

*ASPPH Presents Webinar Series*

*Public Health Law Research Part I:  
Creating and Using Open-Source  
Policy Data for Public Health  
Evaluation Research*

Wednesday, March 29, 2017  
12:00 pm-1:00 pm Eastern

ASPPH.ORG

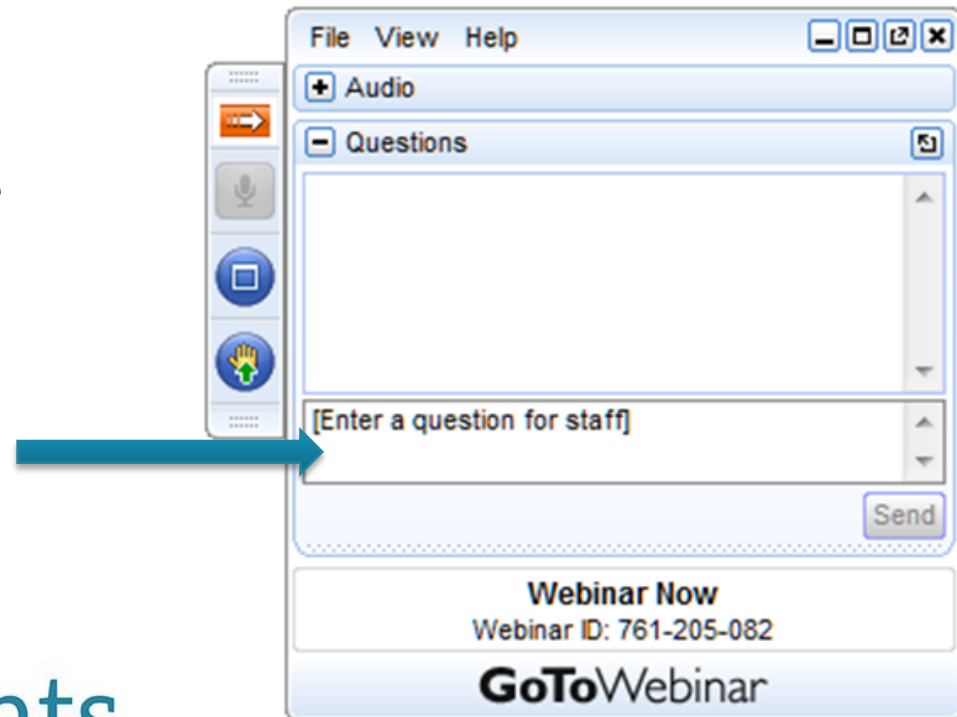
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**ASPPH Presents**  
 **WEBINAR**

# Method for Submitting Questions

## Join the Conversation...

- You can ask questions in writing anytime during the webinar.
- Simply type them in the “Questions” field on the right side of your screen.



ASPPH Presents  
▶ WEBINAR

# Moderator

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**Jennifer Ibrahim, PhD**  
Temple University College of Public Health

# Today's Presenters

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**Scott Burris, JD**  
Temple University Beasley  
School of Law, Center for  
Public Health Law Research



**Lindsay Cloud, JD**  
Temple University Beasley  
School of Law, Center for  
Public Health Law  
Research



**Bryce Pardo**  
University of Maryland,  
School of Public Policy

# Presenters

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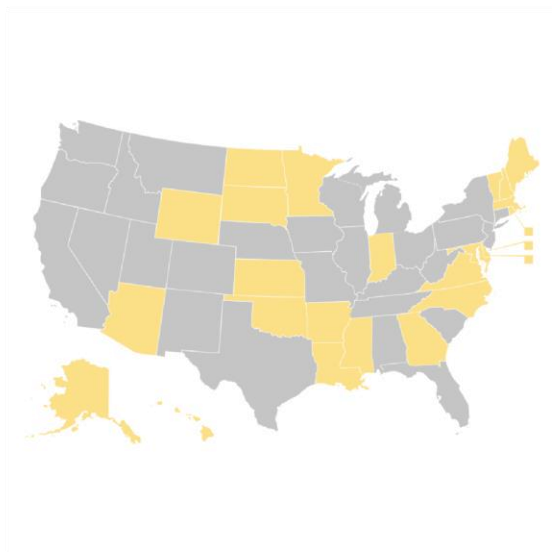


**Scott Burris, JD**  
Temple University Beasley School of Law,  
Center for Public Health Law Research



**Lindsay Cloud, JD**  
Temple University Beasley School of Law,  
Center for Public Health Law Research

# Public Health Law Research Part I: Creating and Using Open-Source Policy Data for Public Health Evaluation Research



# Scott Burris, JD

Center for Public Health Law Research  
Temple University

# We all know law has done some great things for health

**CDC**  
CENTERS FOR DISEASE CONTROL  
AND PREVENTION

April 2, 1999 / Vol. 48 / No. 12

## **MMWR**<sup>TM</sup> **MORBIDITY AND MORTALITY WEEKLY REPORT**

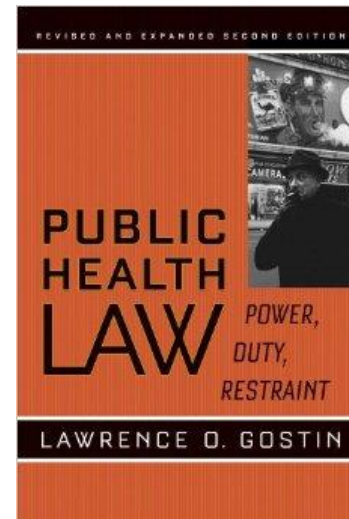
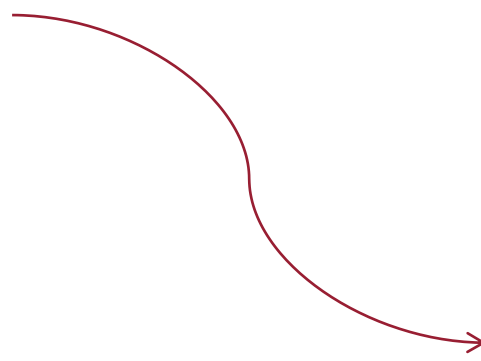
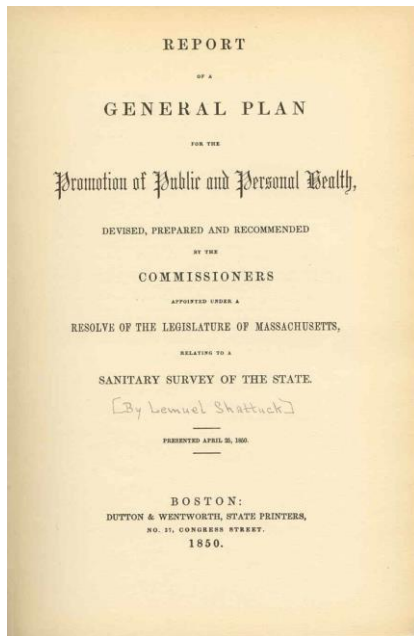
- 241 Ten Great Public Health Achievements — United States, 1900–1999
- 243 Impact of Vaccines Universally Recommended for Children — United States, 1900–1998
- 248 Tobacco Use Among Middle and High School Students — Florida, 1998 and 1999
- 253 Transfusion-Transmitted Malaria — Missouri and Pennsylvania, 1996–1998
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### **Ten Great Public Health Achievements — United States, 1900–1999**

- Vaccination
- Motor-vehicle safety
- Safer workplaces
- Control of infectious diseases
- Decline in deaths from coronary heart disease and stroke
- Safer and healthier foods
- Healthier mothers and babies
- Family planning
- Fluoridation of drinking water
- Recognition of tobacco use as a health hazard

