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# Learning Objectives

- Identify factors that affect drug response in older adults.
- List medications and substances that can impair driving and list their common side effects.
- Identify methods to improve driving safety in older adults.

# Case Scenario

- GG is a 68 year-old woman who presents to her primary care doctor for a follow-up visit.
- She has a history of lung cancer (now in remission), chronic low back pain, chronic kidney disease, hepatitis C, osteoporosis, urinary incontinence, anxiety, and depression.
- Her husband just bought her a new car, and she would like to know if it safe for her to drive on her current medications.

# Case Scenario (cont'd)

- Her current medications include:
  - Depression
    - Aripiprazole (Abilify®) 15 mg by mouth every day
    - Bupropion SR (Wellbutrin®) 100 mg by mouth twice a day
  - Osteoporosis
    - Calcium carbonate 500 mg by mouth twice a day
    - Vitamin D 1000 IU by mouth once a day
  - Anxiety
    - Diazepam (Valium®) 10 mg by mouth three times a day
  - Chronic pain
    - Gabapentin (Neurontin®) 1200 mg by mouth three times a day
    - Ibuprofen 800 mg by mouth every 6 hours
  - Urinary incontinence
    - Tolterodine (Detrol®) 2 mg by mouth twice a day

## Case Scenario (cont'd)

- GG reports drinking 1 glass of red wine each night with dinner and admits to smoking marijuana on occasion for chronic pain and anxiety.
- Upon review of systems, GG reports the following symptoms:
  - Blurry vision, impaired balance, memory impairment, constipation, and decreased urination

## Case Scenario (cont'd)

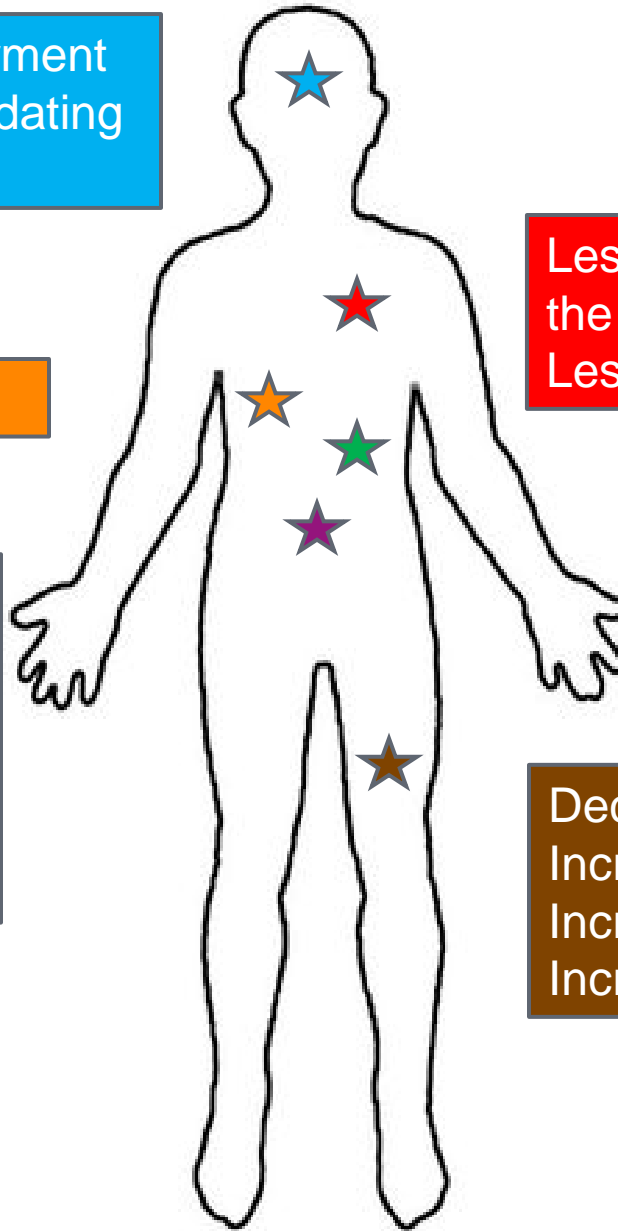
- What medications are contributing to GG's current symptoms?
- What are the effects associated with combining alcohol and marijuana with her current medications?
- Is it safe for GG to drive?

