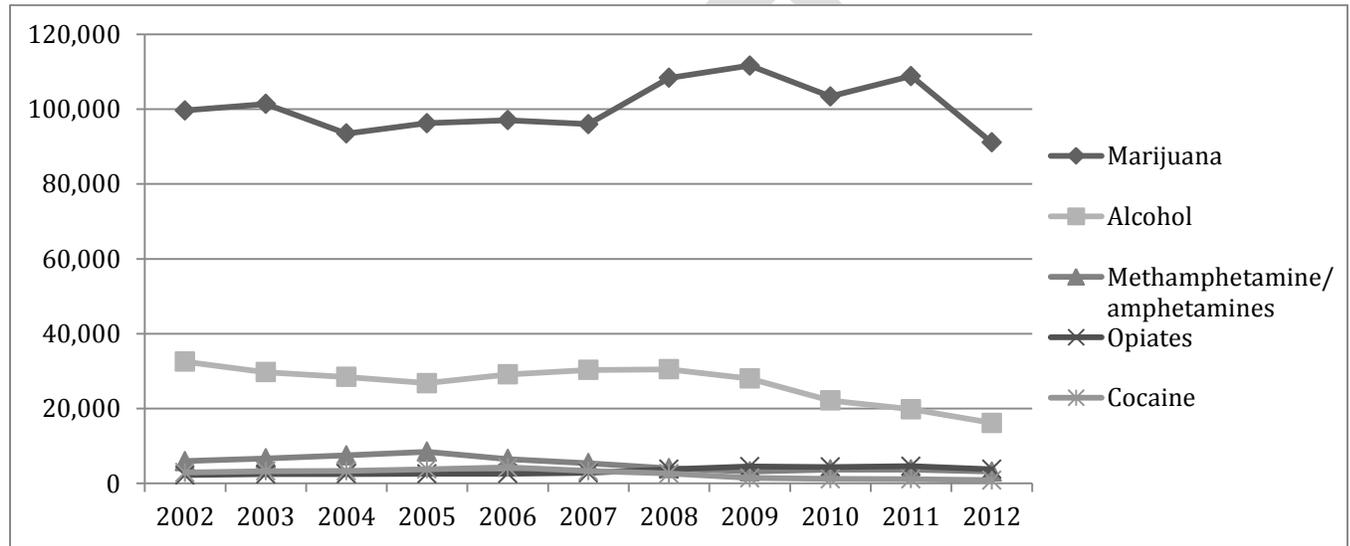
**Incarceration Effects:** A drug charge on your record can impact eligibility for public housing, student financial aid, employment opportunities, child custody determinations, professional license eligibility, federal grants, and immigration status. Further, research has revealed numerous negative effects of incarceration on both individuals and families, including health decline, poverty, unemployment, poor child adjustment, and damaged family relationships (e.g., Arditti, 2012; Geller et al., 2008; Murray & Farrington, 2008; McLoyd, 1998; Phillips et al., 2006). Parental incarceration is often considered an *adverse*



childhood experience (see Appendix E) that can cause repeated stressors and increased childhood trauma symptoms (Nagin & Snodgrass, 2013).

**Treatment Admissions through the Criminal Justice System.** Although specific data in Wisconsin was not determined, national trends demonstrate that the most prevalent, primary drug of choice for adolescents admitted to treatment is marijuana (SAMSHA TEDS, 2013; Figure 4). One argument for prohibition is involvement in the criminal justice system can be a pathway into treatment for those who refuse voluntary admission. If marijuana policy is reformed in Wisconsin, the current methods for accessing substance use treatment services through the criminal justice system needs to be replaced with one that will screen youth and adults for cannabis use disorders and refer them to appropriate levels of treatment.

**Figure 4: National admissions aged 12 to 17, by primary substance of abuse, 2002-2012 (number)**



### Drug and Diversion Courts

In 2005, Wisconsin passed Act 25, which grants counties the ability “to establish and operate programs, including suspended and deferred prosecution programs and programs based on principles of restorative justice, that provide alternatives to prosecution and incarceration for criminal offenders who abuse alcohol or other drugs.” This led to the creation of the Treatment Alternatives and Diversion (TAD) Program, whose goal is to “...promote public safety, reduce prison and jail populations, reduce prosecution and incarceration costs, reduce recidivism, and improve the welfare of participants’ families...”. There are seven TAD project sites across Wisconsin (including Burnett, Washburn, Rock, Wood, Dane, Milwaukee and Washington counties) that utilize Drug Court, diversion, bail diversion, and pre-trial diversion programs. Each model includes case management, substance abuse treatment, drug testing and monitoring, but there is variation in the program models across sites.

Analysis of the TAD programs in 2011 (Van Stelle, KT, Goodrich, J., & Paltzer, J, 2011) revealed that between 2007-2010, 2,061 individuals were admitted to TAD (half were between the ages of 17-25). The majority of the TAD admissions were white (57%), followed by African-American (35%). Nearly half (42%) had marijuana as their drug of choice, followed by alcohol (26%). Thirty-seven percent of admitted individuals met criteria for cannabis dependence.

Arrests, sentencing, and incarceration cause an economic burden to the state. According to the Vera Institute of Justice (2012), estimated state incarceration costs are \$104/day. This can rapidly add up to

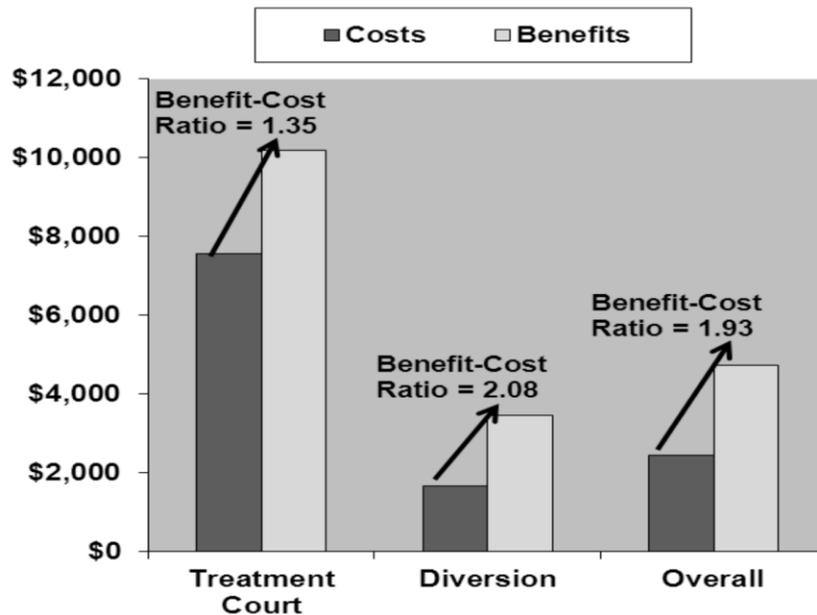


burdensome criminal justice expenditures. Indeed, the ACLU (2013) estimated that Wisconsin spent \$44,366,056 enforcing marijuana possession laws in 2010.

Outcomes of the TAD program were largely positive. Of those admitted to a TAD project during this period, 64% successfully completed the program. TAD completers (35%) were more likely than terminators (10%) to obtain employment while in TAD. Completers of a TAD program were also significantly more likely than terminators to have their charges dismissed (47 vs. 1%) or reduced (40 vs. 1%), or to complete TAD treatment as an alternative to revocation or probation/parole supervision (6 vs. 1%). Across sites, an estimated 86,530 jail days and 45,588 prison days were averted through TAD as of December 2010 (1,853 individuals).

Further, TAD programs reduced recidivism, with 19% of graduates compared to 33% of terminators being convicted of a new offense. Cost-benefits analysis revealed that for every \$1 invested in TAD yields benefits of \$1.93 to the criminal justice system through averted incarceration and reduced crime; TAD treatment courts yield benefits of \$1.35 for every \$1.00 invested; TAD diversion projects yield benefits of \$2.08 for every \$1.00 invested (Van Stelle, et al., 2011, pg. 39; see Figure 5). It is notable that these cost-savings do not include additional benefits of mental health treatment, improvements in housing, employment, or cost-savings for families that avoided incarceration. **A monte-carlo statistical simulation revealed that TAD programs will result in taxpayer cost savings 78% of the time.** In conclusion, TAD programs provide an excellent alternative for drug charges in Wisconsin, reducing recidivism, costs, increasing employment and job training, and improving access to drug, alcohol and mental health treatment. It is recommended that these programs are maintained and expanded throughout the state for our medium to high-risk offenders.

Figure 5: Cost-benefit analysis of TAD programs (from Van Stelle et al., 2011)





### **Legalization of Cannabinoids for Medicinal Purposes:**

Please see **Cannabinoid Research** section for thorough discussion regarding “medical marijuana” considerations.

### **Marijuana Legalization:**

**Definition:** Legalization for the growing, distribution, sale, and possession of marijuana (with some limitations in amounts) for personal use.

**Impact on Youth Use.** To date, only Uruguay has legalized marijuana for consumption and sale, and it is too soon to know the impact of that policy shift. In the Netherlands, marijuana can be bought in cannabis shops, which are subject to strict rules. One study to date found that youth that lived within close proximity (20 km) to a cannabis shop had significantly earlier age of marijuana use onset (Palali & Van Ours, 2014), which is associated with greater risk for dependence and neurocognitive deficits (see Lisdahl et al., 2014 for review).

Of concern, in a study of 3,829 high school seniors throughout the United States, 10% of non-cannabis using students reported they intended to initiate use of marijuana if it becomes legal in their state. Further, 18% of lifetime users reported they would plan on increasing their use if marijuana was legal (Palamar et al., 2014). **The authors of the study concluded that “prevalence of cannabis use is expected to increase if cannabis is legal to use and legally available” (Palamar et al., 2014).**

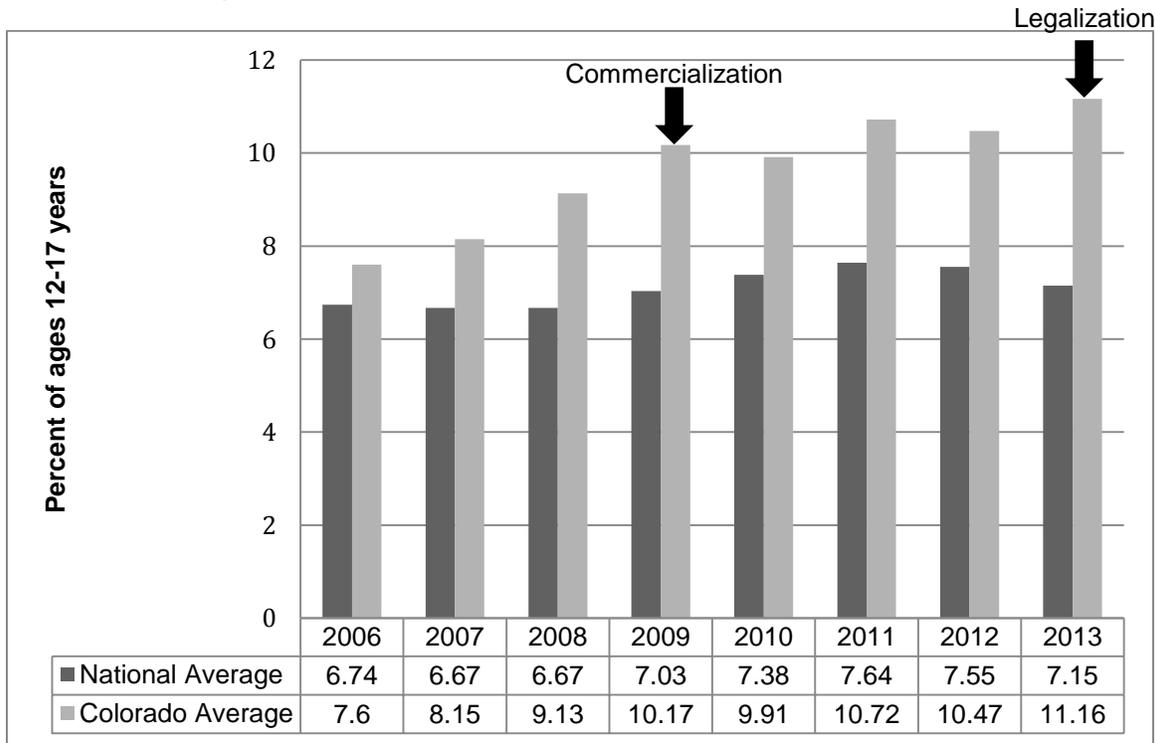
Others have warned that legalization could result in decreased prices (Kilmer 2014; Pacula et al., 2001; Williams, 2003), increased availability, reductions in perceived harm, and increased marketing aimed at youth (see Joffe & Yancy, 2004). For example, adolescents who report that marijuana is easy to obtain are 2.5 times more likely to use than those who report marijuana difficult to obtain (Kandel et al., 2001). Some argue marijuana is relatively safer than alcohol, and legalization would result in less alcohol use in youth. However, studies that incorporate the price of marijuana into models demonstrate that adolescents are more likely to increase both marijuana and alcohol use, and that these two drugs are economic complements (Hall & Pacula, 2003). Consistent with this theory, Colorado had a 4% increase in alcohol sales from 2012-2014 following marijuana legalization (Rocky Mountain High Intensity Drug Trafficking Area (RMHIDTA), 2015).

Amendment 64 passed in Colorado in 2012, allowing use of marijuana for individuals 21 years of age or older. Colorado has been faced with numerous challenges following legalization, such as: regulatory concerns, addressing opposing federal laws, state law enforcement changes, defining public use, handling driving under the influence, regulating civilian growers, earmarking tax revenue toward local government establishments, and prevention efforts for those under age (Blake & Finlaw, 2014). While reasons for pro-legalization laws include protecting citizen rights, profit from taxing the product, and reducing black market distribution (Richter & Levy, 2014), legalization has had unintended consequences on the public’s health. For example, the same year it legalized marijuana, high school seniors began to report significant reductions in perceived harmfulness of regular cannabis use (Johnston et al., 2014b). (Please note that the MTF data collects limited statewide data; the full-impact of marijuana legalization on youth usage will not be available until 2016). In a 2015 report, Colorado teen use (12-17 year olds) was reportedly third in the nation (56% higher than the national average), and use rose 6.6% from 2013-2014 (RMHIDTA, 2015) (Figure 6). Further, the total number of suspensions almost doubled following both medical and recreational legalization between 2004-2014 (from 3.2% to 6.4% respectively) (RMHIDTA,



2015). Colorado ranks 2<sup>nd</sup> in use rates in young adults (18-25), with 29.1 % of Colorado young adults using in the past month compared to the National average (18.9%) (SAMHSA, 2014). Some experts argue that these high rates have been established years ago and are not directly due to legalization; however, the full impact of this policy shift may not be available for a couple of years.

**Figure 6: Youth past month marijuana use in Colorado compared to the national average (adapted from RMHIDTA, 2015)**



From a public health perspective, even a small increase in adolescent marijuana use would result in a significant rise in new users [e.g., if an additional 1% of 15-19 year olds in the United States initiated marijuana use, there would be 190,000 new users (Joffe & Yancy, 2004)], 17% of whom (32,300) would be at risk for developing a cannabis use disorder. Therefore, we need to closely examine the impact of this legalization on public health costs and youth substance use.