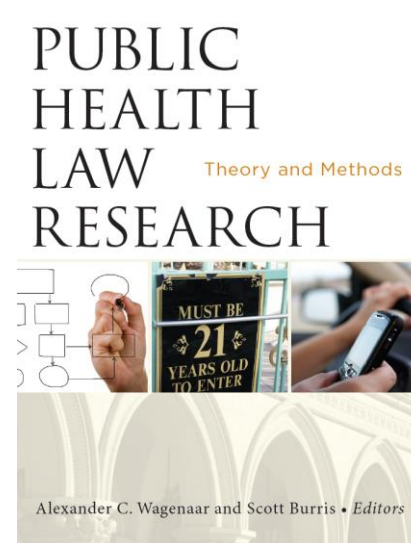


But we weren't really thinking about exactly *how* that was happening

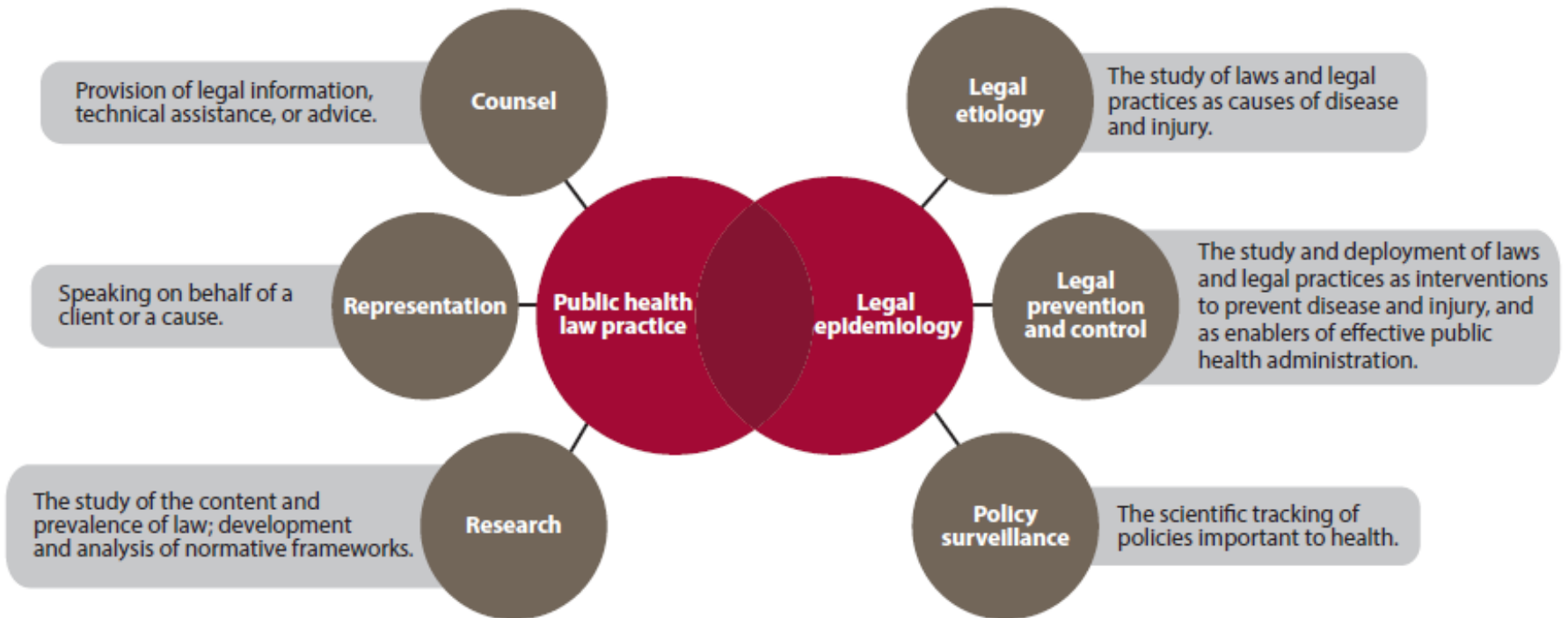


# The RWJF Public Health Law Research Program

**“The scientific study of the relation of law and legal practices to population health.”**



# Public Health Law is not just for lawyers



# “Five Essential Public Health Law Services”



# Policy Surveillance as a Public Health Practice



A project of the National Institute on Alcohol Abuse and Alcoholism

**APIS**  
 Alcohol Policy Information System

Welcome to the Alcohol Policy Information System

The Alcohol Policy Information System (APIS) provides detailed information on a wide variety of alcohol-related policies in the United States at both State and Federal levels. Detailed state-by-state information is available for the 35 alcohol-related policies listed below. APIS also provides a variety of informational resources of interest to alcohol policy researchers and others involved with alcohol policy issues.

**NEW:**

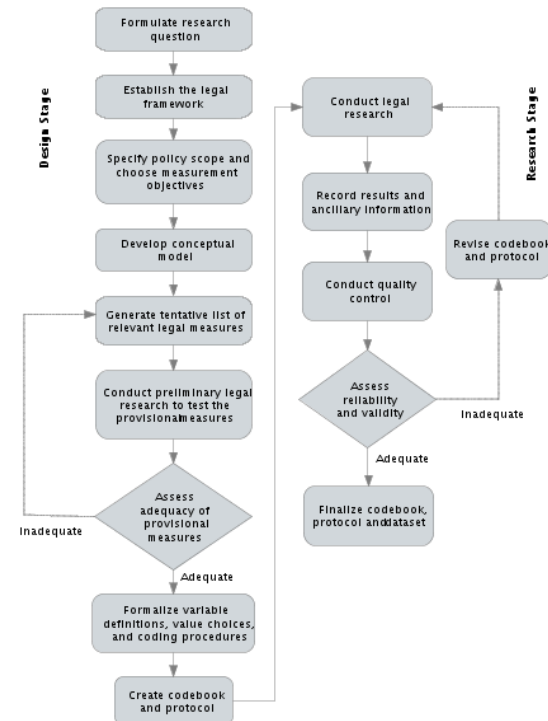
- APIS now provides policy-related information on the **Recreational Use of Cannabis**
- Coming soon – a redesigned APIS website

Choose a topic below to see information on a specific policy area:

<b>Taxation</b> Beer Taxes Wine Taxes Distilled Spirits Taxes	<b>Retail Sales</b> Keg Registration Beverage Service Training Sunday Sales
<b>Underage Drinking</b> Possession/Consumption/Internal Possession Purchase Furnishing Age of Server-On-Premises Age of Seller-Off-Premises Use/Lose Driving Privileges Hosting Underage Drinking Parties False Identification	<b>Alcohol Control Systems</b> Beer-Retail Beer-Wholesale Wine-Retail Wine-Wholesale Distilled Spirits-Retail Distilled Spirits-Wholesale
<b>Alcohol Beverages Pricing</b> Drink Specials Wholesale Pricing Practices and Restrictions	<b>Pregnancy and Alcohol</b> Warning Signs: Drinking During Pregnancy Criminal Prosecution Civil Commitment Priority Treatment Child Abuse/Neglect Reporting Requirements
<b>Blood Alcohol Concentration (BAC) Limits</b> Adult Drivers Drivers Under 21 Recreational Boaters	<b>Health Care Services and Financing</b> Health Insurance: Losses due to Intoxication ("LUPPL") Health Insurance Parity
<b>Transportation</b> Open Container Vehicular Insurance: Losses due to Intoxication	

**Cannabis Policy Topics**  
 Detailed policy information is available on the **Recreational Use of Cannabis**.

In addition, APIS has developed the **Cannabis Policy Taxonomy (CPT)**, an inventory and taxonomy of cannabis policies.



# Policy Surveillance as a Public Health Practice

The systematic collection and analysis of laws of public health significance



# Add New Technology: The LawAtlas Site and the Workbench

The screenshot shows the website's header with the logo 'THE POLICY SURVEILLANCE PROGRAM' and 'A LawAtlas Project'. A search bar is located in the top right. Below the header is a navigation menu with 'Home', 'Topics', 'Learn', and 'About'. The main content area features a large banner with a network diagram of maps from 2000, 2009, and 2016. A 'Choose a topic' button is positioned between the 2009 and 2016 maps. To the right of the maps, the text reads 'EXPLORE THE LAW' followed by 'Laws and policies from a broad array of health topics accessible for day-to-day use by lawyers and non-lawyers alike.' Below the banner are three columns: 'Explore the Law' (with a globe icon), 'Learning Library' (with a brain icon), and 'About Us' (with a group of people icon). Each column has a brief description of its content.

# The MonQcle™ System

Invite a Friend Datasets Contact Subscription Training Logout

## Medication-Assisted Treatment with Methadone (MAT) Laws

6/18/2015 → 7/7/2016 Arkansas (AR)

Dataset Home Edit Record Save Record

### Questions

- 1 | Does the jurisdiction have a law on the dispensing of methadone for the treatment of opioid use disorders? 1  
MAT programs, methadone | methadone/buprenorphin
- 2 | Are there laws regulating the operation of opioid treatment programs (OTPs)? 1  
MAT programs, methadone | state methadone author. | OTP requirements
- 3 | Is physician evaluation required for new patient admission? 1  
Medical exam | laboratory examination | physical evaluation
  - 3.1 | How soon must the physician evaluate the new patient? 1  
14 days | Medical exam | laboratory examination | physical evaluation
- 4 | What is the standard minimum length of dependence permissible for new patient admission into an OTP? 1  
current physiological | dependence history | 1 year
- 5 | Are counseling services for admitted patients required at OTPs? 1

### 016-04-2 Ark. Code R. § I Introduction

1/1/2011 - 10/1/2016 | Version 1 | Managed by: Burris

1/1/2011 - 10/1/2016 | Version 1 | Managed by: Burris

**Lazy Plot** The Arkansas Department of Health/Alcohol Services (DHS) and Drug Abuse Prevention (ADAP) has developed these standards for the administration of Methadone/Levomethadyl Acetate Hydrochloride (LAAM) Maintenance Treatment Programs (MMTP) in Arkansas.

The goal of methadone/LAAM treatment is total rehabilitation of the patient. While eventual withdrawal from the use of drugs, including methadone/LAAM, may be an appropriate treatment goal, some patients may remain on methadone/LAAM maintenance for relatively long periods of time. Periodic consideration of withdrawing from methadone/LAAM maintenance is appropriate only if it is in the individual patient's interest. Such considerations are between the patient and the treatment facility.

The program shall be progressive in nature, addressing the patient's individual need with methadone/LAAM as only one component of comprehensive treatment services.

### 016-04-2 Ark. Code R. § II Regulatory Authority

1/1/2011 - 10/1/2016 | Version 1 | Managed by: Burris

1/1/2011 - 10/1/2016 | Version 1 | Managed by: Burris


The authority for these rules is A.C.A. 20-64-602, 20-64-704, and 20-64-903.