# Factors Affecting Drug Response in Older Adults

Increased cognitive impairment  
Increased sensitivity to sedating drugs

Slower drug metabolism

Decreased drug absorption  
Delayed gastric emptying  
Increased risk of constipation, ulcers



Less binding sites for drugs in the blood  
Less volume of distribution

Decreased drug clearance  
Increased risk of drug-induced kidney damage

Decreased muscle mass  
Increased body fat  
Increased bone loss  
Increased thinning of skin

# Prescription Medications that Can Impair Driving

- Barbiturates

- Butalbital-based drugs
  - (Fiorinal<sup>®</sup>, Fioricet<sup>®</sup>)

- Benzodiazepines

- Alprazolam (Xanax<sup>®</sup>)
- Clonazepam (Klonopin<sup>®</sup>)
- Diazepam (Valium<sup>®</sup>)
- Lorazepam (Ativan<sup>®</sup>)

- Sedative-Hypnotics

- Belsomra (Suvorexant<sup>®</sup>)
- Eszopiclone (Lunesta<sup>®</sup>)
- Ramelteon (Rozerem<sup>®</sup>)
- Zaleplon (Sonata<sup>®</sup>)
- Zolpidem (Ambien<sup>®</sup>)

- Increased sedation
- Diminished coordination
- Weakness
- Clumsiness
- Loss of balance
- Distorted vision
- Sleep driving (zolpidem)



# Prescription Medications that Can Impair Driving (cont'd)

## ■ Antidepressants

- Amitriptyline (Elavil®)
- Bupropion (Wellbutrin®)
- Duloxetine (Cymbalta®)
- Fluoxetine (Prozac®)
- Paroxetine (Paxil®)
- Trazodone (Desyrel®)
- Venlafaxine (Effexor®)

## ■ Antipsychotics

- Aripiprazole (Abilify®)
- Haloperidol (Haldol®)
- Quetiapine (Seroquel®)

- Increased sedation
- Diminished coordination
- Decreased blood pressure
- Tremor
- Altered sleep architecture
- Visual disturbances
- Confusion

# Prescription Medications that Can Impair Driving (cont'd)

- Anticonvulsants
  - Gabapentin (Neurontin®)
  - Pregabalin (Lyrica®)
  - Topiramate (Topamax®)
- Muscle relaxants
  - Carisoprodol (Soma®)
  - Cyclobenzaprine (Flexeril®)
- Antihistamines
  - Diphenhydramine (Benadryl®)
  - Hydroxyzine (Vistaril®)
- Antiparkinsonians
  - Carbidopa/levodopa (Sinemet®)

- Increased sedation
- Slowed psychomotor function
- “Sleep attacks”
- Dyskinesia
- Blurred vision
- Impaired balance

# Prescription Medications that Can Impair Driving (cont'd)

- Opioid analgesics

- Buprenorphine (Suboxone<sup>®</sup>, Butrans<sup>®</sup>)
- Codeine (Tylenol #3<sup>®</sup>)
- Fentanyl (Duragesic<sup>®</sup>, Actiq<sup>®</sup>)
- Hydrocodone (Vicodin<sup>®</sup>, Zohydro<sup>®</sup>)
- Hydromorphone (Dilaudid<sup>®</sup>, Exalgo<sup>®</sup>)
- Methadone
- Morphine (MS Contin<sup>®</sup>)
- Oxycodone (Percocet<sup>®</sup>, Oxycontin<sup>®</sup>)
- Oxymorphone (Opana<sup>®</sup>)
- Tapentadol (Nucynta<sup>®</sup>)
- Tramadol (Ultram<sup>®</sup>)