**Marijuana-Related Injuries.** Three other areas of concern with legalization have been increased Emergency Room visits, especially pediatric admissions (RMHIDTA, 2015; Onders et al., in press), injuries caused by THC extraction lab explosions (RMHIDTA, 2015), and increased proportion of drivers in a fatal motor vehicle crashes who were marijuana positive (Salomonsen-Sautel, 2014). For example, Onders et. al (2015) found a 147.5% increase in marijuana exposure in children younger than 6 years old. In Colorado, the number of marijuana-related exposures rose from 4 per year in 2006-2008 to 38 in 2014 and calls to the Rocky Mountain Poison and Drug Center in 2014 increased 70% from 2013 (RMHIDTA, 2015). Assessment also found a 400% increase in THC infused edible exposures from 2013-2014 (RMHIDTA, 2015). In Colorado from 2013-2014, there were 48 injuries reported due to explosions in labs created to extract THC (RMHIDTA, 2015). In Denver, there was a 100% increase in driving under the influence of drugs (DUIDs) involving marijuana (RMHIDTA, 2015). The data provided does not include what percentage of these DUIDs exclusively involved marijuana or were in combination with alcohol.



**Important considerations for policy-makers are to invest early in prevention, enforcement of drugged driving laws, marijuana research, and treatment with the goal of reducing the public health burden of marijuana in Wisconsin.** This also includes reducing risk factors for addiction, such as investing in poverty reduction, job training and education. Investment in research to examine how future policy changes impact youth and adult use, drugged driving, addiction rates, and treatment utilization will be critical. Finally, prior to considering marijuana legalization, it is recommended that the state of Wisconsin commission an independent policy group of experts to research the economic and public health impacts related to marijuana prevention, addiction, mental health, economics, environment/agriculture, toxicology, and business impacts.

In conclusion, the Committee agrees with the following statement: **“Colorado and Washington serve as experimental labs for the nation to determine the impact of legalizing marijuana. This is an important opportunity to gather and examine meaningful data and facts. Citizens and policymakers may want to delay any decisions on this important issue until there is sufficient and accurate data to make an informed decision.” (RMHIDTA)**

**Depenalization:**

**Definition:** Depenalization is the removal of all criminal and civil penalties for marijuana use and possession. Under depenalization, there are no arrests, tickets, or other consequences as long as the possession complied with the existing regulation.

**Decriminalization:**

**Definition:** Decriminalization replaces all criminal penalties for marijuana possession with civil penalties; policies greatly vary across states (Pacula et al., 2014).

In most cases, decriminalization makes possession of small amounts of marijuana a civil infraction with monetary fines placed on the individual (i.e. a ticket). In Massachusetts, adult possession of an ounce or less of marijuana for personal use carries a maximum civil penalty of \$100 fine and forfeiture of the marijuana. Further, they require anyone under the age of 18 complete a drug awareness program. In some states only the first offense is decriminalized - repeated offenses remain misdemeanor offenses, which include possible jail time. In other states fines increase with multiple possession offenses or are handled in drug diversion programs. Under current Wisconsin law, second and subsequent possession charges are entirely at the discretion of the District Attorney’s Office of the county in which the offense occurred. Some areas of Wisconsin have depenalized marijuana possession. For example, in Madison possession of up to 112 grams of marijuana in a private place is allowed without any penalties or consequences.

**Portugal Model Impact:** In 2001, Portugal passed a comprehensive drug policy that included decriminalization of all drug use, acquisition and possession. If someone is caught in possession of any drug they are issued a citation to appear before a municipal administrative committee (a three-person administrative body consisting of two medically qualified and one legal member) who decides the course of action based on the severity of the offense, type of drug used, and addiction severity. This legislation also funds public health programs for drug prevention, treatment, harm reduction, and social reintegration measures.

Review of the impact of the Portugal drug policy changes is challenging, and reports have come out on both extremes, calling it a “resounding success” or a “disastrous failure” (Hughes & Stevens, 2012). The Hughes & Stevens (2012) report shows that past year and past month drug use in youth aged 15-24 went down between the years 2001 and 2007. However, in adults aged 25-54 past year and past month drug use went up during the same period (7% in 25-34 year olds, 3% in 35-44 year olds, 1% in 45-54 year



olds). Drug-attributable deaths (as measured by the Portugal National Statistics Institute) demonstrate a decrease from years 2001-2004, but then increased again from 2005-2008; still, levels in 2009 remained lower than pre-decriminalization levels. Experts attribute this reduction to increased access to drug treatment and harm reduction services (Hughes & Stevens, 2010).

Compared to other European and non-European countries, Portugal has low annual prevalence of marijuana and cocaine use, but higher levels of opiate use (EMCDDA, 2010). Still, compared to geographical neighbors Spain and Italy, Portugal is “similar or performing better for most indicators” and was “the only nation to exhibit declines in problematic drug use”, although their declines in marijuana use specifically were less pronounced (Hughes & Stevens, 2010). A recent analysis (Goncalves et al., 2015) reported that the Portuguese National Strategy for the Fight against Drugs policy has resulted in a significant 18% 11-year social cost reduction, due to both reduced legal system and health-related cost reductions.

In summary, the Portugal model has resulted in increased access to treatment and harm-reduction techniques, reduction in overall youth drug use (except marijuana), slight increases in adult drug use, and a slight reduction in drug-related deaths. **These changes, however, cannot be solely attributed to decriminalization because additional treatment, harm-reduction and welfare services were implemented at the same time.**

**Impact of Decriminalization on Youth:** Nationally, individuals 24 and under make up over half of all marijuana possession arrests (ACLU, 2013). Research on the impact of decriminalization on youth marijuana use and other public health outcomes has been challenging due to vast variations in statutes and substantial discretion of both police and prosecutors in decision-making related to arrests and judicial processing. Of the nineteen states that have decriminalized, eleven of them are from states within the Northeast or Western regions of the United States (NCSL, 2015), which had the greatest rates of adolescent marijuana use in recent years (Johnston et al., 2014a, 2014b).

Three states have decriminalized marijuana possession for all ages. For example, California decriminalized possession of less than one ounce (28.5 grams) of marijuana, which now carries a fine of \$100 (possession on school campus remains a criminal offense). Data from California has demonstrated some potential benefits for youth associated with decriminalization. Following reform that changed marijuana possession from a felony to a misdemeanor in 2011, youth marijuana possession charges fell 61% in one year (Males, 2012). Risk behavior in California analyzed by Males (2014) before and after reform noted most risk behaviors went down; including marijuana-related driving while intoxicated, drug overdose deaths, property crime arrests, and school dropout rate.

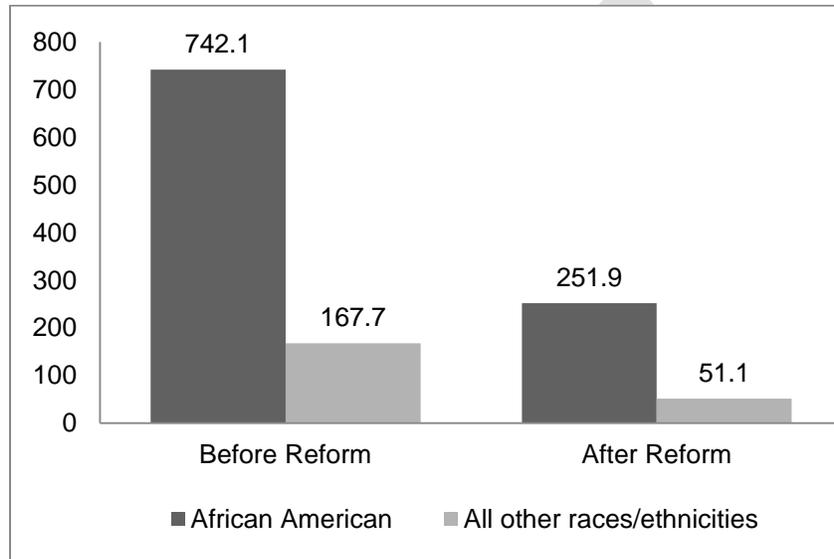
However, studies in other countries, such as Australia, have had mixed results, with some reporting no changes in use (Christie, 1991; Donnelly et al., 1995; McGeorge and Aitken, 1997; Lenton, 2000), and others finding increased use with decriminalization (Cameron & Williams, 2001; Williams, 2003). For example, Williams & Bretteville-Jensen (2014) conducted a thorough analysis of the impact of liberalizing marijuana laws in Australia and found that youth demonstrate the highest increases in marijuana use, especially within five years following reform. In contrast, a recent national-level drug policy analysis conducted on European countries revealed that in countries where there was decriminalization of drug possession, the odds of past month drug use were 79% lower; the authors concluded that “*eliminating punishments for possession for personal use is not associated with higher drug use*” in these countries (Vuolo, 2013).

**Racial Disparities after Decriminalization and Legalization.** One alarming finding of recent research into the impact of decriminalization and legalization on racial disparities in arrest rates for African-



Americans has revealed that while overall arrests and court cases have dramatically decreased, these policy changes have not reduced the disparities as experts had hoped (Males, 2014). In four states that underwent reform (California, Colorado, Connecticut, and Massachusetts), overall rates of arrests have decreased, but African-Americans remain more likely to be arrested for marijuana-linked offenses (Figure 7). Therefore, more research into the contributing factors or underlying causes of inconsistent marijuana arrest rates across races is warranted.

**Figure 7: Arrest rates (per 100,000) for African-Americans versus all other ethnicities before and after marijuana policy reform in California, Colorado, Connecticut and Massachusetts (adapted from Males, 2014)**



Note: "All other races/ethnicities" refers to people classified as any race or ethnicity besides "black" or "African American" including "White," "Hispanic," "Latino," "Other," "Asian," "Native," "Unknown," and "White/Hispanic." The four states with relevant post-reform data on all marijuana arrests/cases by race are California, Colorado, Massachusetts, and Connecticut. Rates are per 100,000 population by race, averaged for the four states. Sources: Criminal Justice Statistics Center (California) (2013); Colorado State Judicial Branch (2014); CJIS (2014).

In conclusion, although there are some inconsistencies in the literature, there is not strong evidence that decriminalization results in significant increases or decreases in youth use. Research also shows that marijuana decriminalization has not reduced racial disparities as expected. Continued research of these issues should be treated as a priority if Wisconsin considers reform of its marijuana laws and policies.

## Legalities and Regulations Recommendations

### Recommendation 6: Marijuana should not be legalized for personal, recreational use in the State of Wisconsin.

Based on the resulting increase in availability of marijuana and the documented poor behavioral, health, and neurocognitive impacts of this drug, legalization for general consumption of products containing any level of THC is not recommended. (The exception to this is the prescribed use of *FDA-approved* cannabinoid products for medicinal purposes.)

- In states and countries where marijuana has been legalized for general consumption, data shows either no change or an increase in the number of people using marijuana products. At best, decreased financial burden on the criminal justice system is offset by an increased burden on prevention, mental health, and treatment systems.



- According to both Colorado and Washington state data, black market cultivation and sales of marijuana have actually increased; requiring continued counter drug enforcement, resulting in minimal saving to taxpayers.
- Increased marijuana cultivation may have a negative agricultural and environmental impact in Wisconsin, although this requires more investigation.
- If Wisconsin legislature considers any alternative policies regarding marijuana outside of this recommendation, they need to consult marijuana/cannabinoid policy and science experts to ensure decisions minimally impact public health (e.g. see RANDs report commissioned by the State of Virginia in 2015).

**Recommendation 7: Broad decriminalization of marijuana is not recommended. Instead, Wisconsin statute should be amended as follows: a) possession of marijuana (any resin extracted from the plant cannabis that contains THC) for personal use (up to 10 grams) and/or possession of marijuana paraphernalia in the absence of any other non-drug related charge should be a state civil offense (including first and subsequent offenses); b) marijuana possession (up to 10 grams) and/or possession of marijuana paraphernalia in the presence of another non-drug related charge should be a misdemeanor or an enhancer to the underlining charge (including first and subsequent offenses), without any potential for incarceration in adults 18 and over.**

The Committee makes this recommendation with the intent to decrease inequality in the enforcement of the law for minority populations, minimize long-term negative consequences due to incarceration for marijuana-possession, save taxpayer funds currently used for detainment and imprisonment of marijuana-possession offenders and obligate these cost-savings towards increased access to prevention programs and treatment for substance use disorders. Important details of this recommended policy change include:

- Fines for marijuana possession and paraphernalia (whether civil offense or misdemeanor charges) should remain low enough so fines do not result in discriminatory enforcement for lower income individuals and increase the likelihood that citizens will be able to pay the fines in a timely manner (e.g., \$15 for first possession offense, \$10 for paraphernalia offense, subsequent violations increasing with a cap of \$100).
- Civil offenses shall not be part of public record. If the individual is charged with a misdemeanor (due to other non-drug related charges), the misdemeanor marijuana possession charge will not be part of public record; however, this information will be tracked for criminal justice purposes.
- It is recommended that trafficking and/or cultivating of marijuana, possessing greater than 10 grams of marijuana, smoking marijuana in public, using marijuana with minors, selling to minors, and driving while under the influence of marijuana remain criminal offenses according to existing State Statute.
- Adults aged 21 and older can mail in payment or pay on-line for first offense.
- Mandated drug education and screening should be conducted in drug diversion court for all offenders between the ages of 18-20, those who obtained a misdemeanor charge, and repeat offenders:
  - Due to concerns about the impact of marijuana on the developing brain, the establishment of mandatory drug education and screening for all offenders up to age 20 should be supported.
  - Those who commit other crimes while under the influence of THC, or in possession of THC as well as repeat offenders aged 21 and older are considered high-risk offenders, as such these individuals should undergo drug education and screening, including recommendations for treatment as needed.
  - For those who are considered high-risk (i.e., repeated offenses, other criminal charges while under the influence of marijuana, evidence of cannabis use disorder, serious comorbid mental illness, significant problems resulting from marijuana use), mandated drug treatment is an option at the discretion of the drug diversion court.
  - A misdemeanor charge of marijuana (THC) possession should be automatically expunged following completion of drug diversion court.



- All fees collected from marijuana possession and paraphernalia charges should go into a specific earmarked fund to offset the cost of the drug diversion court.
- If policy changes are pursued, the state should re-invest the criminal justice cost savings into the following:
  - Increased funding to improve access to evidence-based drug and alcohol treatment programs.
  - Implementation of evidence-based prevention programs in public schools (see Prevention section for specifics).
  - Drug and alcohol screening for middle and high-school students in Wisconsin public schools and drug screening in primary care settings for adults.
  - Increased access to housing to reduce the impact of poverty on families.
  - Increased access to job training programs and grants for education.

**Recommendation 8: Wisconsin should implement a more detailed and accurate tracking system to properly codify criminal and civil consequences for all marijuana (and other drug) related crimes within the CCAP database. At a minimum, the system should include a comparison of the time sentenced to the actual amount of time served in jail for a marijuana related crime, in order to produce meaningful data and track the associated costs. It also should be used to track ethnic, socioeconomic, or other conditions potentially related to arrests and sentencing, in order to identify and address possible disparities.**

**Recommendation 9: Wisconsin courts should develop a system of support for offenders currently charged and convicted of marijuana possession.**

Individuals and families impacted by marijuana use or abuse need assistance to learn about and navigate options that will mitigate damage to their records and families, as well as help them with resources that provide support and prevent recidivism. There are legal pathways to help clear the records of those convicted of misdemeanors and Class H felonies, which includes 2<sup>nd</sup> offense marijuana possession, but vulnerable populations are less likely to navigate such pathways without assistance. Expungement removes the charge, conviction and sentence from the person's record and the Wisconsin Circuit Court Access (public records) system. A deferred prosecution agreement, if successfully completed, results in the removal or lessening of the underlying offense, however:

- Wisconsin drug courts typically do not engage persons that commit a marijuana-related offense, focusing rather on substances and related crime that are considered more dangerous (e.g., heroin.)
- Offenders with marijuana addiction or disorders are less likely to be recognized as having a serious drug problem with serious consequences and offered similar assistance- despite clear scientific evidence demonstrating cannabis use disorder and withdrawal.