Persons, partnerships, associations or corporations applying for approval as a treatment program providing methadone/LAAM services shall meet the requirements of these standards. In addition, ADAP shall license Arkansas programs providing methadone/LAAM services in accordance with A.C.A. 20-64-901, et seq.

**Lazy Plot** The treatment program providing methadone/LAAM services, hereinafter referred to as "Program" shall comply with applicable federal, state and local laws and regulations including those under the jurisdiction of the Substance Abuse Mental Health Services Administration Center for Substance Abuse Treatment (CSAT), the Drug Enforcement Administration (DEA) and the State Methadone Authority.



# NIDA's Drug Abuse Policy Resources




**PDAPS** | Prescription Drug Abuse Policy System

A source of rigorous legal data for researchers and detailed policy information for the public.

MONOCLE  
www.monocle.com

PDAPS is funded by the National Institute on Drug Abuse to track key state laws related to prescription drug abuse. Click on any topic area to reach an interactive page where you can investigate the history and features of the law, or download data and other documentation for research.


### Expanded Access to Naloxone



State laws authorizing third-party prescribing and lay administration of the standard antidote to opioid overdose.

[View details >](#)


### Medical Marijuana



State laws and regulations governing the production, transport, sale, quality and consumption of marijuana for therapeutic purposes.

[View details >](#)

### Good Samaritan 911 Immunity



State laws providing protection from criminal sanctions to overdose victims or witnesses who seek emergency services.

[View details >](#)

### Prescription Drug Monitoring Program



State laws and regulations governing the operation and use of programs tracking prescription and dispensing of controlled substances.

[View details >](#)

# DAPS (Drug Abuse Policy System)

Rigorous legal data for researchers and detailed policy information for the public.

Coming soon

DAPS is funded by the National Institute on Drug Abuse to track key state laws related to drug abuse. Click on any topic area to investigate the history and features of the law, and download data and documentation for research.

## Latest topics



### Medication-Assisted Treatment with Methadone (MAT) Laws

Medication-Assisted Treatment (MAT) uses medications, such as Methadone, in conjunction with behavioral therapy and counseling to treat opioid addiction.

[VIEW DETAILS](#)



### Drugged Driving Laws

As more states have legalized medical and recreational marijuana and with the high prevalence of prescription drug use in the United States, drugged driving has become a public health issue.

[VIEW DETAILS](#)

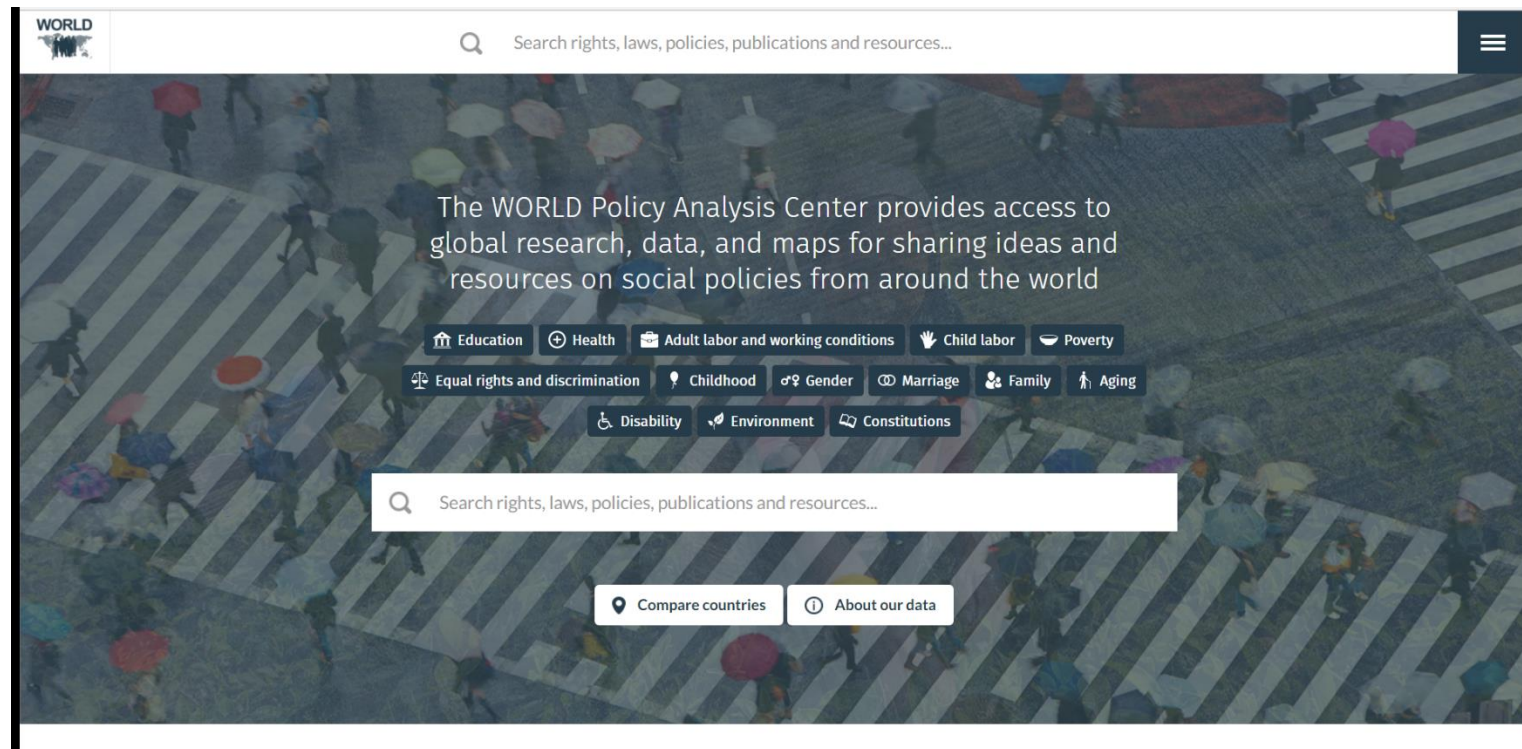


### Recreational Marijuana Laws

Alaska, California, Colorado, the District of Columbia, Maine, Massachusetts, Nevada, Oregon, and Washington, have enacted laws that legalize marijuana use for recreational purposes.

[VIEW DETAILS](#)

# World Policy Analysis Center



# CDC STATE System

## State Tobacco Activities Tracking and Evaluation (STATE) System

- STATE System**
- Report Guide
- Custom Reports
- State Highlights
- Interactive Maps** —
- Map of Comprehensive Medicaid Coverage of Cessation Treatments
- Map of Current Cigarette Use Among Adults
- Map of Current Cigarette Use Among Youth

[CDC](#) > [STATE System](#) > [Interactive Maps](#)

### Interactive Maps



Access key data from across the STATE System presented in a US map with a corresponding data table below. Select from the list of available topics to link to the Interactive Map.

#### Cessation Coverage



[Comprehensive Medicaid Coverage of Cessation Treatments \(Lung Association Cessation Coverage\) 2016](#)

#### Survey Data - Tobacco Use



[Current Cigarette Use Among Adults \(Behavior Risk Factor Surveillance System\) 2015](#)

# Lindsay Cloud, JD

Center for Public Health Law Research  
Temple University

# What makes Policy Surveillance a Scientific Approach to Collecting and Analyzing Laws?

It uses a systematic approach

It emphasizes transparency

The process is replicable

There is a focus on delivering a highly accurate product through quality control

# An Overview- Policy Surveillance Process



## Defining the scope

**Scoping** - identify the topic and parameters of your project



Conducting Background  
Research

Investigate  
the legal  
landscape

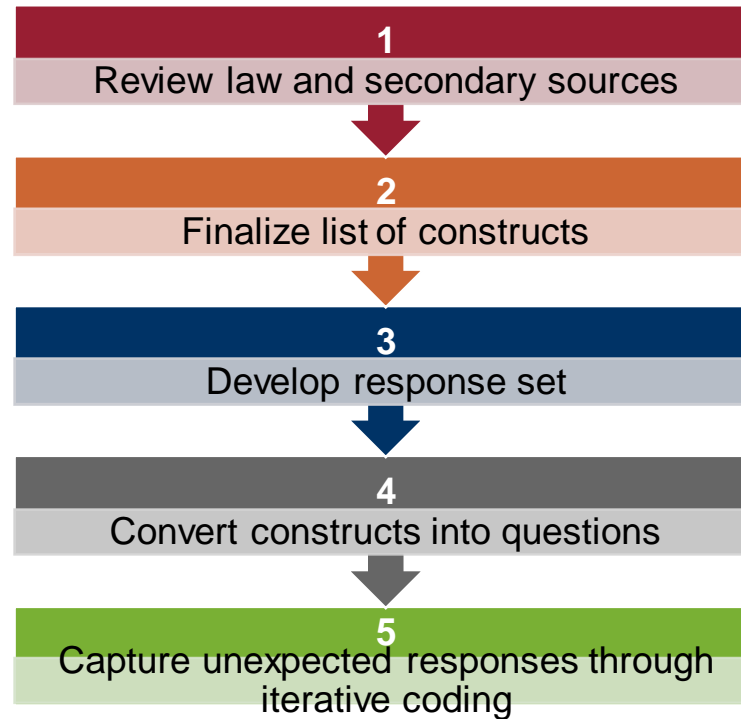


Identify key  
elements of  
the law and  
variation



Define  
preliminary  
constructs

## Developing Coding Questions



## Collecting the Law and Creating the Legal Text

**Collecting the law** - researchers gather important information about laws relevant to the topic being studied in each jurisdiction included in the project

The **legal text** is the organized version of the relevant law for each jurisdiction.