- Increased sedation
- Decreased breathing
- Fatigue
- Lightheadedness
- Vision changes

# Prescription Medications that Can Impair Driving (cont'd)

- Antihypertensives
  - Atenolol (Tenormin<sup>®</sup>)
  - Hydrochlorothiazide
  - Lisinopril (Zestril<sup>®</sup>)
  - Metoprolol (Toprol<sup>®</sup>)
- Antidiabetic agents
  - Glyburide (DiaBeta<sup>®</sup>)
  - Insulin (Humulin<sup>®</sup>, Lantus<sup>®</sup>)
  - Metformin (Glucophage<sup>®</sup>)
- Intestinal agents
  - Dicyclomine (Bentyl<sup>®</sup>)
  - Hyoscyamine (Levsin<sup>®</sup>)
  - Prochlorperazine (Compazine<sup>®</sup>)
- Ophthalmic agents

- **Dizziness**
- **Lightheadedness**
- **Drowsiness**
- **Blurred vision**
- **Delirium**

# Over-the-Counter Medications/Supplements that Can Impair Driving

- Antihistamines

- Chlorpheniramine (Chlor-Trimeton<sup>®</sup>)
- Diphenhydramine (Benadryl<sup>®</sup>, ZzzQuil<sup>®</sup>)
- Doxylamine (NyQuil<sup>®</sup>, Unisom<sup>®</sup>)
- Meclizine (Bonine<sup>®</sup>, Dramamine<sup>®</sup>)

- Analgesics

- Acetaminophen + diphenhydramine (Tylenol PM<sup>®</sup>)
- Ibuprofen + diphenhydramine (Motrin PM<sup>®</sup>, Advil PM<sup>®</sup>)
- Naproxen + diphenhydramine (Aleve PM<sup>®</sup>)

# Over-the-Counter Medications/Supplements that Can Impair Driving

- Sedatives
  - Chamomile
  - Kava
  - Lavender
  - Melatonin
  - St. John's wort
  - Valerian

# Alcohol Effects on Driving Skills

- Alterations in:
  - Concentration
  - Judgement
  - Comprehension
  - Coordination
  - Vision and hearing acuity
  - Reaction time



# Mixing Drugs with Alcohol: A Prescription for Disaster

Medication	Effect when Combined with Alcohol				
	Sedation	Dizziness	Slowed breathing	Impaired motor control	Increased risk for overdose
Benzodiazepines (e.g. Valium)	✓	✓	✓	✓	✓
Opioids (e.g. Morphine)	✓	✓	✓	✓	✓
Muscle relaxers (e.g. Soma)	✓	✓	✓	✓	✓
Sedatives (e.g. Ambien)	✓	✓		✓	
Antidepressants (e.g. Prozac)	✓	✓			✓
Antihistamines (e.g. Benadryl)	✓	✓			



# Marijuana Effects on Driving Skills

- Alterations in:
  - Reaction time
  - Perception
  - Short-term memory
  - Attention
  - Motor skills



<http://www.drugabuse.gov/publications/research-reports/marijuana/does-marijuana-use-affect-driving>

# “Cross Fading”: Marijuana and Alcohol

- Combined use can lead to:
  - Performance impairment
  - Increased loss of control
  - Impaired judgment
  - Impaired reaction time
- Some studies have suggested a “cancellation of effects”

# Marijuana in Massachusetts

- Chapter 369 of the Acts of 2012: An Act for the Humanitarian Medical Use of Marijuana
  - Eliminates state criminal and civil penalties for the medical use of marijuana by qualifying patients
  - Allows patients to possess up to a 60-day supply of marijuana for their personal medical use
  - Allows for non-profit medical marijuana treatment centers to grow, process and provide marijuana to patients or their caregivers
- 105 CMR 725.000: IMPLEMENTATION OF AN ACT FOR THE HUMANITARIAN MEDICAL USE OF MARIJUANA
  - Final Regulations on Use of Marijuana for Medicinal Purposes in Massachusetts