Therefore, Wisconsin statute should reflect this difficulty and be amended to allow for easier pathways for those previously convicted of simple possession of marijuana (THC) offenses to have their criminal record expunged from public record, while remaining available for law enforcement records.

**Recommendation 10: All employers should follow the United States Department of Labor's Drug-Free Workplace Act of 1988.**

Appendix D highlights requirements of the Drug-Free Workplace Act

- Marijuana use should be closely monitored for all employees in safety-sensitive positions, whether or not covered by federal drug testing.
- In all cases, a clear policy should be developed to guide decisions on how to evaluate for impairment due to marijuana use. Further, legal consultation during policy development is strongly advised, to assure compliance with all state and federal regulations.



- Employers' rights to drug test and administer company policies regarding drug use should be preserved.

DRAFT



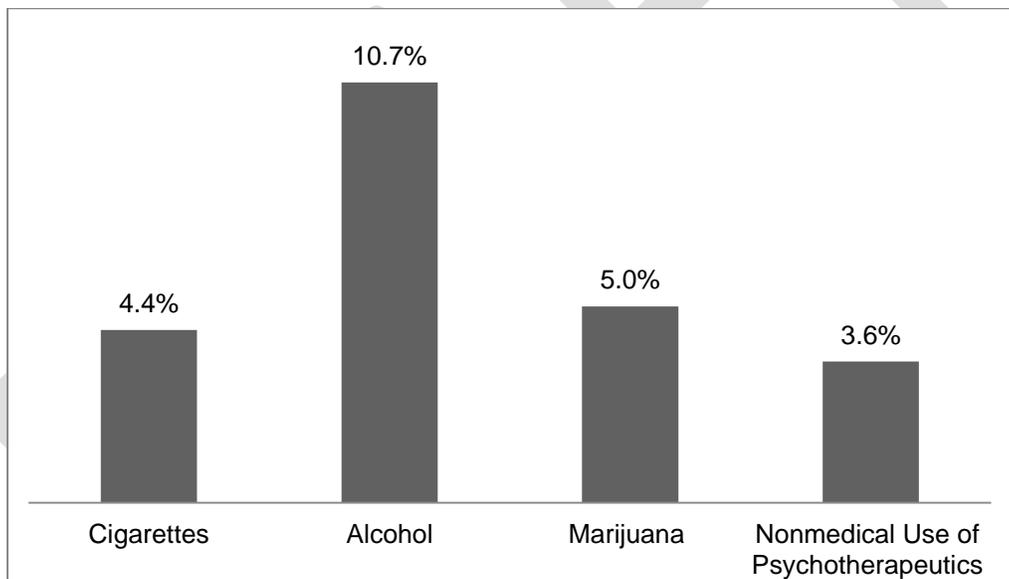
## Prevention

As demonstrated throughout this report, marijuana is not harmless. The previous sections of this report highlight the adverse effects that marijuana use can have on both mental and physical health. Despite this growing body of knowledge, marijuana continues to increase in popularity as both a mind-altering substance and an unapproved, unregulated “herbal” remedy. This section of the report focuses primarily on the need to prevent the initiation of marijuana use by adolescents. Targeting prevention efforts to this age group is critical for preventing the negative health and social outcomes experienced by adults who begin using during their teen years.

### Preventing Teen Marijuana Use Must be a Priority

As shown in Figure 8, marijuana is the second most commonly initiated substance by teens in Wisconsin, (SAMHSA, 2015). Looking exclusively at substance use disorders, it is estimated that approximately 9% of those older than 18 who experiment with marijuana will become addicted. This rate goes up to nearly 17% among those who begin using as teenagers, and between 25-50% for young people who develop a daily pattern of use (Volkow, et al., 2014).

**Figure 8: Past-Year Initiation of Substance Use by Substance Among Adolescents Aged 12-17 in Wisconsin, 2009-2013**



Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health, 2009-2013.  
Note: Psychotherapeutics include an array of drugs used to treat mental health conditions.

Research investigating marijuana's influence on mental health and cognitive abilities reinforces the need for targeted prevention efforts for children and adolescents. This is due primarily to the fact that the adolescent brain is undergoing important development that continues well into the mid 20's. Early onset of marijuana use, and continued use during the teen years can significantly increase a person's lifetime risk for mental illness and cognitive deficits (Renard et al., 2014). In fact, brain images taken from young, frequent marijuana users reveal structural and functional abnormalities in the brain critical to cognitive functions like memory, executive function, sustained attention and psychomotor speed (Lisdahl et al., 2014).



**Research-based Risk and Protective Factors for Youth Marijuana Use**

Prevention programs should target those factors that increase or decrease an individual's vulnerability for marijuana use. These are known as risk and protective factors.

*Risk Factor:* a characteristic at the biological, psychological, family, community, or cultural level that precedes and is associated with a higher likelihood of problem outcomes (such as antisocial behavior, parental use or favorable community norms toward substance use.)

*Protective Factor:* a characteristic associated with a lower likelihood of problem outcomes or that reduces the negative impact of a risk factor on problem outcomes (such as youth perception of parental disapproval of marijuana use and neighborhood cohesion).

**Risk factors by social context**

Individual factors:

- Any of the following identified by grade 6 - conduct disorder, impulsivity, self-control problems, attention problems
- High sensation seeking and low harm avoidance temperament in middle school and high school
- Positive attitudes toward substance use, intention to use, low perception of harm
- Untreated mental illness
- Antisocial or aggressive behavior
- Early onset alcohol and/or tobacco use

Relationship factors:

- Having cannabis using friends
- Aggressive behavior
- Perceived parental attitudes toward drug use
- Parental use

Community Factors:

- Perceived availability of the drug
- Favorable community norms toward substance use

**Protective factors by social context**

Individual factors:

- Self-efficacy, refusal and resistance skills
- Emotional intelligence

Relationship factors:

- Youth perception of parental monitoring
- Youth perception of parental disapproval of marijuana use
- Parents and peers disapprove of marijuana use

Community Factors:

- Neighborhood cohesion and intergenerational networks

Source: SAMHSA's Center for the Application of Prevention Technologies

***Progression from Marijuana to Other Substance Use***

Scientists have explored the influence of early marijuana use on the eventual use of other illicit drugs. While the term "gateway drug" has been controversial, research findings strongly suggest that adolescent marijuana use can contribute to increased curiosity and willingness to try other substances; marijuana use during adolescence may also sensitize the brain's reward-system and make one more likely to use other drugs. A recently published study of over 6,500 adults who started marijuana use before using any other drug found that nearly 45% progressed to other illicit drug use in their lives, a rate that is significantly higher than the general population (Secades-Villa et al, IJDP 2015). While the study did confirm marijuana's "gateway" effect, it also uncovered risk factors that predicted who was most vulnerable to making the transition to other drugs, a finding that the researchers hope will inform prevention and early intervention efforts. The presence of any of the following increased the likelihood that initiating substance use with marijuana would lead to other illicit drug use: mood disorder, anxiety disorder, conduct disorder, personality disorder, and family history of substance use disorder (Secades-Villa et al., 2015).

***Other Vulnerable Populations***

Studies looking at the impact of toxic stress on the developing brain strongly suggest that children and adolescents who have experienced adverse childhood experiences are at increased risk for adopting unhealthy coping strategies including early initiation of marijuana use (Anda & Brown, 2010). Additional information on this relationship and adverse childhood experiences can be found in Appendix E.

In addition to individuals who experience adverse childhood experiences, individuals within other groups may also be at increased risk for experiencing the harmful effects of marijuana use. For the purpose of this report, vulnerable individuals are those who do not have access to evidence-based prevention services and/or are unable to make fully informed decisions for themselves. This vulnerability can result from developmental problems; personal incapacities; disadvantaged social status; inadequacy of interpersonal networks and supports; degraded



neighborhoods and environments; and the complex interactions of these factors throughout the lifespan (Mechani & Tanner, 2007).

### **Reducing Marijuana Use Through Evidence-based Prevention**

Evidence-based prevention refers not only to those specific prevention activities that evaluation research has shown to be effective, evidence-based prevention also refers to a process.

An example of an evidence-based process for marijuana prevention is the Strategic Prevention Framework (SPF). The SPF is a five step strategic process, grounded in public health and prevention research, designed to guide prevention planners in the selection, implementation, and evaluation of effective, culturally appropriate, and sustainable prevention activities. The effectiveness of this process begins with a clear understanding of community needs and depends on the involvement of community members in all stages of the planning process. Refer to <http://www.samhsa.gov/spf> for more information about the SPF process and evidence-based prevention.

Success in achieving measurable reductions in marijuana use will depend in large part on the capacity of communities and organizations throughout the state to address the problem locally utilizing evidence-based prevention. Building and sustaining local capacity for marijuana prevention requires a statewide prevention infrastructure that can provide the needed technical assistance and support. The foundation for this infrastructure is already in place with the existence of the Alliance for Wisconsin Youth (AWY) and the growing number of Certified Prevention Specialists throughout the state.

AWY, a program of the Wisconsin Department of Health Services is designed to build the capacity of its over 80 member coalitions in substance abuse prevention and youth development work. Through a network of five regional prevention centers, AWY member coalitions have access to, and share, information about evidence-based/emerging programs, practices and policies, as well as resources to develop and implement these strategies. Certified Prevention Specialists are professionals trained in evidence-based prevention and possess the knowledge and skills to assist coalitions and organizations in effectively addressing local marijuana concerns.

Given the impact of substance abuse on public health and safety, strengthening the state's prevention infrastructure must become a priority. Increasing the investment in the AWY and in opportunities to increase the Certified Prevention Specialist workforce will provide communities and organizations with the capacity needed to reduce marijuana use, especially among our youth.

### **Call to Action**

Preventing the adverse effects of marijuana use on the health and safety of Wisconsin residents will require a comprehensive approach involving communities, schools, families, policymakers, businesses, healthcare, social service providers, and others who engage with youth and families.

#### ***Community Groups, Organization and Coalitions***

According to Hawkins, Shapiro and Fagan (2010), "When community stakeholders from diverse organizations and backgrounds come together to achieve clear and common goals, use scientific advances regarding what works to prevent problem behaviors, and monitor their activities for quality assurance, positive outcomes can be achieved," (pg. 518-527).

#### ***Municipal Governments and Influential Leaders***

In addition to elected officials, county and municipal leaders are those charged with overseeing the provision of general government services: for example, police and fire chiefs; village and town administrators; directors of health and human services; public health; parks and recreation; planning and zoning; and municipal and circuit court judges. Together with elected officials, these local leaders



can be instrumental in fostering an environment that discourages marijuana use and supports healthy behaviors.

### ***School Districts and Post-Secondary Education Providers***

A 2014 review of evidence-based, research-based and promising programs and policies conducted by the Washington State Institute for Public Policy showed that evidence-based prevention education and early intervention, properly delivered, reduces marijuana use among young people. In addition, 86% of the programs and policies reviewed provided benefits that exceeded costs (WSIPP, 2014).

### ***Parents, Guardians, and Other Caring Adults***

Over 40 years of research on child and adolescent resiliency, and risk and protective factors points to positive relationships with parents, guardians, and other caring adults as being the *key* ingredient for positive youth development. These individuals can provide an important protective role as children are being bombarded with messages about marijuana use from their peers, and social and traditional media sources.

### ***Businesses and Employers***

The effects of marijuana include: relaxation; euphoria; relaxed inhibitions; sense of well-being; disorientation; altered time and space perception; lack of concentration; impaired learning and memory; alterations in thought formation and expression; drowsiness; sedation; mood changes such as panic reactions and paranoia; and a more vivid sense of taste, sight, smell, and hearing. Stronger doses intensify reactions and may cause fluctuating emotions, flights of fragmentary thoughts with disturbed associations, a dulling of attention despite an illusion of heightened insight, image distortion, and psychosis (Couper & Logan, 2014). Given its effects on human performance, the potential consequences of marijuana use in the workplace include the risk and associated costs of accidents, injuries, and loss of productivity. Business leaders play an important role in taking a proactive stance to ensure the health and safety of their workforce.

### ***State Lawmakers***

State lawmakers will play a critical role in determining the future course of marijuana regulation and control in Wisconsin. Wisconsin SCAODA established the Marijuana Ad-hoc Committee, in part, to help inform future policies with a focus on promoting public health and safety. Additionally, this report seeks to provide policymakers at all levels, including state lawmakers, with up-to-date, accurate information about marijuana to help inform future decisions about marijuana regulation in the state.

### ***Healthcare Professionals, Social Service Providers, and Other Youth-Serving Professionals***

Any individual that provides direct health and/or social services to young people and their families is in an ideal position as a helping professional to educate their patients and clients about the dangers of marijuana use. Professionals who work directly with patients or clients are also identifying those who are experiencing problems as a result of marijuana use and referring them to the appropriate helping resources in the community.

## **Prevention Recommendations**

The following recommendations are offered as actionable items to prevention-minded individuals within each of the sectors listed above. A list of online resources that may be helpful in implementing the following recommendations is provided in Appendix F.

**Recommendation 11 - Community groups, organizations and coalitions should implement evidence-based prevention strategies that address known risk and protective factors for marijuana use.**

To ensure effectiveness in addressing local marijuana concerns, community groups, organizations and coalitions need to be guided by a data-driven, evidence-informed processes such as Substance Abuse



and Mental Health Services Administration's (SAMSHA's) Strategic Prevention Framework (SPF) or the National Association of County and City Health Officials' (NACCHO) Community Health Improvement Plan (CHIP). These plans guide the selection, implementation and evaluation of effective, culturally appropriate and sustainable prevention activities.

- In order to guide school district's prevention planning and align it with that of broader community prevention efforts, schools should regularly assess student attitudes and behaviors around marijuana use and share their findings with coalitions and other community stakeholders that are working to address marijuana use.
  - School districts are strongly encouraged to institutionalize the administration of the Youth Risk Behavior Survey (YRBS) every other year to middle and high school students in order to continually assess student attitudes and behaviors around marijuana use and other risky behaviors.
  - Universities can implement surveys such as the Indiana College Substance Use Survey or the American College Health Association's National College Health Assessment (ACHA-NCHA), collecting data from their students in order to inform program and policy decisions.
- Utilize student survey results, relevant local data, and findings from organizational needs assessments to develop and implement a comprehensive strategy for evidence-based marijuana prevention.
  - Youth development and prevention experts within the community should partner with schools, coalitions, businesses, local government and elected officials to identify ways to work together in addressing marijuana issues at the community level.
  - Universities should organize a campus-wide prevention coalition made up of representatives from each of the major academic, student life, and athletic departments, as well as key stakeholders from the broader community, to develop and implement a comprehensive strategy for evidence-based marijuana prevention.
- Recent research on 200 effective programs and practices found that 183 had benefits that outweighed their costs (Lee, Aos & Pennucci, 2015). Wisconsin should substantially increase its investment in these evidence-based prevention and public health services at the state, community, coalition and school levels.