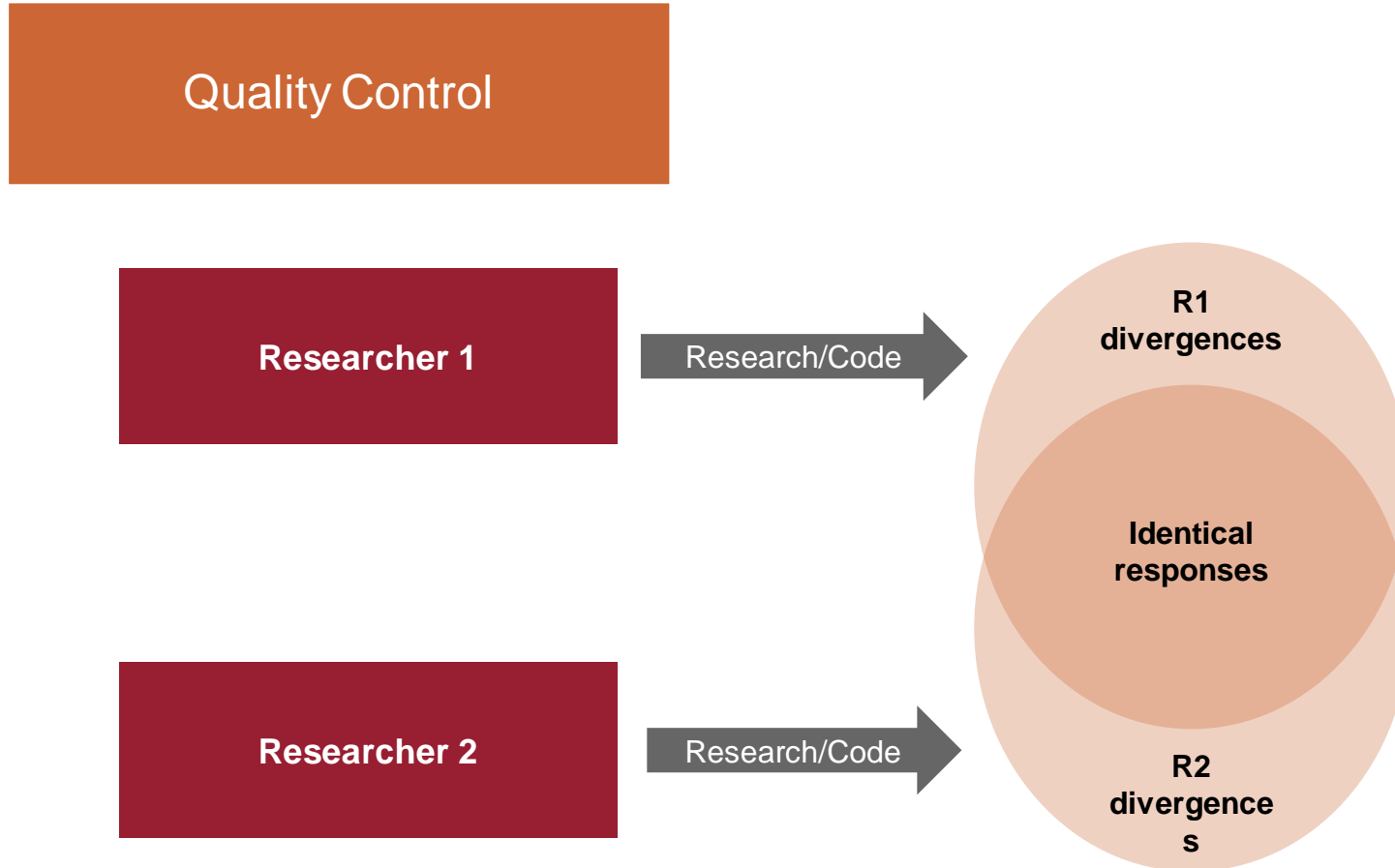
- It will be used for coding
- Can be displayed if the dataset is published on LawAtlas.org

## Coding the Law

Coding the law - use the legal text collected to answer the questions developed

The goal of coding is to **observe**, and **record** the relevant features of law, rather than interpret the law

	Definitions	Example
Observation	Things we measure (facts)	Does the jurisdiction have a texting while driving law?
Interpretation	Conclusions we derive from those observations (opinions)	Does the jurisdiction have a <i>strict</i> texting while driving law?



# Research protocol

The Research Protocol outlines the entire methodology and process of the project, including:

- The scope of the project, including dates of the project, team involved, jurisdictions, purpose of the project, and variables
- Data collection methods, including search strategy and databases used
- Coding methods, including coding scheme and definitions of terms of art
- Description of quality control measures

CREATED BY: Policy Surveillance Program Staff  
MAINTAINED BY: Policy Surveillance Program Staff  
VALID FROM: January 1, 2000  
UPDATED THROUGH: March 1, 2016

[Data](#) [↔ Codebook](#) [Protocol](#) [Summary Report](#)

## Publication and Dissemination

**Publishing your project** - release the coded questions and responses (legal data) to the intended audiences

**Disseminating your project** - make users aware the project is available and provide access to the project

# Creating data for evaluation

CREATED BY: Policy Surveillance Program Staff

MAINTAINED BY: Policy Surveillance Program Staff

VALID FROM: January 1, 2000

UPDATED THROUGH: March 1, 2016

 Data  Codebook  Protocol  Summary Report



	A	B	C	D	E	F	G
	State	FIPS Code	Begin Date	End Date	oc-law	oc-criteria_Danger to self due to mental illness	oc-criteria_Danger to others due to mental illness
1							
2	AK	2	1/1/2000	9/17/2002	1	1	1
3	AK	2	9/18/2002	12/31/2004	1	1	1
4	AK	2	1/1/2005	7/1/2005	1	1	1
5	AK	2	7/1/2005	6/30/2008	1	1	1
6	AK	2	7/1/2008	8/31/2013	1	1	1
7	AK	2	9/1/2013	10/7/2014	1	1	1
8	AK	2	10/8/2014	3/1/2016	1	1	1
9	AL	1	1/1/2000	5/26/2004	1	0	0
10	AL	1	5/27/2004	4/24/2006	1	0	0
11	AL	1	4/25/2004	7/31/2009	1	0	0
12	AL	1	8/1/2009	7/31/2013	1	0	0
13	AL	1	8/1/2013	3/1/2016	1	0	0
14	AR	5	8/13/2001	6/30/2003	1	1	1
15	AR	5	7/1/2003	7/14/2003	1	1	1
16	AR	5	7/15/2003	7/15/2003	1	1	1
17	AR	5	7/16/2003	6/30/2007	1	1	1
18	AR	5	7/1/2007	7/30/2007	1	1	1
19	AR	5	7/31/2007	7/30/2009	1	1	1
20	AR	5	7/31/2009	7/26/2011	1	1	1
21	AR	5	7/27/2011	8/15/2013	1	1	1
22	AR	5	8/16/2013	3/1/2016	1	1	1
23	AR	5	1/1/2000	8/12/2001	1	1	1
24	AZ	4	1/1/2000	7/17/2000	1	1	1
25	AZ	4	7/18/2000	8/21/2002	1	1	1
26	AZ	4	8/22/2002	9/17/2003	1	1	1
27	AZ	4	9/18/2003	8/24/2004	1	1	1
28	AZ	4	8/25/2004	9/20/2006	1	1	1
29	AZ	4	9/21/2006	9/25/2008	1	1	1
30	AZ	4	9/26/2008	9/29/2009	1	1	1



# Codebook

Questions	
Question 1:	Is there a state law regulating involuntary outpatient commitment?
Question Type:	Binary - mutually exclusive
Variable Name:	OC_Law
Variable Values:	0, 1
Value Label:	0 = No
Value Label:	1 = Yes
Question 2:	What are the criteria for involuntary outpatient commitment of an individual?
Question Type:	Categorical - check all that apply
Variable Name:	OC_Criteria_Danger to self due to mental illness
Variable Values:	0, 1
Value Label:	0 = No
Value Label:	1 = Yes
Question 3:	What are the criteria for involuntary outpatient commitment of an individual?
Question Type:	Categorical - check all that apply
Variable Name:	OC_Criteria_Danger to others due to mental illness
Variable Values:	0, 1
Value Label:	0 = No
Value Label:	1 = Yes
Question 4:	What are the criteria for involuntary outpatient commitment of an individual?
Question Type:	Categorical - check all that apply
Variable Name:	OC_Criteria_Mental illness
Variable Values:	0, 1
Value Label:	0 = No
Value Label:	1 = Yes
Question 5:	What are the criteria for involuntary outpatient commitment of an individual?
Question Type:	Categorical - check all that apply
Variable Name:	OC_Criteria_Prevent future danger to self
Variable Values:	0, 1
Value Label:	0 = No
Value Label:	1 = Yes

A **Codebook** is a document that defines the variables and values included in the project

Used in conjunction with the data page to perform analysis or to aid in understanding the research and coding

CREATED BY: Policy Surveillance Program Staff  
 MAINTAINED BY: Policy Surveillance Program Staff  
 VALID FROM: January 1, 2000  
 UPDATED THROUGH: March 1, 2016

 Data  Codebook  Protocol  Summary Report



## Tracking and Updating the Law

**Tracking and updating the law** - check periodically for new laws, or updates to existing laws, included in the project to maintain the dataset

# LawAtlas.org

LawAtlas.org is a central place for creating, sharing, and accessing authoritative health policy surveillance and related resources.