<https://malegislature.gov/Laws/SessionLaws/Acts/2012/Chapter369>

<http://www.mass.gov/eohhs/docs/dph/regs/105cmr725.pdf>

# Marijuana in Massachusetts (cont'd)

- The law does NOT:
  - Allow the operation of a motor vehicle, boat, or aircraft while under the influence of marijuana;
  - Require any health insurance provider, or any government agency or authority, to reimburse any person for the expenses of the medical use of marijuana;
  - Require any health care professional to authorize the use of medical marijuana for a patient;
  - Require any accommodation of any on-site medical use of marijuana in any place of employment, school bus or on school grounds, in any youth center, in any correctional facility, or of smoking medical marijuana in any public place;

# Marijuana in Massachusetts (cont'd)

- The law does NOT:
  - Supersede Massachusetts law prohibiting the possession, cultivation, transport, distribution, or sale of marijuana for nonmedical purposes;
  - Require the violation of federal law or purports to give immunity under federal law; or
  - Pose an obstacle to federal enforcement of federal law

# Is it Safe for GG to Drive?

- Recommendations

- Avoid alcohol and marijuana
- Consider medication changes:
  - Adjust the dose
  - Adjust the timing or frequency of doses
  - Identify non-drug ways of managing medical conditions, if possible
  - Change medications to those that cause less impairment
- Monitor medication effects closely
- Consider alternative forms of transportation

# Summary

- Many commonly used prescription and over-the-counter medications can impair driving when used alone or in combination
  - Risks are increased when combined with alcohol and/or marijuana
- An open dialogue with regard to driving safety should be encouraged between the driver, family/caregivers, and health care team
- Alternative forms of transportation should be considered in patients who require the need for certain high-risk medications

# Thank You!

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# Law Enforcement's Role in Dealing with "Older" Drivers



# BABY BOOMERS COMING OF AGE

By 2030, twenty-three percent of licensed drivers in the USA will be over 65-years-of-age (NHTSA), a mobile generation reluctant to stop driving;

Lack of significant administrative oversight of this aging driving population often places the onus of dealing with “elderly” drivers directly on law enforcement

**While the focus of this forum is on older or “elderly” drivers, the statutes and procedures addressed apply to all motorists in the Commonwealth of Massachusetts**

# ABSTRACT

In general, Massachusetts LEO's lack the training and resources to effectively deal with "elderly" drivers that exhibit signs indicating that cognitive or physical impairment may limit their ability to operate a motor vehicle safely; as well as the roadside resources to remove them from the public way

# **LAW ENFORCEMENT ENCOUNTERS WITH ELDERLY DRIVERS**

**Motor vehicle crashes**

**Violations of law**

**Other!**



# ROADSIDE ASSESSMENT

Is an “elderly” driver’s seemingly diminished capacity the results of cognitive impairment (Alzheimer's/dementia) or drugs/medications?

Do they have physical limitations that prevent safe operation?

Is it all of the above!

# IS THE OPERATOR OUI OR IS IT A MEDICAL CONDITION?

*MGLC 90 §24(1): Operating under the influence of alcohol, marijuana, narcotic drugs, depressants, stimulants, or vapors of glue;*

Many medications that diminish the capacity to operate a motor vehicle do not fall into these categories!

Standardized Field Sobriety Testing (SFST) has not been validated for individuals over 65 years-of-age!

How is probable cause developed?

Drug Recognition Experts?