**Recommendation 12 - Support coalitions as the vehicle through which communities will successfully prevent and reduce marijuana use.**

- Connect with the Alliance for Wisconsin Youth (<http://www.allwisyouth.org/>) to learn more about how coalitions work and why they are effective in reducing substance abuse locally.
- If a formal partnership or coalition for prevention exists, meet with members to learn more about their work and ways the community can help the coalition sustain its efforts.
- In communities where a formal partnership for substance abuse prevention does not exist, municipal and civic leaders can advocate among their peers to rally support for the formation of a community coalition.

**Recommendation 13 - Work to foster an environment locally that empowers young people not to use marijuana.**

- Strive to provide developmentally appropriate, evidence-informed, substance abuse prevention to all students every year beginning in kindergarten.
  - Carefully research programs to identify and select interventions that best fit the prevention needs identified through a strategic planning process.



- Consult with a regional coordinator of the Wisconsin Safe and Healthy Schools Training and Technical Assistance Center and the director of the Regional Prevention Center of the Alliance for Wisconsin Youth for guidance in selecting prevention programs.
- Provide students with services and opportunities to strengthen their resilience and enhance their social and emotional development. For example, institute afterschool programs that follow evidence-based practices to promote social and emotional development and educational support groups.
- Educators, administrators, student service professionals, and support staff (K-12) should be trained to identify and assist students who may be experiencing problems resulting from marijuana use.
  - Develop and implement policies and procedures for conducting early interventions within the school and for ensuring appropriate/effective communication with parents/community resources (UCLA, 2010).
  - Utilize a tool such as Screening, Brief Intervention and Referral to Treatment (SBIRT) to help students who may be experiencing problems resulting from marijuana or other substance use (<http://www.samhsa.gov/sbirt>).
- In research summarized by SAMHSA, key tools parents can use to help to protect their children against substance use include talking with them about the dangers of substance use, showing disapproval of such behavior, and staying involved in their day-to-day activities (SAMHSA, 2009).
  - Promote family friendly, alcohol and tobacco-free community events to help promote the norm that fun can be had without substances.
  - Attend parenting classes, especially those that incorporate skills such as talking with youth about the risks of substance use, monitoring social media, setting limits, and negotiation of solutions.
  - Become knowledgeable about marijuana's impact on child and adolescent development, and learn to recognize the signs and symptoms of marijuana and other substance use, and know who to turn to if a child needs help.
  - Continually seek out credible, current, factual information about marijuana's impact on child and adolescent development ([www.drugabuse.gov/parents-educators](http://www.drugabuse.gov/parents-educators) and [www.adai.washington.edu](http://www.adai.washington.edu)).
  - Talk with physicians, counselors, and youth ministers to identify community resources.
- Similar to zoning restrictions that have been used to limit the exposure of young people to alcohol and tobacco marketing, municipalities should enact similar ordinances for advertising aimed at promoting and normalizing marijuana use.
  - Support positive youth development initiatives and efforts aimed at promoting safe and healthy neighborhoods.
- Major policies should be analyzed before adoption to identify their likely impact on public health and safety (Healthiest Wisconsin 2020).

**Recommendation 14: Provide information to employers, and especially supervisors, regarding signs, symptoms and consequences of marijuana use, as well as local resources for obtaining help for cannabis use disorders.**

- Implement evidence- or research-based worksite prevention training programs.
- Implement Employee Assistance Programs (EAPs) to provide confidential counseling and referrals to employees experiencing personal problems that are adversely impacting their job performance, health, or well-being.
- Disseminate information on substance use/misuse, local resources, and programs such as, Alcoholics Anonymous, Narcotics Anonymous, Al-Anon and EAPs via worksite health fairs, staff meetings, etc.



- Institute recommendations provided by the American College of Occupational and Environmental Medicine and American Association of Occupational Health Nurses in *Marijuana in the Workplace: Guidance for Occupational Health Professionals and Employers*. This joint guidance statement can be accessed online at [http://journals.lww.com/joem/Fulltext/2015/04000/Marijuana\\_in\\_the\\_Workplace\\_\\_\\_Guidance\\_for.17.aspx](http://journals.lww.com/joem/Fulltext/2015/04000/Marijuana_in_the_Workplace___Guidance_for.17.aspx)

**Recommendation 15: Make drugged driving prevention and enforcement a statewide priority.**

- Mandate drug recognition training, such as Advanced Roadside Impaired Driving Enforcement (ARIDE) for all law enforcement officers.
- Every county in the state should have at least one trained Drug Recognition Expert (DRE).
- As new technology is developed to accurately test for THC impairment, provide grants to local law enforcement agencies to assist in acquiring these new enforcement tools.

**Recommendation 16: Incorporate Screening, Brief Intervention and Referral to Treatment (SBIRT) as a tool for helping clients who may be experiencing problems resulting from marijuana or other substance use (<http://www.samhsa.gov/sbirt>).**

- Utilize scheduled appointments and meetings with patients and clients as opportunities to provide education about the adverse effects of marijuana use.
  - Make educational materials available in waiting rooms and lobbies.
  - Pregnant and breastfeeding clients should be strongly discouraged from using marijuana in any form to prevent any risk of THC compromising the brain development of their infant.



## Treatment and Recovery

### Background

The *Diagnostic and Statistical Manual of Mental Disorders, 5<sup>th</sup> ed.* states, “Cannabis use disorder and other cannabis-related disorders include problems that are associated with substances derived from the cannabis plant and chemically similar synthetic compounds.” The most essential feature of a substance use disorder is a cluster of cognitive, behavioral, and physiological symptoms indicating that the individual continues using the substance despite significant substance-related problems. An important characteristic of substance use disorders is an underlying change in brain circuits that may persist beyond detoxification (American Psychiatric Association, 2013).

The DSM-5 recognizes that sudden cessation of daily or near daily cannabis use often results in the onset of a cannabis withdrawal syndrome. Cannabis withdrawal syndrome may not be as severe as other withdrawals, like alcohol and opiates, but it can cause significant distress and contribute to difficulty quitting and relapse among those trying to abstain (APA, 2013). Common symptoms of withdrawal include:

- Irritability
- Anger or aggression
- Anxiety
- Depressed mood
- Restlessness
- Sleep difficult
- And decreased appetite or weight loss

### *Treatment Can Be Effective for Cannabis Use Disorders*

Both cannabis use and potency has increased which has increased the demand for cannabis use disorders (CUDS) treatment. Many seek treatment for CUDS because of the negative consequences/effects it has on their life and how they function in their day to day activities. “Adult and adolescent treatment program should address the skills and lifestyle changes necessary to attain and maintain abstinence,

#### **Cannabis Use Disorder Diagnostic Criteria – DSM-5**

A problematic pattern of cannabis use leading to clinically significant impairment or distress, as manifested by at least two of the following, occurring within a 12-month period:

1. Cannabis is often taken in larger amounts or over a longer period than was intended.
2. There is a persistent desire or unsuccessful efforts to cut down or control cannabis use.
3. A great deal of time is spent in activities necessary to obtain cannabis, use cannabis, or recover from its effects.
4. Craving, or a strong desire or urge to use cannabis.
5. Recurrent cannabis use resulting in a failure to fulfill major role obligations at work, school, or home.
6. Continued cannabis use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of cannabis.
7. Important social, occupational, or recreational activities are given up or reduced because of cannabis use.
8. Recurrent cannabis use in situations in which it is physically hazardous.
9. Cannabis use is continued despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by cannabis.
10. Tolerance, as defined by either of the following:
  - a. A need for markedly increased amounts of cannabis to achieve intoxication or desired effect.
  - b. Markedly diminished effect with continued use of the same amount of cannabis.
11. Withdrawal, as manifested by either of the following:
  - a. The characteristic withdrawal syndrome for cannabis (refer to Criteria A and B of the criteria set for cannabis withdrawal).
  - b. Cannabis (or a closely related substance) is taken to relieve or avoid withdrawal symptoms.

Specify current severity:

- 305.20 Mild: Presence of 2-3 symptoms
- 304.30 Moderate: Presence of 4-5 symptoms
- 304.30 Severe: Presence of 6 or more symptoms



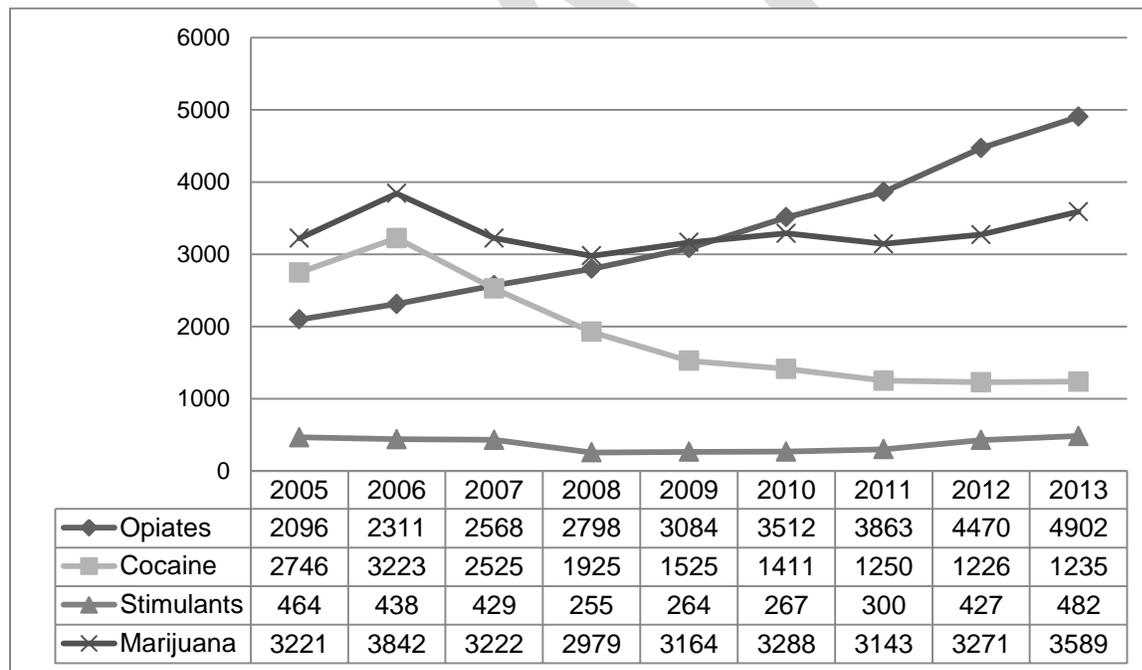
and should address, psychiatric, relationship, legal and medical problems, when necessary” (Caron Treatment Centers, 2006). Since adolescents and adults have different substance use treatment needs, age-specific strategies will need to be implemented and are recommended to meet the treatment and recovery needs of clients of all ages.

Marijuana is the most commonly cited drug among primary drug treatment admissions in Wisconsin. In 2011, nearly one-third of Wisconsin drug treatment admissions were for marijuana (ONDCP, 2013). In 2010, there were nine Wisconsin deaths attributed to marijuana use (WI DHS, 2014).

Some identified barriers to accessing available substance use treatment and recovery facilities and services in Wisconsin are:

- Meeting eligibility requirements for primary drug treatment admissions;
- Adequate financial resources to pay for primary drug treatment admissions;
- Health insurance policy restrictions limiting access to primary drug treatment;
- Personal motivation – self-awareness of one’s own needs;
- Limited primary drug treatment services in many geographic regions of the state; and
- Capacity of local service systems to meet the demand for professional, primary drug treatment services (WI DHS, 2014).

**Figure 9: Persons Admitted to Substance Abuse Treatment for Selected Illicit Drugs, Wisconsin, 2005-2013.**



**Definitions**

The following definitions are provided for clarity of the recommendations that follow.

- **Substance Use Treatment:** Individual and group counseling include a variety of treatments used to treat behavioral health problems associated with Cannabis Use Disorder and other Substance Use Disorders. Counseling and more specialized psychotherapies seek to change behaviors, thoughts, emotions, and how people see and understand situations. Counseling can take a



number of forms depending on the type of therapy being used, the goals of the treatment, and other factors in the life of the person receiving therapy. The treatment system for substance use disorders is comprised of multiple service components, including the following: individual and group counseling, inpatient and residential treatment, intensive outpatient treatment, partial hospital programs, case or care management, medication, recovery support services, 12-Step fellowship, and/or peer supports. A person accessing treatment may not need to access every one of these components, but each plays an important role in fostering successful treatment outcomes. These systems are embedded in a broader community and the support provided by various parts of that community also play an important role in supporting the recovery of people with substance use disorders. Some courses of counseling last for months or even years, while others can be brief. Counseling is provided by trained clinicians such as psychologists, psychiatrists, social workers, professional counselors, substance abuse counselors (CSAC and SAC) and other appropriately trained as well as credentialed treatment, and recovery providers (SAMHSA, 2015).

- **Recovery:** A process of change through which individuals improve their health and wellness, live a self-directed life, and strive to reach their full potential (SAMHSA, 2012).
- **Screening:** Determines the likelihood that a client has a mental health, substance use disorder, or co-occurring substance use and mental health disorders or that his or her presenting signs, symptoms, or behaviors may be influenced by co-occurring issues. The purpose is not to establish the presence or specific type of such a disorder, but to establish the need for an in-depth assessment. Screening is a formal process that typically is brief and occurs soon after the client presents for services (CSAT, 2006).
- **Assessment:** Gathers information and engages in a process with the client that enables the provider to establish (or rule out) the presence or absence of a mental health, substance use disorder, or co-occurring disorder. Determines the client's readiness for change, identifies client strengths or problem areas that may affect the processes of treatment and recovery, engages the client in the development of an appropriate treatment relationship (CSAT, 2006).

## Treatment Recommendations

**Recommendation 17: Expand adolescent substance use disorders treatment and recovery options across the state to allow timely access of appropriate level of care for all youth and young adults.** (Adapted from Recommendation #29 of "Wisconsin's Heroin Epidemic: Strategies and Solutions, July 2014).

Currently, there are limited options for adolescent substance use disorders treatment in Wisconsin. Adolescent populations should receive fair and equitable services in-line with services provided to adults with substance use disorders, recognizing the special needs of adolescents and young adults.

- Maintain an updated environmental scan of behavioral health service options, primary treatment sources for substance use disorders and other appropriate resources for youth in Wisconsin.
- Utilize the updated environmental scan to collaborate and work with the Children, Youth and Family Sub-Committee of the Intervention and Treatment Committee of SCAODA to build capacity and expand adolescent substance abuse services in Wisconsin.
- Identify and implement new ways of providing behavioral health services, especially substance use disorders treatment for adolescents so they can maintain a tie to their community.
  - Partner with local hospitals and community agencies to provide Student Assistance Programs in schools.