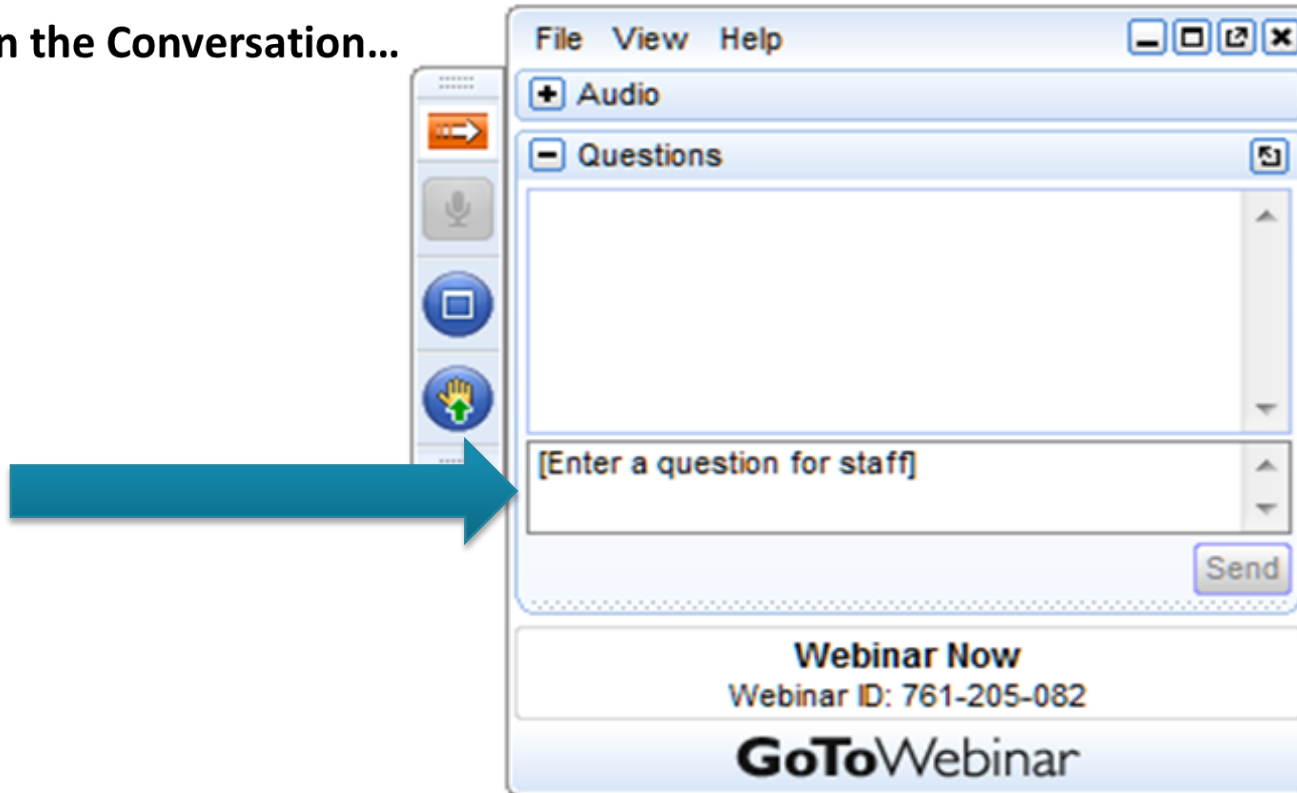
Learn policy  
surveillance methods

Access empirical legal  
data

Learn more about  
public health laws and  
policies through  
related resources

# Questions or Comments?

Join the Conversation...



# Presenter

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**Bryce Pardo**  
University of Maryland,  
School of Public Policy

# DO MORE ROBUST PRESCRIPTION DRUG MONITORING PROGRAMS REDUCE PRESCRIPTION OPIOID OVERDOSE?

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Bryce Pardo

University of Maryland

# Use of legal data in public health research

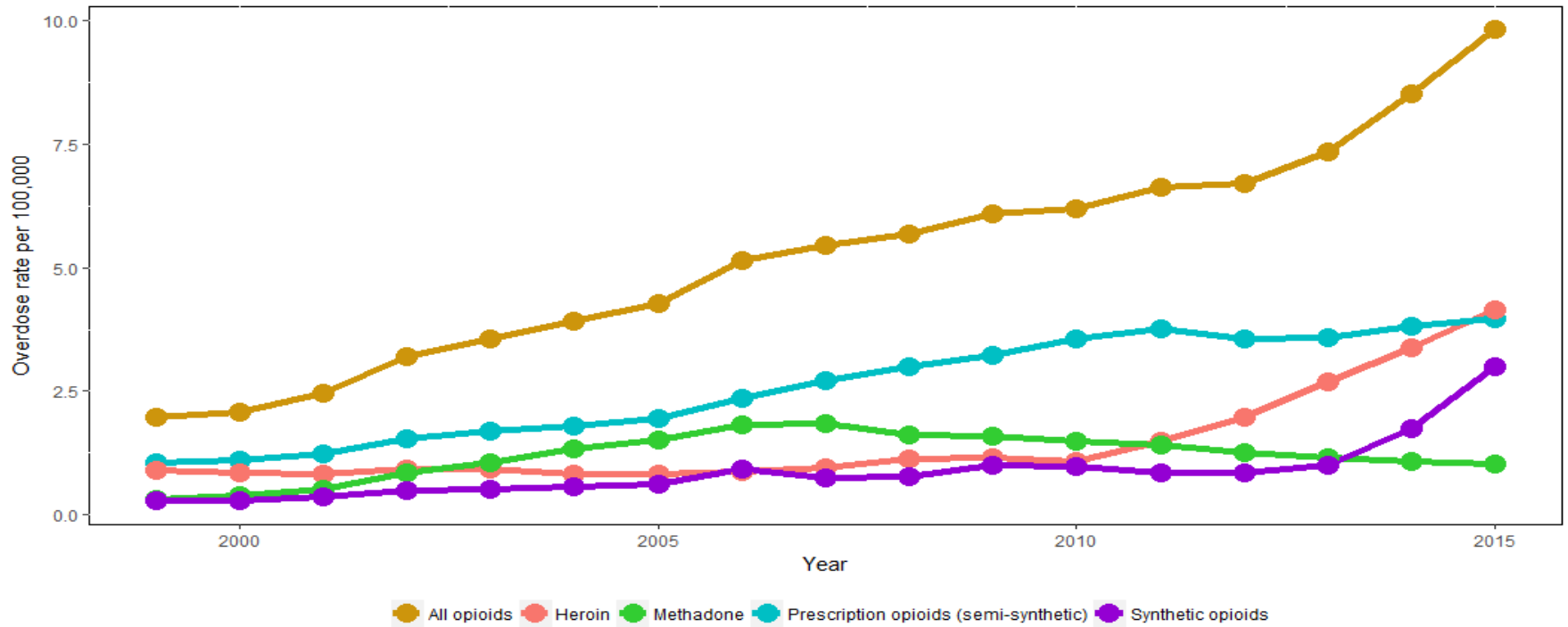
- Pardo, Bryce. "Do More Robust Prescription Drug Monitoring Programs Reduce Prescription Opioid Overdose?." *Addiction* (2016).