# ROADSIDE OPTIONS

**Arrest!;**

**\* Absent arrest or applicable vehicle violation LE has no statutory authority to remove an operator or tow a vehicle if the operator displays cues that indicate that they should not be driving;**

**Call a family member or friend;**

**EMS;**

**Caretaker function?**







# POST ROADSIDE OPTIONS

MGLC 90 §22: *Registrars authority to suspend/revoke license to operate without a hearing*

Request for Immediate Threat

Request for Medical Evaluation (Law Enforcement)

# Request for Immediate Threat License Suspension/Revocation

	<small>Charles D. Baker, Governor Karyn E. Polito, Lieutenant Governor Stephanie Pollack, Secretary &amp; CEO Erin C. Deveney, Registrar</small>	 <small>Massachusetts Department of Transportation Registry of Motor Vehicles</small>	<small>P.O. Box 55896 Boston, MA 02205-5896 www.massrmv.com</small>
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**Request for Immediate Threat License Suspension / Revocation**

**Please Mail Immediately or FAX to 857-368-0013 or 857-368-0015**

<b>TO:</b> The Registry of Motor Vehicles Attn: Suspensions Dept. / Immediate Threats P.O. Box 55896 Boston, MA 02205-5896	<b>Date of Request:</b> _____ <b>Date of Incident:</b> _____
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Operator: \_\_\_\_\_ Lic #: \_\_\_\_\_ DOB: \_\_\_\_\_


**We believe that the above licensed operator has committed a violation of the motor vehicle laws of nature that would give you reason to believe that his/her continued operation will be so seriously improper as to constitute him/her an immediate threat to the public safety.**

**The following incidents(s), event(s), or circumstance(s) have led us to this belief. (Include a summary of facts even if additional information is attached).**

After reviewing the above facts we would ask you to take whatever action you deem appropriate.


Signed under the penalties of perjury this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_

 <b>Signature of Police Chief or Authorized Person (Required)</b>	_____
Department (please print): _____	Officer's Name: _____

(Please attach copies of all documentation to support this request)

Form # 20385 Form Date 03/27/15

# Request for Medical Evaluation

	<b>REQUEST FOR MEDICAL EVALUATION</b>
Please FAX to 617-351-9223 and mail original to: Medical Affairs, P.O. Box 55889, Boston, MA 02205	
This form is used to report a person you believe is no longer physically or medically capable of operating a motor vehicle safely. Please provide as much information as possible.	
<b>Information about the Driver: (required)</b>	
Last Name: _____ First Name: _____	
License or Social Security Number: _____ Date of Birth: ____/____/____	
Current Address: _____ _____	
Please briefly describe reason for concern: _____ _____	
<i>By signing this form, I certify to the best of my knowledge and under the pains and penalties of perjury that the above information is true:</i>	

**FOR LAW ENFORCEMENT or HEALTH CARE PROVIDER ONLY**  
(If not law enforcement or a health care provider, please leave this section blank.)

**Please check one of the following categories:**

*I hereby certify that in my professional opinion and to a reasonable degree of certainty,*

- ☐ The person named above is NOT medically qualified to operate a motor vehicle safely.
- ☐ I am unable to determine driving ability and I recommend the person undergo a competency road examination.
- ☐ The person may require adaptive equipment and/or an assessment for appropriate license restrictions via a competency road examination.

(e.g., Law Enforcement or Health Care Provider)
Place of Employment: _____ (e.g., Saugus Police Dept. or Boston Medical Center)
Medical Professionals, please provide Board of Registration Number: _____
<b>Law Enforcement Professionals:</b>
Was the driver cited by you? <input type="checkbox"/> No <input type="checkbox"/> Yes, Citation Number: _____
<b>Health Care Provider Definition:</b> A registered nurse, licensed practical nurse, physician, physician's assistant, psychologist, occupational therapist, optometrist, ophthalmologist, osteopath, physical therapist, or podiatrist who is a licensed health care provider under the provisions of M.G.L., Chapter 112.