- Identify appropriately credentialed and trained counselors to help support students while receiving academic instruction, behavioral health and substance abuse treatment services.
- Work with leading health insurance companies in Wisconsin to provide fair and adequate compensation for adolescent substance use disorder services.
- Prioritize and support recovery high schools, peer recovery support programs, court diversion programs, recovery coaching and other similar efforts to sustain recovery from cannabis use disorders, particularly for adolescents and young adults (SCAODA, 2014)
- See Appendix G - *Principles of Adolescent Substance Use Disorder Treatment: A Research-Based Guide*

**Examples of evidence based or evidence informed treatment services and supports to improve the lives of youth and young adults who have or are at-risk of having a serious mental health and substance use condition(s):**

1. Cognitive Behavioral Therapy (CBT)
2. Motivational Interviewing
3. Dialectical Behavioral Therapy (DBT)
4. Aggression Replacement Training
5. Adolescent Community Reinforcement Approach (A-CRA)
6. Brief Strategic Family therapy
7. Family Support Network (FSN)
8. Functional Family Therapy Adolescent Alcohol and Drug Abuse
9. Motivational Enhancement Therapy and Cognitive Behavioral Therapy for Adolescent Cannabis Users and Other Substance Users (MET/CBT)
10. Multidimensional Family Therapy (MDFT)
11. Multisystemic Therapy (MST) for Juvenile Offenders
12. Residential Student Assistance Program (RSAP)
13. Trauma Informed Care
14. Assertive Continuing Care (ACC)

**Recommendation 18: Expand adult substance use disorders treatment and recovery options across the state to allow timely access of appropriate level of care for all residents.**

The State of Wisconsin Department of Health Services’ 2014 Wisconsin Mental Health and Substance Abuse Needs Assessment assessed gaps within substance abuse services. “In 2010, 395 persons statewide were denied needed services... due to a lack of availability or lack of public funding. An additional 2,460 persons statewide were placed on a waiting list for services... Studies show that clients from waiting lists are at higher risk of not starting treatment or withdrawing from treatment” (WI DHS, 2014).

**Examples of evidence based or evidence informed treatment services and supports to improve the lives of adults who have or are at-risk of having a serious mental health and substance use condition(s):**

1. Cognitive Behavioral Therapy (CBT)
2. Motivational Interviewing
3. Dialectical Behavioral Therapy (DBT)
4. Brief Marijuana Dependence Counseling
5. Correctional Therapeutic Community for Community Abusers
6. Motivational Enhancement Therapy (MET)
7. Trauma Informed Care

- Prioritize the funding of substance use disorders treatment in Wisconsin.
- Provide fair compensation from insurance companies for substance use disorder services (SCAODA, 2014)
- Address barriers to accessing mental health or substance abuse treatment, including cost, motivation, transportation/distance, living in rural areas, and stigma in order to increase the number of persons receiving treatment (WI DHS, 2014).
- Achieve mental health and substance use disorder service appropriateness and equity by ensuring the appropriate mix of inpatient, detox, residential, intensive outpatient, outpatient, psychosocial rehabilitation services, sober living, halfway house programs, crisis intervention, recovery support



services, peer specialists, recovery coaches, consumer-run centers, etc. (WI DHS, 2014).

- Reduce disparities in access to effective, culturally and linguistically competent mental health and substance use disorder services among populations of differing races, ethnicities, sexual orientation and deaf/hard of hearing persons (WI DHS, 2014).
- Increase veterans, active service members and military families who receive effective treatment for mental health or substance use disorders (WI DHS, 2014)

**Recommendation 19: Substance use disorders treatment and recovery services for pregnant women should promote abstinence from marijuana during and after pregnancy to protect unborn and developing children and prevent drug-affected newborns and nursing infants.**

Marijuana use in pregnancy and breastfeeding mothers is a public health concern. A report issued by the Colorado Department of Public Health & Environment noted that marijuana’s psychoactive ingredient, THC, is passed to children through the placenta and breast milk. The health consequences, short and long term, of this THC exposure are not fully understood. What is known is that an infant’s brain is not fully developed at birth, and introduction of THC into the infant’s developing system must be avoided.

Pregnant women in substance use treatment typically face financial, social and psychological difficulties that affect their options and treatment progress. The Center of Substance Abuse Treatment (CSAT) outlined substance use treatment recommendations to assist pregnant women in feeling supported and successful. This Committee supports the following CSAT recommendations in Wisconsin:

- Treatment should be provided in a gender specific, non-punitive, non-judgmental, nurturing manner, with attention to each client’s fears and cultural beliefs.
- Incorporate psychological interventions to address disruptions in the mother-child relationship, guilt, depression, low self-esteem and victimization and past trauma.
- All pregnant and breastfeeding clients should be screened using SBIRT.
- Provide comprehensive treatment services, including individual, group and family therapy, address the physiological effects of substance use and psychosocial factors.
- Provide positive proactive supportive services and alternative healthy coping strategies to replace substance use for pregnant women and people with substance use disorders with dependent children, (Adapted from Recommendation #30 of “Wisconsin’s Heroin Epidemic: Strategies and Solutions, July 2014).
- Use of the person centered planning approach, which helps the mother identify her own “needs by putting [her] in charge of defining the direction for [her life], not on the systems that may or may not be available to serve [her]” (from <http://www.personcenteredplanning.org/>). When helping the expectant mother determine her ultimate goal, the clinician should encourage her to work toward as close to abstinence as possible. Once the mother has identified her own goals (be it abstinence or harm reduction), then treatment can proceed accordingly.
- A family has several points where they can be lost in follow-up care, such as a ‘warm handoff’ between agencies and providers; it is crucial that state health agencies play a key role in linking various resources and providers systematically track substance-exposed infants through screening, assessment and service delivery (SCAODA, 2014)

**Recommendation 20: Research, evaluate and implement promising alternative diversion programs including substance use disorders treatment within the legal system.**

The traditional approach of incarceration and prosecution of marijuana users has not deterred recidivism. In fact, this approach may contribute to the ‘revolving door’ of the justice system by limiting employment



opportunities. This approach also creates barriers regarding housing opportunities and eligibility for benefit programs. Several areas around the state and throughout the country are exploring diversion options within the legal system for low risk marijuana using offenders. Due to the emerging need and newness of these programs, the effectiveness of several are currently being evaluated. One such promising program:

- Law Enforcement Assisted Diversion (LEAD) is a promising program which allows law enforcement officers to redirect low-level offenders engaged in drug or prostitution activity to community-based services, instead of jail and prosecution. By diverting eligible individuals to services, LEAD is committed to improving public safety and public order, and reducing the criminal behavior of people who participate in the program (<http://leadingcounty.org/>).

**Recommendation 21: Provide substance use disorders treatment for persons while incarcerated and develop better linkages to improve the integration of services between criminal justice, primary medical care and treatment and recovery providers to ensure continuing care.**

*(Adapted from Recommendation #26 of "Wisconsin's Heroin Epidemic: Strategies and Solutions, July 2014).*

- Establish ways to fund treatment since medical assistance is stopped while individuals are incarcerated.
- Find alternative ways for individuals to serve their time while receiving treatment, such as alternative sanction programs.
- Increase and continue dialogue with corrections staff to examine their views/opinions regarding marijuana use and identify future training opportunities.
- Provide education services for individuals as they are released from incarceration, as well as their family members, related to the risk of relapse and community resources for supporting recovery.
- Strengthen linkages between the criminal justice and primary care systems and substance use disorder treatment providers to ensure continuity of care.

**Recommendation 22: Provide continuing educational opportunities for treatment and recovery providers in an effort to increase understanding of developing science with regard to cannabis use disorders.**

Educational opportunities should include (but not be limited to):

- Evidence-based treatment options and promising research,
- Research findings regarding pharmacotherapies to assist in treatment,
- Clinical innovations to use in the management of withdrawal symptoms,
- The effect of marijuana use on the developing brain,
- The impact of adverse childhood experiences and treatment approaches that reflect best practice in trauma-informed care, and
- Emerging research of best practices for adolescent and young adult specific recovery and support programs.



## Conclusion

On a national landscape, the perception of marijuana, its use and regulation continue to evolve. While shifting social and political positions create a myriad of challenges at state and local levels, Wisconsin has a distinct opportunity to benefit from the silver lining – learning from those who have come before. As a state which chooses to outlaw the vast majority of marijuana use, Wisconsin is well positioned to observe, consider, integrate and/or discard the policies and practices of states that have changed their marijuana usage laws. Studying other states and the breadth of implications following such policy change(s) is critical. Wisconsin must lean on, and lead, additional research and data into the effects of marijuana use.

With existing research and data in tow, marijuana remains an illegal substance in Wisconsin. A primary structure for reducing its use is in place. Adopting the policies and practices outlined in this report will enrich this structure, which will reverberate throughout the State of Wisconsin and positively impact the reduction of marijuana use among youth and adults. With a focus on reducing the public health impact of marijuana, this report offers recommendations with a goal of creating a healthier and safer Wisconsin.



### Summary of Recommendations

Recommended in:	Recommendation	Related Workgroups			
		C	LR	P	TR
<b>Cannabinoid Research Workgroup</b>	Recommendation 1: Cannabis, cannabinoid pharmaceuticals and cannabis/cannabinoid delivery systems should be subject to the same rigorous standards for approval that are applicable to other prescription medications and medical devices and should not be available for use by patients until such a time as they have been approved by the Food and Drug Administration (FDA).	✓	✓		
	Recommendation 2: The State and Federal government should encourage and promote further research and development focused on the study of specific pharmaceutical grade cannabinoid compounds and preparations (including whole plant preparations) for various clinical applications.	✓			
	Recommendation 3: Smoked cannabis is not a safe delivery system for cannabinoids, and should not be legalized in any form since it appears to have similar clinical efficacy via inhalation (vaporized route), sublingual, and oral routes which are safer, and that may have decreased abuse potential.	✓			
	Recommendation 4: Non-pharmaceutical grade oral formulations (“edibles”) and oral formulations are not approved by the FDA and should not be permitted. There is significant variability in dosing between samples, inconsistent distribution of cannabinoids and there are current FDA approved oral cannabinoids by prescription, in the form of Dronabinol (Marinol®) and Nabilone (Cesament®).	✓			
	Recommendation 5: Cannabis and cannabis extract(s) for use in individuals younger than age 21 should not be legalized in any form unless specifically FDA approved. A growing body of evidence links early cannabis exposure with neurobiological brain abnormalities, an increased risk of addiction, potential to be a gateway drug leading to other drug abuse, permanent neurocognitive decline, lower school performance and compromised lifetime achievement.	✓			
	Recommendation 6: Marijuana should not be legalized for personal, recreational use in the State of Wisconsin.			✓	
	Recommendation 7: Broad decriminalization of marijuana is not recommended. Instead, Wisconsin statute should be amended as follows: A) possession of marijuana (any resin extracted from the plant cannabis that contains THC) for personal use (up to 10 grams) and/or possession of marijuana paraphernalia in the absence of any other non-drug related charge will be a state <u>civil offense</u> (including first and subsequent offenses); B) marijuana possession (up to 10 grams) and/or possession of marijuana paraphernalia in presence of another non-drug related charge will be a <u>misdemeanor or an enhancer</u> to the underlining charge (including first and subsequent offenses), without any potential for incarceration in adults 18 and over. This would decrease inequality in the enforcement of the law of minority populations, minimize long term negative consequences due to incarceration for marijuana-possession offenders, and to utilize cost-savings to increase access to prevention programs and treatment for substance use disorders.			✓	
	Recommendation 8: Wisconsin should implement a more detailed and accurate tracking system to properly codify criminal and civil consequences for all marijuana (and other drug) related crimes within the CCAP database. At a minimum, the system should include a comparison of the time sentenced to the actual amount of time served in jail for a marijuana related crime, in order to produce meaningful data and track the associated costs. It also should be used to track ethnic, socioeconomic, or other conditions potentially related to arrests and sentencing, in order to identify and address possible disparities.			✓	
	Recommendation 9: Wisconsin courts should develop a system of support for offenders currently charged and convicted of marijuana possession.			✓	
	Recommendation 10: All employers should follow the United States Department of Labor’s Drug-Free Workplace Act of 1988.			✓	
<b>Legalities and Regulations Workgroup</b>					



**Prevention Workgroup**

Recommendation 11: Community groups, organizations and coalitions should implement evidence based prevention strategies that address known risk and protective factors for marijuana use.	✓		
Recommendation 12: Support coalitions as the vehicle through which communities will successfully prevent and reduce marijuana use.	✓		
Recommendation 13: Work to foster an environment locally that empowers young people not to use marijuana.	✓		
Recommendation 14: Provide information to employers, and especially supervisors, regarding signs, symptoms and consequences of marijuana use, as well as local resources for obtaining help for cannabis use disorders.	✓		
Recommendation 15: Make drugged driving prevention and enforcement a priority statewide.	✓		
Recommendation 16: Incorporate SBIRT (Screening, Brief Intervention and Referral to Treatment) as a tool for helping clients who may be experiencing problems resulting from marijuana or other substance use.	✓	✓	

**Treatment and Recovery Workgroup**

Recommendation 17: Expand adolescent substance use disorders treatment and recovery options across the state to allow timely access of appropriate level of care for all youth and young adults.			✓
Recommendation 18: Expand adult substance use disorders treatment and recovery options across the state to allow timely access of appropriate level of care for all residents.			✓
Recommendation 19: Substance use disorders treatment and recovery services for pregnant women should promote abstinence from marijuana during and after pregnancy to protect unborn and developing children and prevent drug-affected newborns and nursing infants.			✓
Recommendation 20: Research, evaluate and implement promising alternative diversion programs including substance use disorders treatment within the legal system.			✓
Recommendation 21: Provide substance use disorders treatment for persons while incarcerated and develop better linkages to improve the integration of services between criminal justice, primary medical care and treatment and recovery providers to ensure continuing care.	✓	✓	✓
Recommendation 22: Provide continuing educational opportunities for treatment and recovery providers in an effort to increase understanding of developing science with regard to cannabis use disorders including (but not limited to): <ul style="list-style-type: none"> <li>• Evidence-based treatment options and promising research,</li> <li>• Research findings regarding pharmacotherapies to assist in treatment,</li> <li>• Clinical innovations to use in the management of withdrawal symptoms,</li> <li>• The effect of marijuana use on the developing brain,</li> <li>• The impact of adverse childhood experiences and treatment approaches that reflect best practice in trauma-informed care.</li> </ul> Emerging research of best practices for adolescent and young adult specific recovery and support programs.			✓



## Frequently Used Acronyms

ACE	Adverse Childhood Experiences
ACLU	American Civil Liberties Union
AIDS	Acquired Immune Deficiency Syndrome
AED	Anti-epileptic drugs
AES	American Epilepsy Society
AODA	Alcohol and Other Drug Abuse
APA	American Psychiatric Association
AWY	Alliance for Wisconsin Youth
CADCA	Community Anti-Drug Coalitions of America
CBD	Cannabidiol
CCAP	Consolidated Court Automation Programs
CDC	Center for Disease Control and Prevention
CHS	Cannabis Hyperemesis Syndrome
CSAT	Center for Substance Abuse Treatment
CUD	Cannabis Use Disorder
CUO	Cannabis Use Onset
CWS	Cannabis Withdrawal Syndrome
DHS	Department of Health Services
DSM-5	Diagnostic and Statistical Manual for Mental Disorders, 5 <sup>th</sup> Edition
EAP	Employee Assistance Program
FDA	Food and Drug Administration
MDD	Major Depressive Disorder
NIDA	National Institute on Drug Abuse
NSDUH	National Survey on Drug Use and Health
PTSD	Post-Traumatic Stress Disorder
RMHIDTA	Rocky Mountain High Intensity Drug Trafficking Area
SAMHSA	Substance Abuse and Mental Health Services Administration
SBIRT	Screening, Brief Intervention and Referral to Treatment
SCAODA	State Council on Alcohol and Other Drug Abuse
SPF	Strategic Prevention Framework
SUD(s)	Substance Use Disorder(s)
TAD	Treatment Alternative and Diversion
THC	Delta-9-tetrahydrocannabinol
YRBS	Youth Risk Behavior Survey



## Appendix A: Endocannabinoid System

The endocannabinoid system is composed of an intricate network of neural pathways that are controlled by naturally occurring endogenous cannabinoids (known as endocannabinoids) created by the human body that produce their effects by interacting with the CB1 and CB2 receptors. The two endocannabinoids that have received the greatest amount of attention, however, are anandamide (N-arachidonylethanolamide, AEA) and 2-AG (2-arachidonoylglycerol) both of whose synthetic and degradation pathways have been well described. Endocannabinoids, like their plant derivatives, are highly lipid soluble (meaning that they dissolve in fat but not water) and act via the cannabinoid receptors as neuromodulator signals throughout the central and peripheral nervous system.