# Background



# Problem

US Overdose death rate 1999-2015



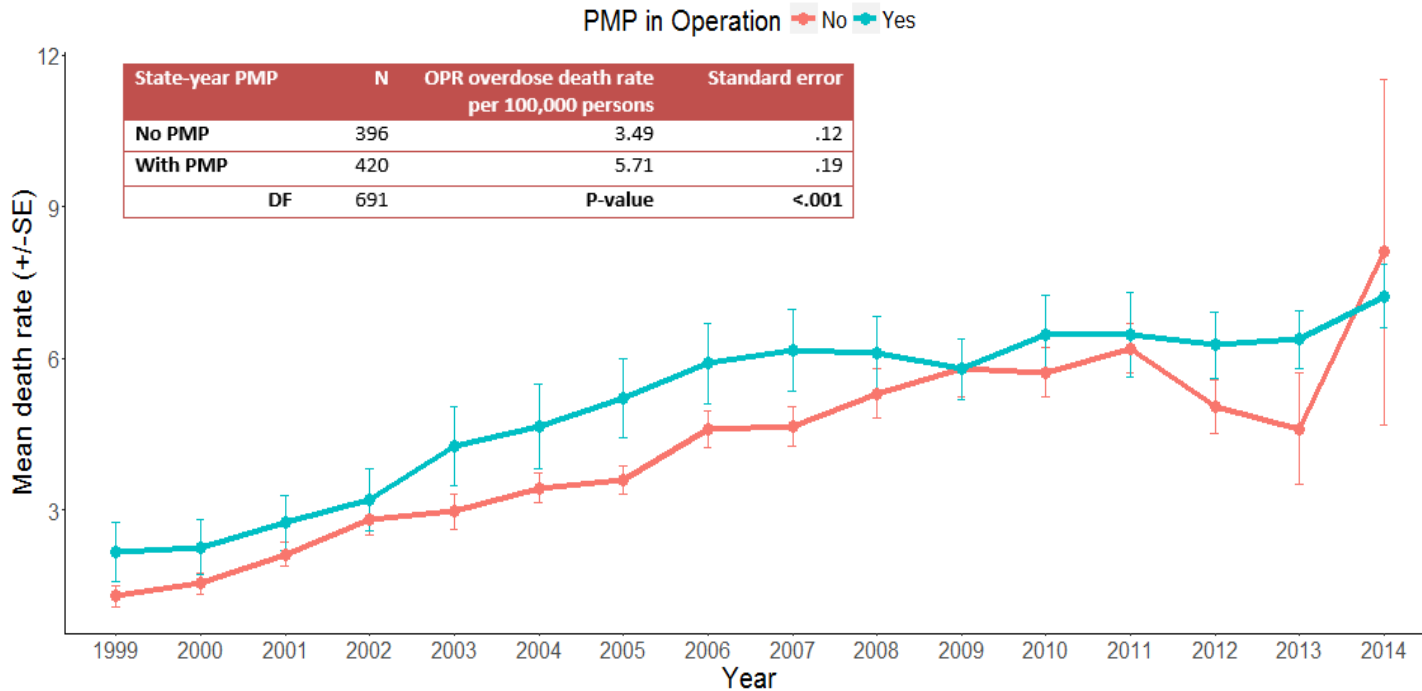
## Prescription Monitoring Programs (PMPs)

- PMPs are state-based data systems that collect information directly from pharmacies on controlled substances prescribed by medical professionals and dispensaries.
- Intended to aid prescribers and law enforcement to support legitimate use of controlled substances, limiting diversion and doctor shopping.

# Analytical Challenges

- Evaluations of PMP are mixed. Literature views program in binary terms: Paulozzi LJ, Kilbourne EM, Desai HA (2011); Haegerich TM, Paulozzi LJ, Manns BJ, Jones CM (2014).

**Average death rate by year for states with and without PMPs**



# Research Questions

1. Are more robust prescription drug monitoring programs negatively associated with lower opioid overdose deaths?
2. Is there a “tipping point” or minimum standard with which a prescription drug monitoring program is sufficiently strong?
3. Are different administering agencies associated differently with overdose deaths?

# Methods

## Legal index

- Legal data produced by Prescription Drug Abuse Policy System and LawAtlas.
- Can measure regulatory changes across states and over time.
- More precise measure of policy and law.
- Departs from use of binary variables in regressions.
- Limitations remain.

# Law Atlas/PDAPS

- Useful for researchers who are not legal scholars.
- Helpful to see measure policies over time.
- Can download data sets (PDAPS)
- Evolving field and data source.

## Data

- Dependent variable: age-adjusted opioid overdose death rates by state (51) and year (16) (CDC WONDER)
  - Total of 816 observations
  - Imputed for censored values (33) to keep highly balanced panel
- Independent variables: number and type of PMP regulations in place for each state by year (NAMSDL, PDAPS), access to naloxone/good Samaritan laws, other demographic controls.
- **Explanatory variable**: Created an index variable, *score*, to score PMPs and avoid multicollinearity, reduce measurement error.



# Method - Index variable: PMP Score

- Adopted hierarchy from literature reviews and meta-analyses.
  - Brandeis University's PDMP Center of Excellence (2012 report), meta-analysis (Haegerich et al., 2014) and other studies.

## Research Hierarchy

Published or formally documented studies or consensus statements	Points
<b>1) Randomized controlled trial (RCT) or meta-analysis</b>	5
<b>2) Observational study with comparison groups</b>	4
<b>3) Observational study without comparison group; Time series</b>	3
<b>4) Case study or written documentation of expert opinion</b>	2
<b>5) Accumulated experience and/or key stakeholder perceptions</b>	1

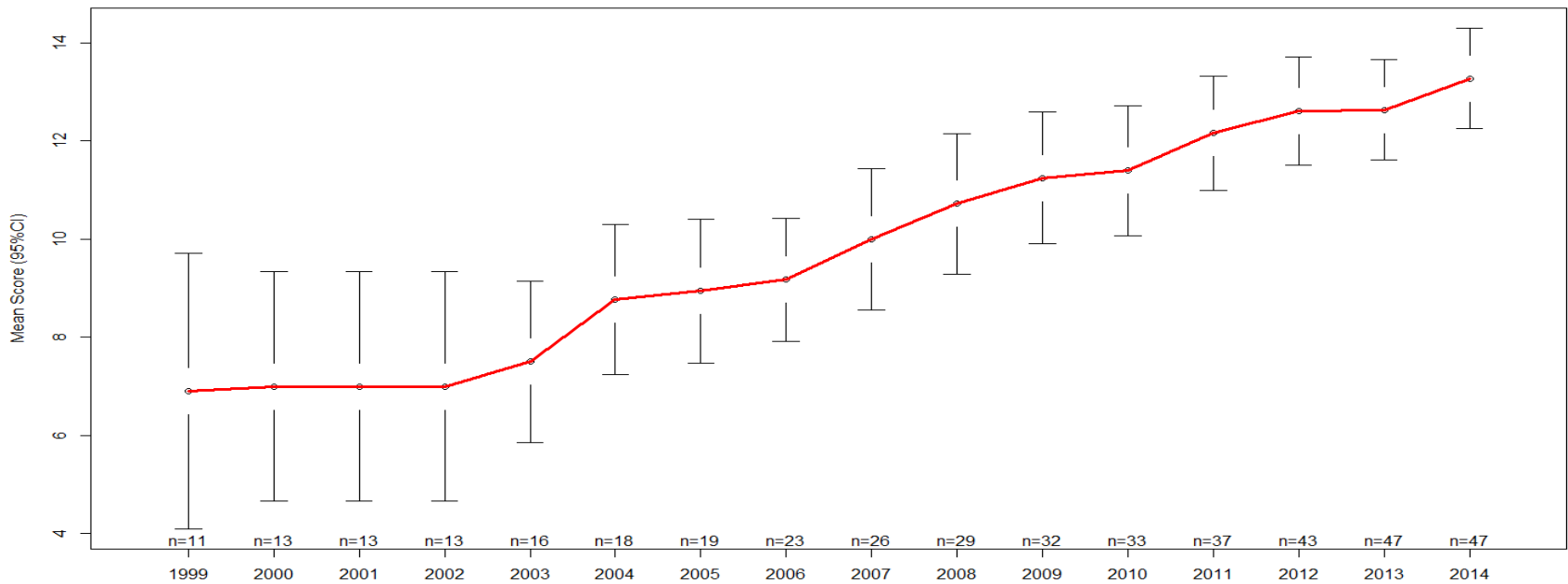
## Method - Index variable: PMP Score

	Statutory regulation or best practice	Outcomes listed from literature	Type (number of studies)	Weight
1	Monitor more than Schedule II drugs (Schedules III, IV or V)	Reduced doctor shopping, decreased inappropriate OPR use	Time series and descriptive/before-after (13)	3
2	PDMP permitted or required (i.e. proactive) to identify suspicious prescribing, dispensing or purchasing activity	Decreased prescription sales	Observational with controls (4)	4
3	Access for law enforcement and prosecutors	None	None	1
4	Access for Physicians, Pharmacists, NP/PA, Dentists, Chiropractors	None	None	1
5	Reporting frequency	Decreased doctor shopping, increase use of program by prescribers.	Observational with controls (2)	Baseline <month, >week • Range from -2 to 3, baseline of 0
6	Prescribers required to check PMP before prescribing to a patient	None	None, but Haegerich et al. and Davis et al. mention it.	4
7	PMP permitted to share data with other states	None	None, but Brandeis best practices report mentions	1
8	Law requires program evaluation	None	None	1
9	PMP has oversight board	None	None	1
10	Data retention	None	None	1
11	Funding mechanism	None	None, but Brandeis best practices report mentions	<ul style="list-style-type: none"> <li>• 0 no funding</li> <li>• 1 grants or gifts</li> <li>• 2 charging fees</li> <li>• 3 appropriated</li> </ul>