T21788-1110

# NATIONAL ASSOCIATION OF TRIADS

*Partnership of law enforcement, older adults, and community groups such as AARP, promoting older adult Safety;*

Triad LEO's follow-up on crash reports, motor vehicle stops, family concerns, etc., to assess older drivers in their community and determine if they are "at risk" and if their continued license status should be referred to the RMV

# RECOMMENDATIONS

Assessment of older drivers is essential to identify those that pose a risk to public safety. The responsibility for the assessment process must be shared by LE, medical professionals, RMV, family members, and the “elderly” driver

# LAW ENFORCEMENT MUST BE TRAINED

Recognize cues that indicate a driver's cognitive and physical limitations;

Develop strategies to identify "at risk" drivers that pose a threat to public safety;

Document encounters with "at risk" motorists;

Refer "at risk" drivers to the RMV (Immediate Threat);

Serve as a resource to assist aging drivers and their families

# Contact Information

Lieutenant Stephen J. Walsh

Massachusetts State Police

Station Commander

31 Gould Road – Andover, MA 01810

(978)475-3800

[stephen.walsh@massmail.state.ma.us](mailto:stephen.walsh@massmail.state.ma.us)









# PROSECUTING THE IMPAIRED OLDER DRIVER

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# Older Drivers

- ▣ U.S. expected to have 56 million people the age of 65+ by 2020<sup>1</sup>

# Crash Data

- ▣ Overall, 3,952 fatally injured drivers tested positive for drug involvement in 2009 of 33,808 traffic fatalities
  
- ▣ 2013: United States
  - Fatalities: 32, 719
  - Injured: 2,313,000
  - Alcohol Impaired Fatalities: 10,076
  - Driver .08+ BAC 65+ years old: 13%

# Statistics

Table 5

## Driver Involvement in Fatal Traffic Crashes by State and Age Group, 2012

State	Total	Age 65+	Percentage of Total	Age Group (Years)								
				<16	16-20	21-34	35-54	55-69	70-74	75-79	80-84	85+
Connecticut	332	50	15.1	0	21	110	100	60	14	7	9	6
Maine	215	40	18.6	1	20	62	65	36	10	11	3	7
<b>Massachusetts</b>	<b>449</b>	<b>69</b>	<b>15.4</b>	<b>0</b>	<b>42</b>	<b>132</b>	<b>139</b>	<b>81</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>15</b>
New Hampshire	147	23	15.6	0	14	32	53	33	6	3	3	3
New York	1,569	219	14.0	1	137	443	519	251	55	31	41	42
Rhode Island	87	13	14.9	0	4	26	36	10	4	3	3	1
Vermont	96	15	15.6	0	7	28	30	19	7	0	3	1
<b>U.S. Total</b>	<b>45,337</b>	<b>5,744</b>	<b>12.7</b>	<b>121</b>	<b>4,211</b>	<b>13,688</b>	<b>14,912</b>	<b>7,726</b>	<b>1,385</b>	<b>974</b>	<b>840</b>	<b>718</b>

Data from: Older Population, DOT HS 812 005  
<http://www-nrd.nhtsa.dot.gov/Pubs/812005.pdf>

# Prosecutor

- ▣ Duties and responsibilities encompass public safety and justice
- ▣ Do the right thing to the right person for the right reason
- ▣ Ethical and statutory guidelines

# Goals in the Fight Against Impaired Driving

- ▣ Prevent recidivism
- ▣ Change behavior
- ▣ Maintain integrity of the case

# OUI

- ▣ MASS. GEN. LAWS 90 § 24(1)(a)
- ▣ Whoever: “Operates a motor vehicle. . . while under the influence[. . .] of marijuana, narcotic drugs, depressants or stimulant substances”
- ▣ First offense:
  - Up to 2.5 years imprisonment
  - Fine: \$500-\$5,000
- ▣ Second offense:
  - 60 days – 2.5 years (judge may reduce to 30 days)
  - Fine: \$600-\$10,000



# OUI (continued)

- ▣ MASS. GEN. LAWS 90 § 24G: Vehicular homicide
- ▣ Whoever, while under the influence: “. . . so operates a motor vehicle recklessly or negligently so that the lives or safety of the public might be endangered, and by any such operation so described causes the death of another person . . .”
  - 2.5 years to 15 years imprisonment
  - Fine: Up to \$5,000
  - License sanction: Revocation for 15 years

# “Under the Influence”

- ▣ *Commonwealth v. Daniel*, 464 Mass. 746, 756, 985 N.E.2d 843, 851-852 (2013).
  - A driver may be found to have been “under the influence” when her consumption of such substances “**diminished [her] ability to operate a motor vehicle safely** [citation omitted].