In fact, it is now understood that the CB1 and CB2 receptors are found on the pre-synaptic membrane of the neuron and that cannabinoids produce their effects via retrograde signal transmission in the nervous system, thus acting much like a dam would in a flowing river. In order to control the amount of water (neurochemicals) that flows downriver, a dam, (or a series of dams) known as synapses in the body, is built on the river that is controlled at each point by a person that sits upstream of the dam. Unfortunately, this person cannot “see” the effects of the water downstream and has no way of knowing whether or not s/he is allowing too much or too little water to flow downriver through the dam. In order to be able to let each of the dam operators know when to open or close their respective dam, a series of telephone lines is built from each dam to the one before it so that the dam operator downriver can tell the one upriver when to open and close the dam. The endocannabinoid system of the body functions much like these telephone lines to provide a way for the nerve cell “downstream” of the flow to communicate with the nerve cell “upstream” of the flow regarding when to open or close the dam to allow for the flow of neurotransmitters such as dopamine, serotonin, GABA, glutamate, or norepinephrine. In this manner, the endocannabinoid system is capable of modulating neurochemical flow throughout the central and peripheral nervous system

The effect of individual cannabinoids on this system depends on their differential activity at each of the cannabinoid receptors which are found in different densities and concentrations throughout the body. The CB1 receptor is primarily found in the central nervous system while the CB2 receptor is primarily found in the body's periphery and immunological system. Delta-9-tetrahydrocannabinol (THC), cannabidiol (CBD), and other phytocannabinoids (cannabinoids derived from plants) produce their psychological effects via the CB1 receptor, though many also stimulate the CB2 receptor to produce other effects. Laboratory synthesized cannabinoids (dronabinol, nabilone, and ajulemic acid for instance) work in much the same way as the endocannabinoids and phytocannabinoids but vary in potency and effect from THC depending on their chemical structure, route of administration, bioavailability, and differential activity at the CB1 and CB2 receptors. It is for this reason, that it is important to characterize and study each cannabinoid entity (including combinations of cannabinoids in different ratios such as the optimum ratio of THC to CBD for a given condition) for specific disease states to better elucidate clear medical indications and/or adverse effects. In order to accomplish this task, however, the chemical composition and purity of the cannabinoid(s) in question must be exactly known. Clinical studies using the cannabis plant or extracts from the plant are difficult to conduct because the exact composition of cannabinoids in each “batch” varies widely depending on factors such as the strain (genetics) of the cannabis plant utilized (cannabissearch.com, 2013); growing conditions for each of the plants (light, fertilizer, temperature, water, and humidity) which can cause variations in cannabinoid content even within a strain (Mahlberg & Hemphill, 1983) (Tipparat, Natakankitkul, Chamnivkaipong, & Chutiwat, 2011); effects of pesticide residues and fungal infestation (Wilkinson & D'Souza, 2014) (Verweij, Kerremans, Voss, & JF, 2000); the part of the plant cultivated (Hemphill, Turner, & Mahlber, 1980); and the confounding of a myriad of other phytocannabinoids (up to 100 described) in the cannabis plant, many of



whose exact effects are not well understood. Because of this variability, the evidence supporting the efficacy of cannabis as medicine varies substantially from study to study and in general falls short of the US Food and Drug Administration’s (FDA’s) standards for approval of other drugs currently in clinical use (including, it might be noted, a laboratory synthesized pill form of THC called dronabinol), (Wilkinson & D’Souza, 2014).

### The “Endocannabinoid Dam” Effect (Retrograde Signaling)

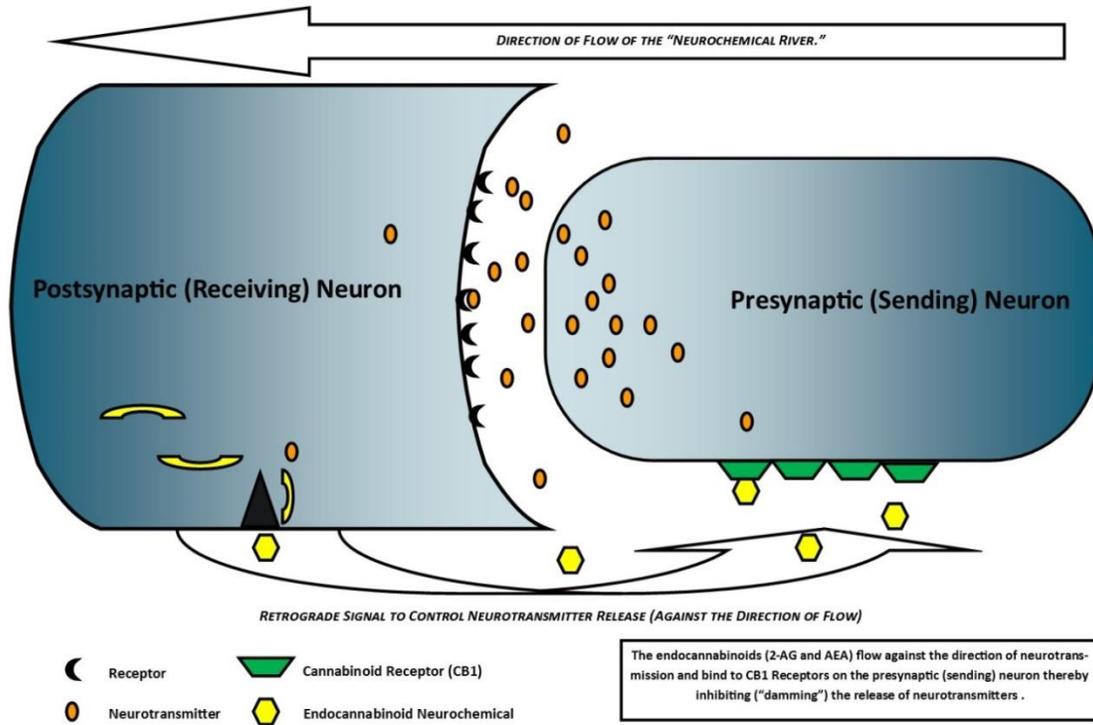


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## Appendix B: Potential Therapeutic Applications of Cannabis and Cannabinoids for Treatment of Disease

**GLAUCOMA** - Glaucoma is a disease of the eye that occurs due to increased pressure within the eye which can lead to destruction of the retina. An early study from the 1970's demonstrates reductions in intraocular pressures with marijuana. (Hepler & Frank, 1971) THC, cannabinal, and nabilone (Cesamet®) have been shown to be effective in lowering intraocular pressures in rabbits. (Chen, Matias, Dinh, & al., 2005) (Volkow, Baler, Compton, & Weiss, 2014) While physicians currently have numerous medications that are safe and effective to control glaucoma, further research into cannabinoid pharmaceuticals may be warranted to determine whether these agents provide additional benefits towards neuroprotection in addition to lowering intraocular pressures. (Nucci, Bari, Spano, & al., 2008) (Weinreb, Aung, & Medeiros, 2014) (Song, Huang, & Zang, 2015) (Yazulla, 2008).

**NAUSEA** - One of the first indications for use of cannabinoids in clinical medicine was the treatment of nausea and vomiting associated with chemotherapy. The first FDA approved cannabinoid product was an oral, synthetic delta-9-tetrahydrocannabinol (THC) preparation, dronabinol (Marinol®), approved in 1985 for the treatment of chemotherapy associated nausea and vomiting (Abbott Products, Inc., 2011). FDA approval was based on studies versus then-available anti-emetic medications which are not as effective as currently available medications for chemotherapy-associated nausea and vomiting, such as ondansetron (Barthwell, et al., 2010). More recently, in a study comparing dronabinol alone, ondansetron<sup>1</sup> alone, or a combination of dronabinol and ondansetron for delayed chemotherapy-induced nausea and vomiting, ondansetron and dronabinol were equally tolerated and effective but the combination did not produce any additional benefits over either alone (Meiri, et al., 2007). It should be noted, however, that long-term use of cannabis has also been associated with Cannabis Hyperemesis Syndrome (CHS), which results in bouts of abdominal pain, nausea, vomiting, and compulsive bathing in hot water (Suns & Zimmermann, 2013).

**SPASTICITY IN MULTIPLE SCLEROSIS** – Several recent studies have demonstrated the efficacy of specific cannabinoid formulation, nabiximols (Sativex®) for the treatment of intractable spasticity, neuropathic pain, and disturbed sleep in patients with multiple sclerosis (Arroyo, Vila, & Dechant, 2014) (Freidel, et al., 2015) (Flachenecker & Henze, 2014) (Syed, McKeage, & Scott, 2014). In fact, the data of specific cannabinoids for treatment of spasticity in multiple sclerosis is robust enough for the American Academy of Neurology, in their 2014 publication of evidence-based guidelines regarding complementary and alternative medicine for multiple sclerosis, to provide specific recommendations regarding the use of different cannabinoid formulations for treatment of Multiple Sclerosis Spasticity (MSS) and pain (Yadav, et al., 2014). **Smoked cannabis is not among the recommended dosage forms in the American Academy of Neurology recommendations.**

**EPILEPSY** - The potential anti-epileptic effects of cannabinoids are well documented in early preclinical trials of animal models dating back to the 1970's (Carlini, Leite, Tannhauser, & Berardi, 1973) (Izquierdo, Orsingher, & Berardi, 1973) (Karler, Cely, & Turkanis, 1973). No human studies were reported, however, until 1980 when a study of 15 individuals with temporal lobe seizures refractory to available medications were recruited to receive a cannabidiol-rich extract for epilepsy (Cunha, et al., 1980). The results of this study demonstrated promise in the use of CBD for epilepsy. Despite these encouraging results, however, it was not until Dr. Sanjay Gupta's CNN documentary regarding Charlotte's Web, a CBD-rich species of cannabis, aired in 2013 that interest in the use of CBD made its resurgence (Young, 2013). In this

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<sup>1</sup> Ondansetron (Zofran®) is a modern anti-nausea medication approved by the FDA in 1998, well after dronabinol, was already being utilized for chemotherapy-associated nausea and vomiting. Ondansetron is much more effective than anti-emetics that were available at the time that dronabinol was FDA approved in 1985.



documentary, the use of CBD on a child by the name of Charlotte appeared to completely eradicate her seizures despite repeated failures of currently available anti-epileptic drugs (AED's). As a result of this documentary, popular support for legalization of cannabis-based medicines (in particular cannabidiol-rich extracts) has significantly increased in the past three years. In fact, as a result of this documentary, several states (including Wisconsin) have legalized purified forms of CBD for use as a therapeutic agent to treat intractable childhood epilepsy **despite a lack of studies meeting the rigorous criteria required for drug approval by the FDA** (State of Wisconsin, 2014).

More recent data is now becoming available regarding the use of cannabidiol oil, and cannabis extracts rich in cannabidiol oil, for epilepsy, particularly in children with intractable seizure disorders. In a recent open-label study presented at the American Epilepsy Society (AES) 68<sup>th</sup> Annual meeting in December, 2014 that utilized 98% pure cannabidiol oil, developed by GW Pharmaceuticals, developed under the brand name, Epidiolex®, demonstrated a greater than 50% reduction in seizures in approximately 1/3 of patients (39%) (Devinsky, et al., 2014).

In a second study, also presented at the same conference, patients using oral cannabis extracts from different cannabis plant strains found similar results with approximately one third of patients reporting a seizure reduction of 50% or more (Press, Knupp, & Chapman, 2014). These data are encouraging for the development a new class of anti-epileptic medications for treatment of epilepsy, but the results are by no means the outstanding results expected by proponents of CBD and marijuana in the popular media that has driven legalization and widespread availability of these substances. As Dr. Chapman, the primary investigator of the second study using marijuana, states eloquently in an interview with Medscape, "I would say be cautious. Don't expect miracles. Families have been led to believe that marijuana products are more effective than anything else but our data do not suggest that this is necessarily true" (Hughes, 2014).

In addition to the efficacy data, however, it is important to document the side effect profile and drug-to-drug interactions of any new cannabinoid therapeutic, as treatment of epilepsy typically requires a combination of agents to achieve adequate control. In the open label study with Epidiolex®, for example, the primary adverse effects were classified as mild to moderate and primarily included somnolence, fatigue, weight changes, diarrhea, and changes in appetite (Devinsky, et al., 2014).

Additional questions remain regarding use of cannabinoids and/or cannabis for epilepsy include the following: 1) questions regarding the appropriate dose to maximize benefits and reduce risk, 2) differential efficacy of combination cannabinoid products vs single agent formulations (e.g. cannabidiol with other cannabinoids vs cannabidiol by itself vs whole cannabis extract for epilepsy), 3) short and long term adverse effects of treatment particularly in children, 4) is there development of tolerance for seizure efficacy over time, and 5) at what point in the natural history of epilepsy are cannabinoids most beneficial and should they be reserved solely as a last resort. There are currently several ongoing studies that will hopefully answer many of these questions.

As the data of cannabidiol now demonstrates, cannabidiol oil is not the panacea that popular media coverage has made it out to be, and in fact may actually have benefits on par with many of the currently available AED's, albeit with possible differential efficacy in some rare forms of epilepsy. It is important that politicians and the general public allow these studies to be completed prior to advocating widespread availability of cannabis and cannabinoids for any condition.

**CHRONIC PAIN** - The pain relieving effects of cannabis have been noted for centuries. It is only in recent years, however, that the neuromodulatory effects of the endocannabinoid system on pain



reception have started to be better understood (Walker, Huang, Strangman, Tsou, & Sanudo-Pena, 1999) (Ulugol, 2014).

Recent studies have demonstrated the benefits of cannabinoid pharmaceuticals in alleviating cancer pain, chronic non-malignant neuropathic pain, and neuropathic pain. Even very low levels of vaporized THC (1.29%) provide analgesic benefit, (Wilsey, et al., 2013) indicating that currently available cannabis preparations containing higher level THC content (often in the double digits) may not be necessary, and have been associated with greater neuropsychiatric side effects.

In at least one study comparing oral dronabinol (synthetic THC that is currently already available by prescription in all states) to smoked marijuana in daily marijuana smokers, decreases in pain sensitivity and pain tolerance were equivalent in both groups, but the effect lasted longer in the dronabinol group with less abuse-related subjective effects (drug likability/ subjective high) than with smoked marijuana (Cooper, Comer, & Haney, 2013). This latter study suggests that at least one currently available oral preparation of a synthetic cannabinoid pharmaceutical is as effective, with a longer duration of action, as smoked marijuana for treatment of pain, with a lower abuse potential. This study begs the question: why legalize herbal marijuana if a prescription alternative is already available?