# PMP Score

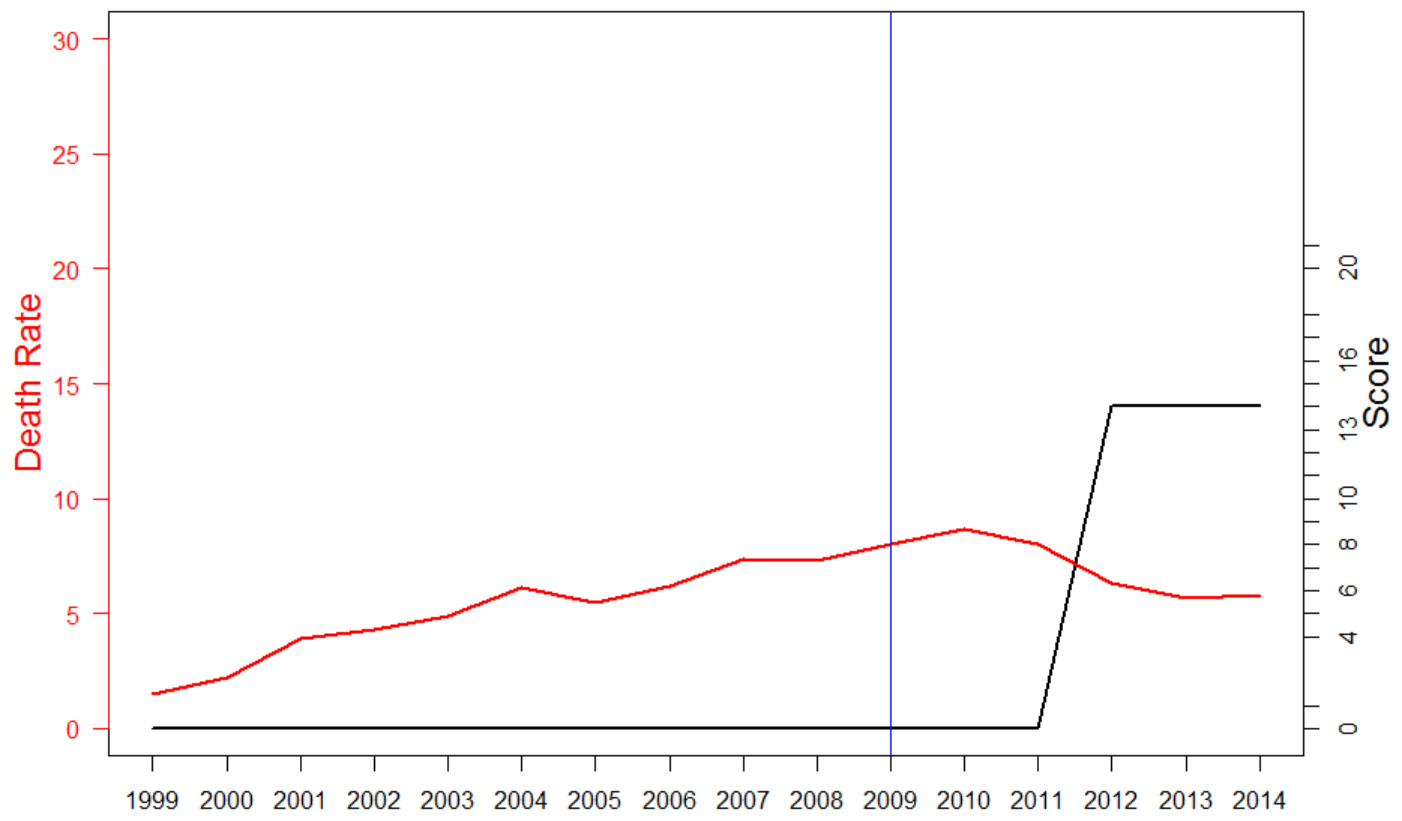
- Total possible score of 23.
- Throughout series: range: 0 to 21; mean of 5.19

Figure 2: Score of Prescription Monitoring Programs

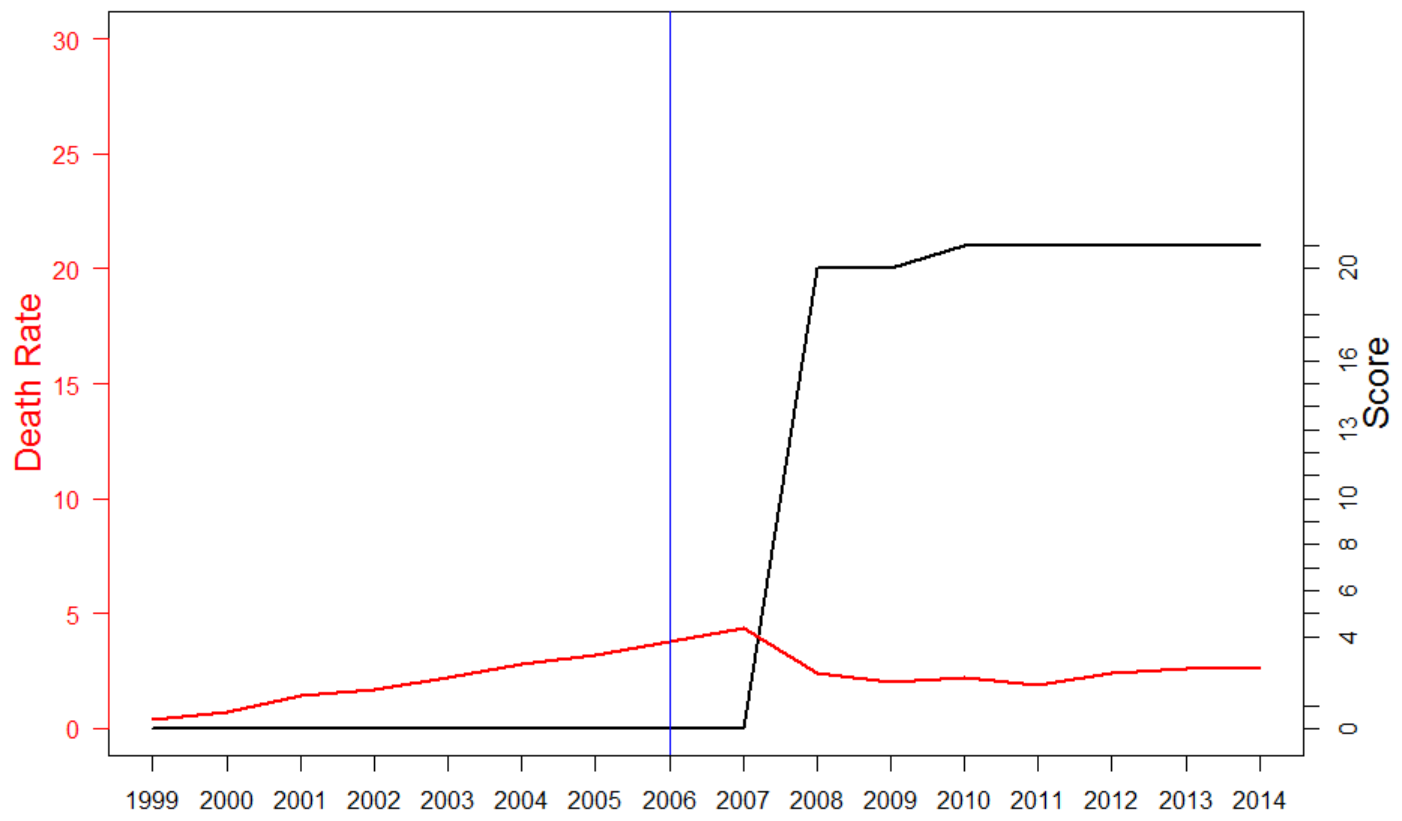


Note: Number of states with operational PMPs denoted by n.