# OUI License Sanctions

- ▣ Failing a breath test:
  - Over 21 years of age & .08 BAC – 30 day suspension
  
- ▣ Refusing a chemical test:
  - Over 21 years of age, no priors – 180 day suspension
  - Over 21 years of age, one prior – 3 year suspension

# OUI License Sanctions

- ▣ Upon conviction
  - 1<sup>st</sup> offense – 1 year suspension
  - 2<sup>nd</sup> offense – 2 year suspension
  - 3<sup>rd</sup> offense – 8 year suspension
  - 4<sup>th</sup> offense – 10 year suspension
  - 5<sup>th</sup> offense – lifetime suspension
  - Second or subsequent suspension requires IID installation upon reinstatement

# Medical Marijuana in MA

- ▣ Mass. Gen. Laws. Ann. ch. 94C App.
- ▣ \$50 yearly fee
- ▣ May possess up to a sixty day supply
- ▣ § 1-7(A): *“Nothing in this law allows the operation of a motor vehicle, boat, or aircraft while under the influence of marijuana.”*

# Marijuana Legal Frameworks

## ▣ Legalization

- State laws and policies which make possession and use legal under state law

## ▣ Decriminalization

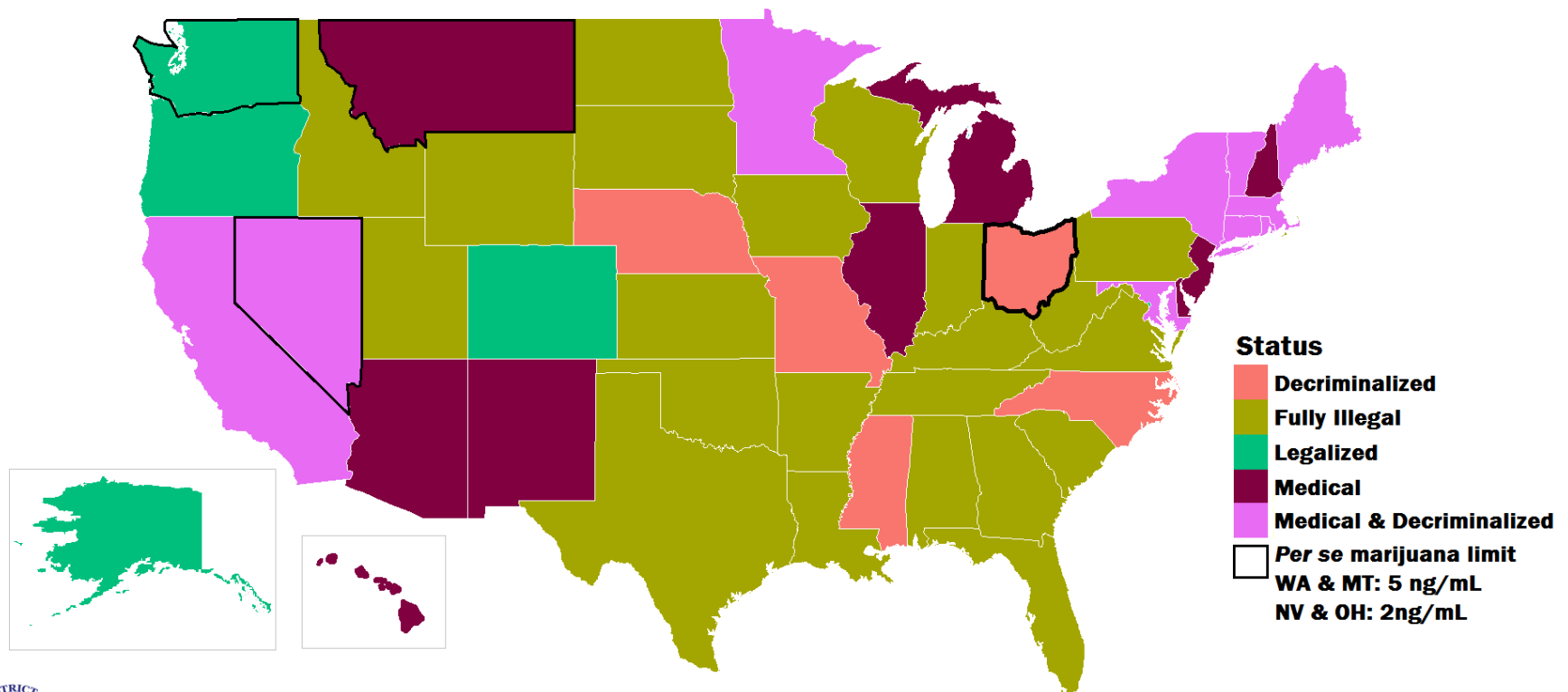
- State laws and policies which reduce the penalties for possession and use of small amounts from criminal to fines or civil penalties