**INFLAMMATION** - Cannabinoids have been shown to have significant anti-inflammatory effects as demonstrated by their ability to cause cell death (which may be useful for the treatment of cancer), their ability to prevent cells from multiplying (also potentially helpful in the treatment of cancer), and their ability to block the production of chemicals that produce inflammation in the body (Nagarkatti, Pandey, Rieder, Hegde, & Nagrkatti, 2009). Cannabidiol has especially garnered attention for this indication due to its lack of psychoactive adverse effects and early animal models that suggest potential therapeutic benefits for the treatment of rheumatoid arthritis (Zuardi, 2008). Nabiximols (Sativex®) has also demonstrated promise as a potential treatment option for rheumatoid arthritis in an initial concept study published in Rheumatology in 2006 (Blake, Robson, Ho, Jubb, & McCabe, 2006). Ajulemic Acid (AJA), a non-psychoactive, marijuana-derived, synthetic cannabinoid has also shown promise in treatment of rheumatoid arthritis and other painful conditions (William Reed Business Media, SAS, 2002) (Bidingier, et al., 2003) (Burststein, Karst, Schneider, & Zurier, 2004) (Burststein S. , 2007).

Given the role of endocannabinoids in modulating immunological function via the CB2 receptor and their influence within the inflammatory cascade, it is not surprising that cannabinoid medications provide anti-inflammatory benefits, but research in this area is still in its infancy and further studies are necessary to elucidate the exact role that cannabinoid pharmaceuticals may play in immune mediated diseases.

**AIDS – ASSOCIATED ANOREXIA AND WASTING SYNDROME** - Cannabis has been thought to increase appetite and weight when ingested or smoked on a regular basis in patients with AIDS-associated anorexia and wasting syndrome. (D'Souza, Matson, Grady, & al., 2012) More recent studies, however, have failed to demonstrate a clear benefit on morbidity and mortality for cannabinoids in patients with AIDS who are receiving adequate antiretroviral therapy and data on therapeutic benefit are inconclusive. (Lutge, Gary, & Siegfried, 2013) The only FDA-approved cannabinoid medication for this indication is dronabinol (Marinol®). (Abbott Products, Inc., 2011).

**POST-TRAUMATIC STRESS DISORDER (PTSD)** - The endocannabinoid system may play a crucial role in allowing the brain to adapt to stressful situations by promoting extinction of the fear response associated with such situations, particularly when combined with other behavioral modalities such as cognitive behavioral therapy (Singewald, Schmuckermair, Whittle, Holmes, & Ressler, 2015). This type of pharmacological activity could have profound clinical implications for some psychiatric conditions,



particularly with respect to disease states that occur due to imbalances in the brain's ability to control severe stressors such as in PTSD, phobias, anxiety, and panic disorder.

In PTSD, especially, the fear response becomes pathologically generalized to many situations and is associated with symptoms of re-experiencing the trauma, nightmares, insomnia, and a constant state of hyper-autonomic arousal suggesting that the process of fear extinction (diminution in the fear response after the danger has passed) is not functioning appropriately. Early studies have demonstrated that the endocannabinoid system modulates neuronal excitability in stressful situations (Singewald, Schmuckermair, Whittle, Holmes, & Ressler, 2015). In at least one study, the levels of the endocannabinoid, anandamide, were shown to be significantly suppressed in individuals with PTSD, suggesting dysregulation of the endocannabinoid system (Neumeister, et al., 2013).

In a recent pre-clinical open label study of add-on oral THC for PTSD, the intervention demonstrated statistically significant improvements in global symptoms of severity, sleep quality, frequency of nightmares, and hyper-arousal symptoms with only mild side effects (Roitman, Mechoulam, Cooper-Kazaz, & Shalev, 2014). While cannabinoid therapeutics show promise as adjunctive treatments for PTSD, larger and better-controlled clinical trials are necessary before such treatment can be recommended on a broader scale, particularly when the potential long-term consequences of cannabinoid use are taken into account.

Further, it is important to note that chronic use of recreational marijuana, which typically has high levels of THC, is linked with poorer affective functioning, including altered amygdala response to emotion (Gruber, Rogowska, & Yurgelun-Todd, 2009), abnormal amygdala structure (McQueeney et al., 2011), and reduced frontolimbic white matter quality (Shollenbarger, Price, Wieser, & Lisdahl, 2015) – these brain abnormalities are associated with increased depressive symptoms and apathy in young adults. Therefore, treatments for chronic PTSD must use low dose THC that will not result in long-term down-regulation of the endogenous cannabinoid system.



## Appendix C: Adverse Effects of Marijuana

**CARDIOVASCULAR ADVERSE EFFECTS** - The first description of the effects of cannabis on the cardiovascular system were published in 1972 (Beaconsfield, Ginsburg, & Rainsbury, 1972). This initial study demonstrated that cannabis increases heart rate and limb flow via beta-adrenergic vascular systems and recommended caution with administration of vasoactive drugs and anesthesia in patients who had recently smoked marijuana.

More recent studies suggest that smoked cannabis may increase mortality in patients with a previous history of acute myocardial infarction. In a case-control study by Mittleman, et al., in patients with previous history of myocardial infarction, cannabis use was associated with a 4.8 times increased risk of a myocardial infarction within the first hour after use (Mittleman, Lewis, Maclure, Sherwood, & Muller, 2001). A more recent study also demonstrated a trend towards increased mortality (29% increase in mortality) among habitual marijuana users with known cardiovascular disease when compared with non-users, over an 18 year period after a myocardial infarction, though the results of this study did not reach nominal statistical significance (Frost, Mostofsky, Rosenblum, Mukamal, & Mittleman, 2013).

In addition to an increased risk of mortality in habitual users with known cardiovascular disease, there is growing evidence that cannabinoid use, especially high-dose, frequent cannabis or high potency cannabinoids may increase the risk of stroke, even among young individuals (Freeman, et al., 2013) (Wolff, Armspach, Lauer, & al., 2013). In addition to the cannabinoids, it is well documented that a large number of individuals who smoke cannabis also use tobacco products, which itself increases the risk of stroke. In a recent study, for example, investigators described an association between what they termed “the cannabis lifestyle,” which included tobacco use in 88% of the cannabis-use population, and an increased risk of ischemic stroke (Barber, et al., 2013).

Once again, these preliminary studies demonstrate a clear dose and potency dependent relationship between cannabinoid and/or cannabis use and cardiovascular and cerebrovascular disease. Future studies are still necessary to determine whether smaller doses, lower potency cannabinoids, or CB2-specific cannabinoids (such as cannabidiol) may have a differential neuro-protective effect that is reversed at higher doses or with greater potency. Recent preliminary studies provide support for this assertion of a differential cannabinoid effect with mounting evidence that cannabidiol may actually provide protection against stroke and heart attacks (Mishima, et al., 2005) (Stanley, Hind, & O'Sullivan, 2012). Further research is still necessary.

**PULMONARY ADVERSE EFFECTS** - The pulmonary effects of smoked cannabis have been well described. Cannabis is associated with inflammation of the large airways, hyperinflation of the lungs, and increased airway resistance, all findings consistent with chronic bronchitis, a condition that is more common in marijuana smokers than non-smokers (Volkow, Baler, Compton, & Weiss, 2014). Smoked marijuana also appears to compromise the immunological function of the lungs resulting in an increased risk of respiratory tract infections and pneumonia in chronic cannabis smokers (Owen, Sutter, & Albertson, 2014).

In addition to respiratory symptoms, because cannabis smoke is qualitatively similar to tobacco smoke with twice as many carcinogenic polyaromatic hydrocarbons and because the quantity of smoke inhaled with cannabis use is greater due to it being smoked without a filter; (Hoffmann, Brunnerman, Gori, & Wynder, 1975) in theory at least, it is reasonable to expect that smoked cannabis produces a significant increase in the risk of oral and lung cancers. In practice, however, this has been difficult to prove because the majority of individuals who smoke cannabis regularly also use tobacco products (Hall & Degenhardt, 2009). As a result, in most studies that have shown an association between cannabis use



and cancer, the effect essentially disappears when you control for tobacco use (Hall & Degenhardt, 2009). It should be noted that it was not until larger scale population studies were conducted with tobacco products that the relationship between smoked tobacco and lung cancer became evident.

**RENAL ADVERSE EFFECTS** - While cannabis and pharmaceutical-grade, investigational cannabinoids have not been associated with acute or chronic kidney injury, synthetic, high-potency cannabinoids (K2, Spice) have been associated with numerous case reports of acute kidney injury (AKI) (Bhanushali, Jain, Fatima, Leisch, & Thornley-Brown, 2012). It is unclear at this time whether or not the synthetic cannabinoids themselves, or some adulterant is responsible, though a CDC investigation into a multistate outbreak determined that a novel fluorinated synthetic cannabinoid (XLR-11) was a common finding in many of the cases (Centers for Disease Control and Prevention, 2013). Additional epidemiological data and investigational studies will need to be conducted to determine whether high potency synthetic cannabinoids may play a role in the development of AKI.

**HEPATOBIILIARY AND GASTROINTESTINAL ADVERSE EFFECTS** - As is the case with kidney disease, cannabis and investigational pharmaceutical-grade cannabinoids have not been associated with liver toxicity. The synthetic cannabinoids K2/Spice, however, have been implicated in at least one case of toxic hepatitis.

As for gastrointestinal side effects, and despite its widespread use as an anti-nausea medication during cancer chemotherapy, cannabis and cannabinoids are clearly associated with a Cannabis Hyperemesis Syndrome (CHS) that has been well-described in the literature (Suns & Zimmermann, 2013) (Ukaigwe, Karmacharya, & Donato, 2014) (Simonetto, Oxentenko, Herman, & Szostek, 2012) (Lacopetti & Packer, 2014). The syndrome is characterized by recurrent bouts of abdominal pain, nausea, vomiting, and compulsive bathing in hot water in patients with a history of long-term cannabis use. The condition appears to be underdiagnosed and is frequently confused with cyclic vomiting syndrome. Unfortunately, no standard evidence-based management strategy currently exists for treatment of CHS but supportive care and discontinuation of cannabis appear to provide good symptomatic relief (Suns & Zimmermann, 2013). The condition resolves with discontinuation of cannabis but has been shown to recur with reinstatement of cannabis use. Long-term treatment requires abstinence from cannabinoid pharmaceuticals.

**VIOLENCE POTENTIAL** - Popular media has also propagated the idea that some individuals who smoke marijuana will become acutely hostile, violent, and aggressive. The scientific literature does not support this myth. Epidemiological studies do not demonstrate any correlation between cannabis use and violent crimes, except as they are associated with illegal drug trafficking (Carroll, 2015). In fact, in an epidemiological study regarding marijuana use and domestic violence, the risk of partner violence was actually lower among marijuana users than the general population (Smith, et al., 2014). As such, at the current time it does not appear that cannabis, per se, increases the risk for interpersonal violence to any significant degree.



## Appendix D: Drug -Free Workplace Act of 1988 Requirements for Organizations

All organizations covered by the Drug-Free Workplace Act of 1988 are required to provide a drug-free workplace by taking the following steps:

1. **Publish and give a policy statement** to all covered employees informing them that the unlawful manufacture, distribution, dispensation, possession or use of a controlled substance is prohibited in the covered workplace and specifying the actions that will be taken against employees who violate the policy.
2. **Establish a drug-free awareness program** to make employees aware of a) the dangers of drug abuse in the workplace; b) the policy of maintaining a drug-free workplace; c) any available drug counseling, rehabilitation, and employee assistance programs; and d) the penalties that may be imposed upon employees for drug abuse violations.
3. **Notify employees** that as a condition of employment on a Federal contract or grant, the employee must; a) abide by the terms of the policy statement; and b) notify the employer, within five calendar days, if he or she is convicted of a criminal drug violation in the workplace.
4. **Notify the contracting or granting agency** within 10 days after receiving notice that a covered employee has been convicted of a criminal drug violation in the workplace.
5. **Impose a penalty on—or require satisfactory participation** in a drug abuse assistance or rehabilitation program by—any employee who is convicted of a reportable workplace drug conviction.
6. Make an ongoing, **good faith effort to maintain a drug-free workplace** by meeting the requirements of the Act.



### Appendix E: Adverse Childhood Experiences

Adverse childhood experiences (ACE) are stressful or traumatic experiences during childhood that include abuse, neglect and household dysfunction. Household dysfunction is described as growing up with substance abuse, mental illness, parental discord, crime in the home or witnessing domestic violence. Living with ACEs results in toxic stress that can harm a child’s brain. It also increases the child’s risk of health and social problems that follow him or her into adulthood. Children living with household members that use marijuana or other substances are starting life with at least one ACE.

The original ACE study was conducted by the Centers for Disease Control and Prevention in collaboration with the Kaiser Permanente, a health maintenance organization in California. The results were surprising, finding significant correlations between the number of ACEs experienced as a child and his or her adult health and well-being. The original and subsequent ACE studies, including studies conducted in Wisconsin, confirm with scientific evidence that adversity during development increases the risk of physical, mental and behavioral problems later in life. ACEs have been identified as a leading cause of health and social problems in our nation. ([http://www.ajpmonline.org/article/S0749-3797\(98\)00017-8/pdf](http://www.ajpmonline.org/article/S0749-3797(98)00017-8/pdf)) In total, 9,039 Wisconsin residents were surveyed in 2011 and 2012. The data shows that approximately 58% of Wisconsin residents have experienced an ACE. Among those who have experienced ACEs, 61% experienced more than 1, and 25% have experienced 4 or more. (Children's Trust Fund, Children's Hospital of Wisconsin. Wisconsin ACE Brief 2011 and 2012 Data. 2014)

Children living with ACEs experience stress to the extent that it becomes toxic. Of particular concern is the negative impact of ACEs on the brain development of a child. An infant’s brain is not fully developed at birth and depends upon life experience to develop the brain’s complex neural networks. If those life experiences consist of continuous stress or trauma, the stress hormones become toxic to brain cells. This toxicity makes it difficult for the child’s brain cells to develop healthy neural networks and can even cause brain cells to die. Brain development continues through adolescence and early adulthood. Healthy childhood experiences and moderate, predictable controlled stressors cause the brain to adapt and develop good coping skills. Adverse childhood experiences alter the body’s stress management system and brain architecture, leading to negative outcomes such as poor health, lower levels of school and work success and lower socioeconomic status in adulthood.

**What is an ACE?**  
 An adverse childhood experience is a traumatic experience prior to the age of 18. The ACE module in the Wisconsin Behavioral Risk Factor Survey consists of eight survey questions.  
 To assess the presence of ACEs, adults in Wisconsin are asked about the following:

1. Recurrent physical abuse
2. Emotional abuse
3. Sexual abuse
4. Alcohol and/or drug abuser in the household
5. An incarcerated household member
6. A household member who was chronically depressed, mentally ill, institutionalized or suicidal
7. Violence between adults in the home
8. Parental divorce or separation

The ACE score is a measure of cumulative exposure to adverse childhood conditions. Exposure to any single ACE condition is counted as one ACE or point.

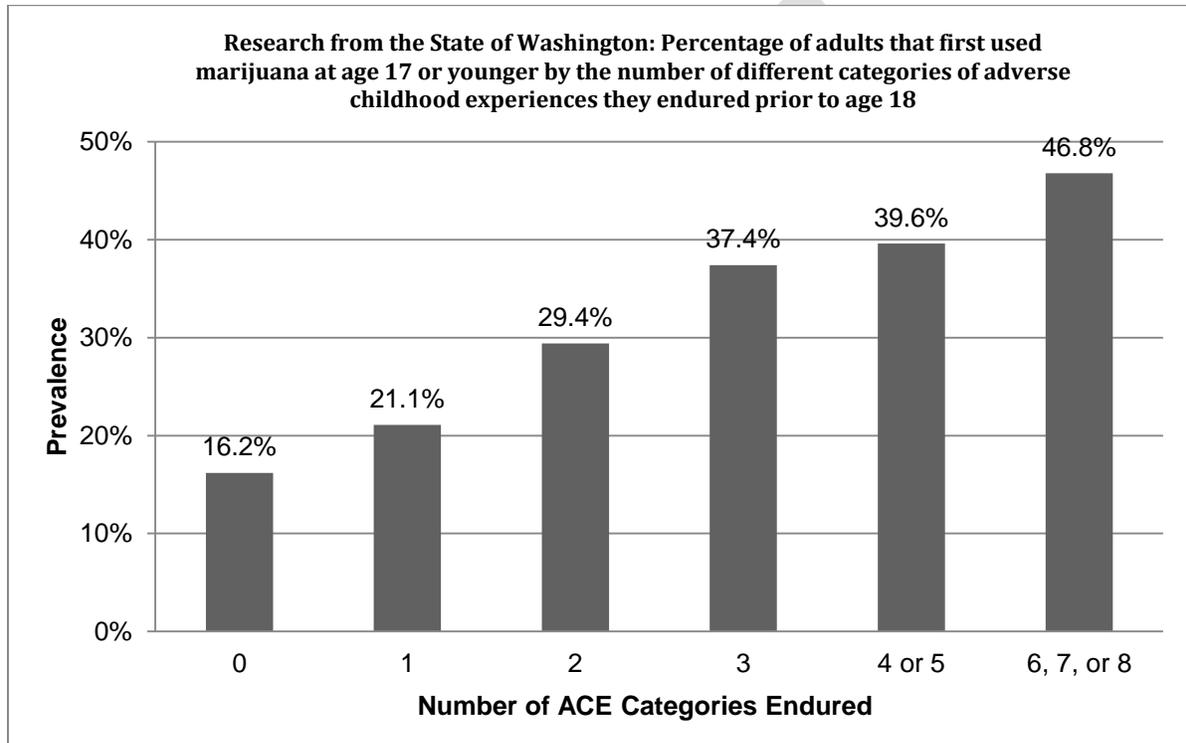
Source: “Adverse Childhood Experiences in Wisconsin: Findings from the 2010 Behavioral Risk Factor Survey,” produced by Children’s Trust Fund, Children’s Hospital and Health System and Child Abuse Prevention Fund.  
<http://www.wichildrenstrustfund.org/index.php?section=adverse-childhood>

The use and abuse of marijuana and other substances by a parent or caregiver is recognized as an ACE, which requires support or intervention to ensure healthy child development and prevent maladaptive and risky behaviors. Drug use does not mean that a parent will be a bad parent, but drug use by a parent or other caregiver may cause serious problems in their children’s lives. The Substance Abuse and Mental Health Services Administration cites research that has demonstrated a strong graded (i.e., dose-response) relationship between ACEs and a variety of substance use-related behaviors, including early initiation of alcohol use, early smoking initiation, prescription drug use and lifetime illicit drug use.



(<http://captus.samhsa.gov/prevention-practice/targeted-prevention/adverse-childhood-experiences/2>)

What all this means is that our children who have endured ACEs are more likely to choose fast, effective ways to alleviate their anxiety, depression, difficulty concentrating, etc., rather than developing necessary coping skills that will serve them well throughout life. Marijuana is mistakenly perceived by youth and many adults as a safe way to find relief from their problems or discomfort with a temporary, chemically induced sensation. ACE studies provide conclusive evidence that for many adults, ACEs in their young lives follow them into adulthood in the form of physical, mental and behavioral health struggles. What is still unknown and of great concern is the full impact of marijuana on the child’s developing brain.



Source: Anda, R. F., & Brown, D. W. (2010). Adverse childhood experiences and population health in Washington: The face of a chronic public health disaster. *The Washington State Family Policy Council*. Accessed online: [www.acesconnection.com](http://www.acesconnection.com)



## **Appendix F: Resources to Assist with Implementing Prevention Recommendations**

Prevention planners and practitioners are encouraged to explore any of the resources provided in this appendix. Most of the websites listed contain information, guides and tools that can be of value to any marijuana prevention effort.

### **Resources for Community Groups, Organizations and Coalitions**

**Community Anti-Drug Coalitions of America (CADCA)** has demonstrated that when all sectors of a community come together – social change happens through the coalition model. CADCA is the premier membership organization representing those working to make their communities, safe, healthy and drug-free. We have members in every U.S. state and territory and working in 18 countries around the world. They also serve as a center for training, technical assistance, evaluation, research and capacity building for community anti-drug coalitions throughout the United States.

Visit: <http://www.cadca.org/>

SAMHSA's **Center for the Application of Prevention Technologies (CAPT)** is a national substance abuse prevention training and technical assistance (T/TA) system dedicated to strengthening prevention systems and the nation's behavioral health workforce. Resources are available to enhance the capacity of prevention practitioners on such topics as

- The Strategic Prevention Framework
- Evidence-based prevention
- Environmental prevention strategies for substance abuse prevention
- Tools to help practitioners prevent youth marijuana use in their states and communities

Visit: <http://captus.samhsa.gov>

**Alliance for Wisconsin Youth (AWY)** is a program of the Wisconsin Department of Health Services, Division of Mental Health and Substance Abuse Services, in the Bureau of Prevention, Treatment and Recovery. The Alliance's purpose is to enhance and support the capacity of member coalitions in their substance abuse prevention and youth development work. Over 80 Wisconsin coalitions are members of the Alliance.

Visit: <http://www.allwisyouth.org>

**What Works, Wisconsin** is a project of the University of Wisconsin-Madison's School of Human Ecology and the University of Wisconsin-Extension's Family Living Programs. Initiated in 2004, the *What Works* project focuses on distilling the latest scientific knowledge on effective policies, practices, and programs, including "evidence-based programs," for youth and their families, schools and communities.

Visit: <http://fyi.uwex.whatworkswisconsin/> and select "Evidence-based Program Registries" from the menu.

### **Resources for State and Municipal Governments and Lawmakers**

**Benefit-Cost Results** provides findings from cost benefit analysis conducted by the Washington State Institute for Public Policy on 200 effective prevention, early intervention and treatment programs.

Visit: [www.wsipp.wa.gov/](http://www.wsipp.wa.gov/)

**Learn About Marijuana: Science-based Information for the Public** is an online resource provided by the Alcohol and Drug Abuse Institute of the University of Washington. The site features easy-to-read factsheets on a number of topics including marijuana's impact on adolescent development, mental health, physical health, driving, human performance, and much more.

Visit: <http://learnaboutmarijaunawa.org>



**What Works for Health: Policies and Programs to Improve Wisconsin’s Health** provides communities with information to help select and implement evidence-informed policies, programs, and system changes that will improve the variety of factors that affect health. The research underlying this site is based on a model of population health that emphasizes the many factors that can make communities healthier places to live, learn, work and play. In What Works for Health, project analysts assess strategies that could improve health through changes to health behaviors, social and economic factors, clinical care, and the physical environment.

Visit: <http://whatworksforhealth.wisc.edu/>

#### Positive Youth Development Resources

The **Family and Youth Services Bureau** and its **National Clearinghouse on Families and Youth** provide a wide array of resources, toolkits, and tutorials for providing positive youth development opportunities at the community level. **Building a Youth Program** is an online toolkit consisting of video-based guides that walk individuals and groups through the fundamentals of launching a nonprofit organization that will serve youth.

Visit: <http://ncfy.acf.hhs.gov>

#### Safe Communities

**Celebrate Safe Communities (CSC)** is an initiative of the National Crime Prevention Council. It was developed in 2008 in partnership with the Bureau of Justice Assistance at the U.S. Department of Justice and the National Sheriffs’ Association (NSA) to promote crime prevention in local communities across the country. A CSC event can be anything large or small, such as an anti-drug march, a community safety fair, or a neighborhood cleanup. When you register your event, you will have access to free downloadable crime prevention resources, training programs, and other incentives.

Visit: [www.ncpc.org/programs/celebrate-safe-communities/](http://www.ncpc.org/programs/celebrate-safe-communities/)

#### Resources for School Districts and Post-Secondary Education Providers

##### Resources for K-12

The **Wisconsin Safe and Healthy Schools Training & Technical Assistance Center** builds the capacity of Wisconsin public school districts to implement programs that effectively prevent and intervene in alcohol and other drug abuse and violent behavior among students in order to reduce these barriers to learning.

Visit: [www.wishschools.org](http://www.wishschools.org)

The **Department of Public Instruction’s (DPI) AODA program**, first authorized under Chapter 331, Laws of 1979, is designed to help local school districts utilize their staff and program resources to develop comprehensive AODA programs. DPI’s AODA Assessment Tool is an evidence-based resource that can help a district or individual school identify gaps/needs in their AODA programming.

Visit: [http://sspw.dpi.wi.gov/sspw\\_aodaprog](http://sspw.dpi.wi.gov/sspw_aodaprog)

**Collaborative for Academic, Social, and Emotional Learning (CASEL)** is one of the leading organizations in advancing the development of academic, social and emotional competence for all students. Their mission is to help make evidence-based social and emotional learning (SEL) an integral part of education from preschool through high school. Through research, practice and policy, CASEL’s website provides an online guide to effective social and emotional learning programs.

Visit: [www.casel.org/guide](http://www.casel.org/guide)

The **National Center on Safe Supportive Learning Environments (NCSSLE)** provides resources for professionals at all education levels: Pre-K/Elementary School; Middle/High School; and Higher Education. NCSSLE is funded by the U.S. Department of Education’s Office of Safe and Healthy Students



to help address such issues as bullying, harassment, violence, and substance abuse. Their website includes information about the Center's training and technical assistance, products and tools, and latest research findings.

Visit: <http://safesupportivelearning.ed.gov/>

**Search Institute** has been a leader and partner for organizations around the world in discovering what kids need to succeed. Their research, resources, and expertise help organization, schools and community coalitions solve critical challenges in the lives of young people. Search Institute's 40 Developmental Assets framework of strengths and supports is widely respected, user-friendly approach to positive youth development.

Visit: [www.search-institute.org](http://www.search-institute.org)

#### Resources for Post-Secondary

The **National Center on Safe Supportive Learning Environments** cited above also provides training and technical assistance, products and tools, and current research for post-secondary schools and institutions. The following resources may be helpful to post-secondary schools and institutions wishing to survey students to measure attitudes and behaviors around marijuana use and other substances.

The **ACHA-National College Health Assessment (NCHA)** is a nationally recognized research survey that can assist you in collecting precise data about your students' health habits, behaviors, and perceptions.

Visit: [www.acha-ncha.org](http://www.acha-ncha.org)

Indiana Prevention Resource Center's Indiana College Substance Use Survey

Visit: [www.drugs.indiana.edu/indiana-college-survey/substance-use-survey](http://www.drugs.indiana.edu/indiana-college-survey/substance-use-survey)

#### Resources for Parents, Guardians, and Other Caring Adults

**National Institute on Drug Abuse** provides the latest science-based information about the health effects and consequences of drug abuse and addiction and resources for talking with kids about the impact of drug use on health. NIDA's site also features **Family Checkup: Positive Parenting Prevents Drug Abuse**, an evidence-based resource for parents.

Visit: [www.drugabuse.gov/parents-educators](http://www.drugabuse.gov/parents-educators)

**Partnership for Drug-Free Kids** is nonprofit organization dedicated to reducing teen substance abuse and helping families impacted by addiction. The Partnership translates the science of teen drug use and addiction for families, providing parents with direct support to prevent and cope with teen drug and alcohol abuse. Among the many resources available on their website, the **Marijuana Talk Kit** is specifically designed to assist parents in having meaningful, productive conversations with their teen about marijuana.

Visit: [www.drugfree.org](http://www.drugfree.org)

#### Resources for Employers

**Marijuana in the Workplace: Guidance for Occupational Health Professionals and Employers.** A joint guidance statement of the American Association of Occupational Health Nurses and the American College of Occupational and Environmental Medicine.

Visit: [www.acoem.org/Guidance\\_Statements.aspx](http://www.acoem.org/Guidance_Statements.aspx)

**SAMHSA's The Division of Workplace Programs (DWP)** provides oversight for the Federal Drug-Free Workplace Program, to eliminate illicit drug use in the federal workforce. DWP's website provides the downloadable Drug-free Workplace Toolkit.

Visit: [www.samhsa.gov/workplace](http://www.samhsa.gov/workplace)



**Resources for Health Care Professionals, Social Service Providers, and other Youth-serving Professionals**

**American Society of Addiction Medicine (ASAM)** is dedicated to increasing access and improving the quality of addiction treatment, educating physicians and the public, supporting research and prevention, and promoting the appropriate role of physicians in the care of patients with addiction.

Visit: [www.asam.org](http://www.asam.org)

Information on **SBIRT: The SAMHSA-HRSA Center for Integrated Health Solutions (CIHS)** promotes the development of integrated primary and behavioral health services to better address the needs of individuals with mental health and substance use conditions, whether seen in specialty behavioral health or primary care provider settings.

Visit: [www.integration.samhsa.gov/clinical-practice/SBIRT](http://www.integration.samhsa.gov/clinical-practice/SBIRT)

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## Appendix G: Principles of Adolescent Substance Use Disorder Treatment

The National Institute on Drug Abuse (NIDA) wrote *Principles of Adolescent Substance Use Disorder Treatment: A Research-Based Guide* (January 2014) that outlines the principles and key components of creating and sustaining a comprehensive adolescent substance use treatment program. These principles are:

- Adolescent substance needs to be identified and addressed as soon as possible.
- Adolescents can benefit from a drug abuse intervention even if they are not addicted to a drug.
- Routine annual medical visits are an opportunity to ask adolescents about drug use.
- Legal interventions and sanctions of family pressure may play an important role in getting adolescents to enter, stay in and complete treatment.
- Substance use disorder treatment should be tailored to the unique needs of the adolescent.
- Treatment should address the needs of the whole person, rather than just focusing on his or her drug use.
- Behavioral therapies are effective in addressing adolescent drug use.
- Families and communities are important aspects of treatment.
- Several evidence-based interventions for adolescent drug abuse seek to strengthen family relationships by improving communication and improving family members' ability to support abstinence from drugs.
- In addition, members of the community (such as school counselors, parents, peers, and mentors) can encourage young people who need help to get into treatment – and support them along the way.
- Effectively treating substance use disorders in adolescents requires also identifying and treating any other mental health conditions they may have.
- Sensitive issues such as violence and child abuse or risk of suicide should be identified and addressed.
- It is important to monitor drug use during treatment.
- Staying in treatment for an adequate period of time and continuity of care afterward are important.



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