## ▣ Medical

- State laws which allow person to defend against criminal charges of possession if can prove medical need under state law

# Marijuana Laws: Nationally

## United States Marijuana Laws



Data: Governors Highway Safety Association, Governing.com

**National Traffic Law Center**

# Comprehensive Multidisciplinary Approach

- ▣ Law enforcement
- ▣ Prosecutors
- ▣ Courts: DWI Courts
- ▣ Probation and Parole
- ▣ DMV
- ▣ Treatment providers
- ▣ Other partners: aging services providers, DOT



# The Costs of an Impaired Driving Conviction (First Time Offender)

□ Towing	\$75 +
□ Car Storage	\$45 + (per day)
□ Defense Attorney	\$1,500 +
□ Bail Fee	\$0 - \$500 +
□ DWI Fine	\$350 - \$1,000
□ State Surcharges	\$245 - \$395
□ Ignition Interlock	\$75 - \$100 +
□ Ignition Interlock Monthly Fee	\$420 - \$600 +
□ Alcohol Evaluation	\$100 +
□ DWI Victim Impact Panel Session	\$25
□ Probation Supervision Fees	\$0 - \$250
□ Conditional License	\$75
□ Drinking Driver Program Fee	\$175 - \$300 +
□ DMV Civil Penalty	\$125
□ DMV License Reinstatement Fee	\$150
□ Driver Responsibility Assessment Fee (annual for three years)	\$250
□ Auto Insurance (additional cost per year)	\$2,000 - \$3,000 +

**TOTAL: \$5,595 - \$9,140**



# Resources

- *2013-14 National Roadside Survey of Alcohol and Drug Use by Drivers* (Berning, et al 2015)
- *Traffic Safety Facts; Crash\*Stat - Drug Involvement of Fatally Injured Drivers* (NHTSA 2010)
- *Drugged Driving Expert Panel Report: A Consensus Protocol for Assessing the Potential of Drugs to Impair Driving* (Kay, Logan 2011)
- *Drug-Impaired Driving: Understanding the Problem & Ways to Reduce It* (Compton, Vegega, Smither 2009)
- *Drugged Driving Research: A White Paper* (DuPont, 2011)



# Resources

- ▣ [www.NDAA.org](http://www.NDAA.org)
- ▣ [www.NHTSA.gov](http://www.NHTSA.gov)
- ▣ [www.whitehouse.gov](http://www.whitehouse.gov)
- ▣ [www.theiacp.org](http://www.theiacp.org)





APR 12 2003