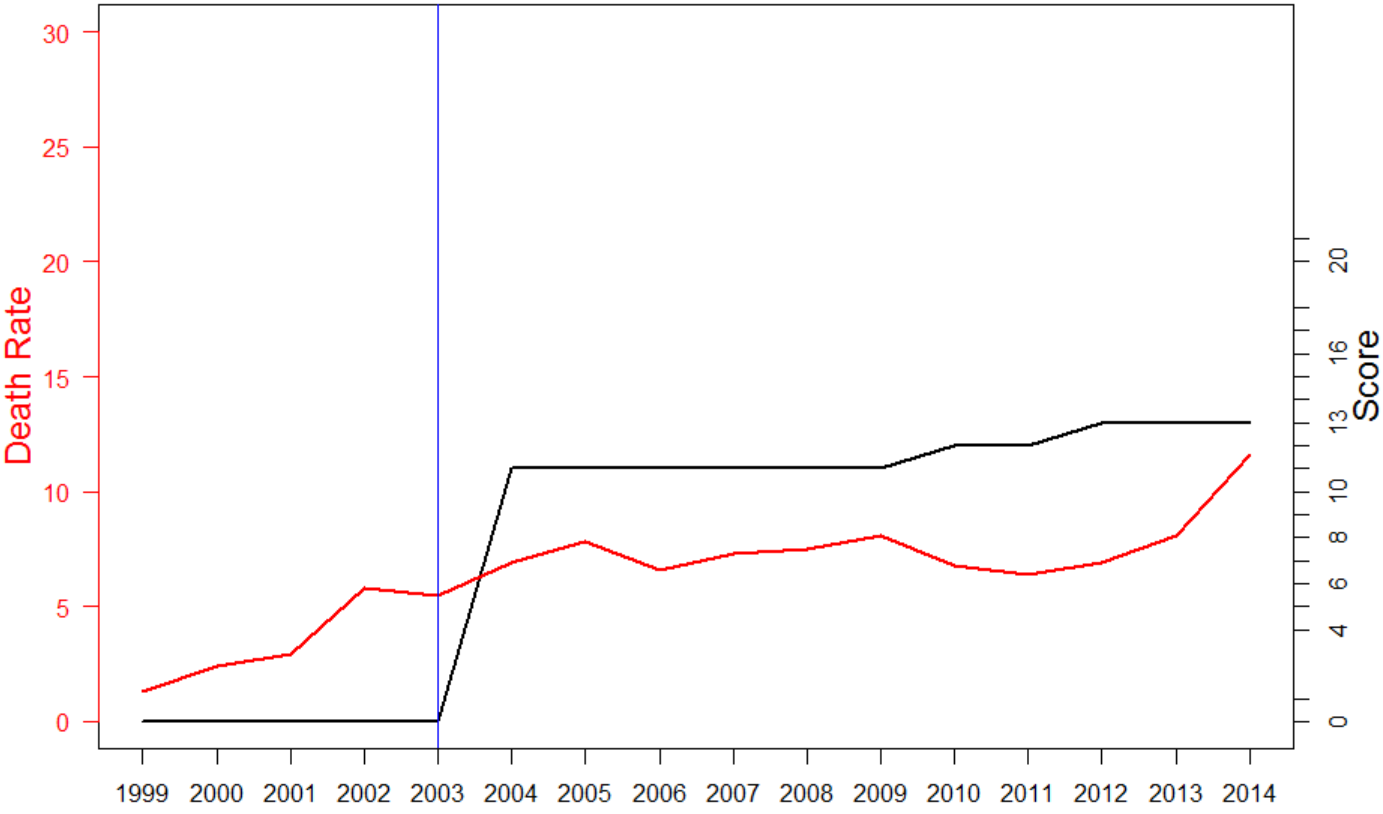
# Florida



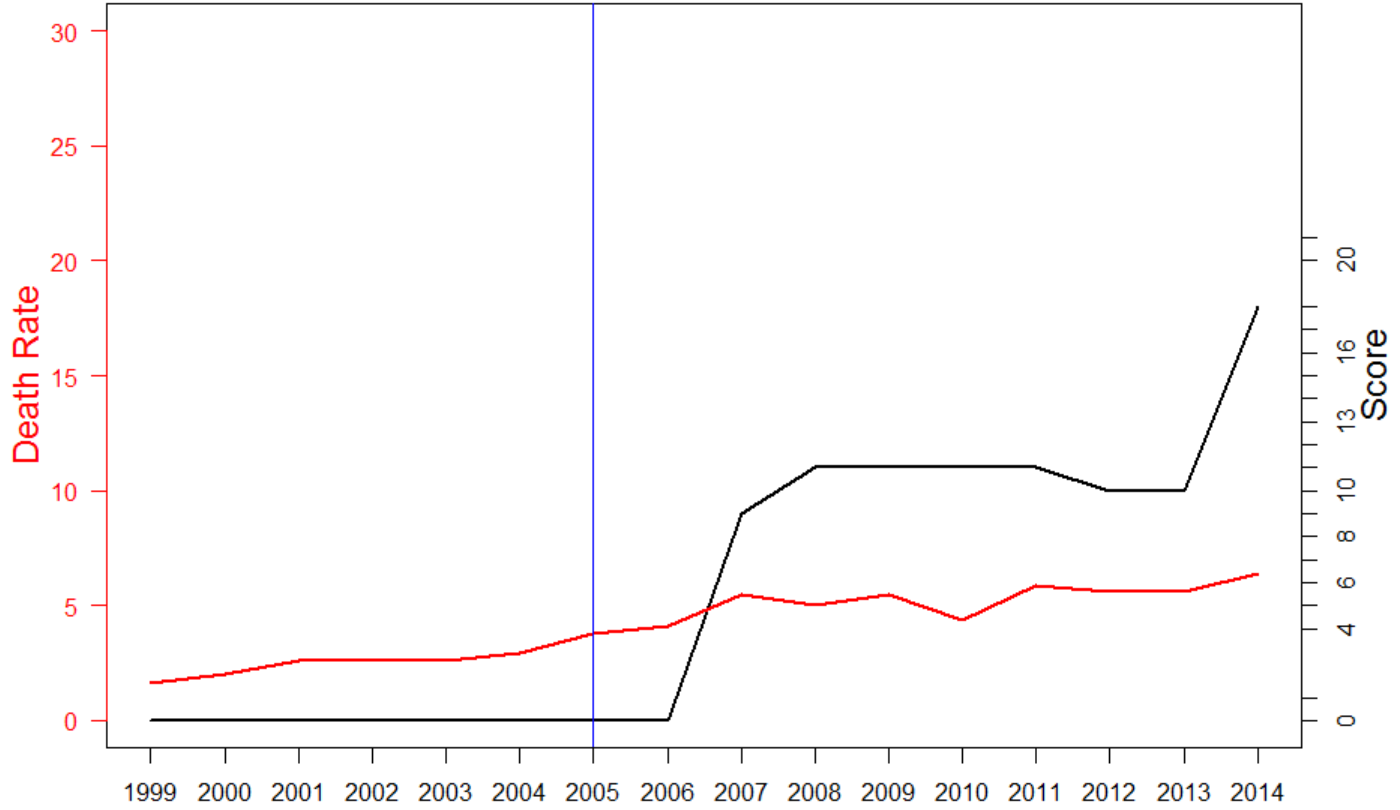
# Louisiana



# Maine



### Colorado



# Results and Discussion



# Results

- **Dependent variable:** log of death rate, range of -1.6 to 3.38, mean of 1.25.

		All Observations n=816		No PMP n=396		PMP Operational n=420		Correlation with OPR Overdose Rates
	variable	mean	sd	mean	sd	mean	sd	PMP operational
1	Score	5.19	5.85	--	--	10.04	4.15	0.37
2	Schedule 3	0.45	0.50	--	--	0.87	0.34	0.35
3	Disclosure	0.29	0.46	--	--	0.57	0.50	0.29
4	Access by police	0.46	0.50	--	--	0.89	0.32	0.34
5	Access by prescribers	0.42	0.49	--	--	0.82	0.39	0.37
6	Frequency	1.12	1.32	--	--	2.17	1.04	0.36
7	Prescribe	0.03	0.16	--	--	0.05	0.22	0.14
8	Share	0.13	0.34	--	--	0.26	0.44	0.13
9	Evaluation	0.09	0.29	--	--	0.18	0.38	0.18
10	Oversight	0.18	0.39	--	--	0.35	0.48	0.09
11	Retention time	2.10	2.30	--	--	4.08	1.48	0.33
12	Funding	0.69	1.07	--	--	1.33	1.17	0.24
13	Naloxone	0.11	0.31	0.03	0.18	0.18	0.38	0.19
14	Samaritan	0.08	0.27	0.02	0.15	0.13	0.34	0.19
15	Pain clinic laws	0.03	0.18	0.00	0.05	0.06	0.24	0.10
16	MMJ Dispensary	0.09	0.29	0.03	0.17	0.15	0.36	0.15
17	White	80.81	13.58	81.01	13.18	80.62	13.96	0.16
18	Income	55624.5	8520.98	57073.09	9117.29	54258.68	7681.92	-0.17
19	Education	86.42	3.65	86.95	3.59	85.92	3.64	0.009

# Results

	Model I $\hat{\beta}$ [95% CI] N=816	Model IV $\hat{\beta}$ [95% CI] N=816
<b>Regressors</b>		
<b>Score (continuous)</b>	<b>-0.01* [-0.02, -0.002]</b>	
<b>Score<sup>a</sup> (class)</b>		
1st quartile		-0.005 [-0.17, 0.16]
2nd quartile		0.041 [-0.1, 0.18]
3rd quartile		<b>-0.20** [-0.36, -0.03]</b>
4th quartile		<b>-0.19* [-0.39, -0.012]</b>
<b>Agency<sup>b</sup></b>		
Law Enforcement		-0.32*** [-0.46, -0.18]
Department of Health		-0.036 [-0.20, 0.12]
Consumer Protection		-0.06 [-0.28, 0.16]
Professional and licensing		0.086 [-0.1, 0.27]
Other		0.18 [-0.02, 0.37]
<b>Naloxone</b>	-0.04 [-0.23, 0.15]	0.002 [-0.17, 0.17]
<b>Good Samaritan Laws</b>	0.06 [-0.18, 0.3]	0.03 [-0.19, 0.24]
<b>Pain Clinic Laws</b>	-0.11 [-0.32, 0.1]	-0.10 [-0.33, 0.13]
<b>Med. Marijuana Dispensary</b>	-0.17* [-0.35, -0.009]	-0.18** [-0.34, -0.02]
<b>Education</b>	0.02 [-0.02, 0.06]	0.02 [-0.02, 0.03]
<b>White</b>	-0.02 [-0.9, 0.05]	-0.03 [-0.09, 0.03]
<b>Income</b>	-0.00001 (0, 0)	-0.000008 (0, 0)
$R^2$	0.74	0.75
$\sigma_u$	0.65	0.73
$\sigma_e$	0.32	0.32
$\rho$	0.80	0.84

<sup>a</sup>Ref=no PMP; <sup>b</sup>Ref=no agency; <sup>c</sup>Confidence intervals are too small to report. Attorneys General offices were dropped from output because they were time invariant as California and Pennsylvania had AG-administered PMPs that predate our time series.

\*\*\* Significant at the 1 percent level. \*\* Significant at the 5 percent level. \* Significant at the 10 percent level.

# Discussion

- Use of legal data improves measurement on explanatory variables.
- Improves analysis of policies.
- How to improve legal measures to better approximate PMP strength?

# Discussion

- How do we improve adoption of minimal standards for PMPs?
- Can use legal data for further analysis
  - LCA to determine combinations of regulatory mechanisms

# Questions?

Please contact us with any questions at:

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# Thank you to today's presenters

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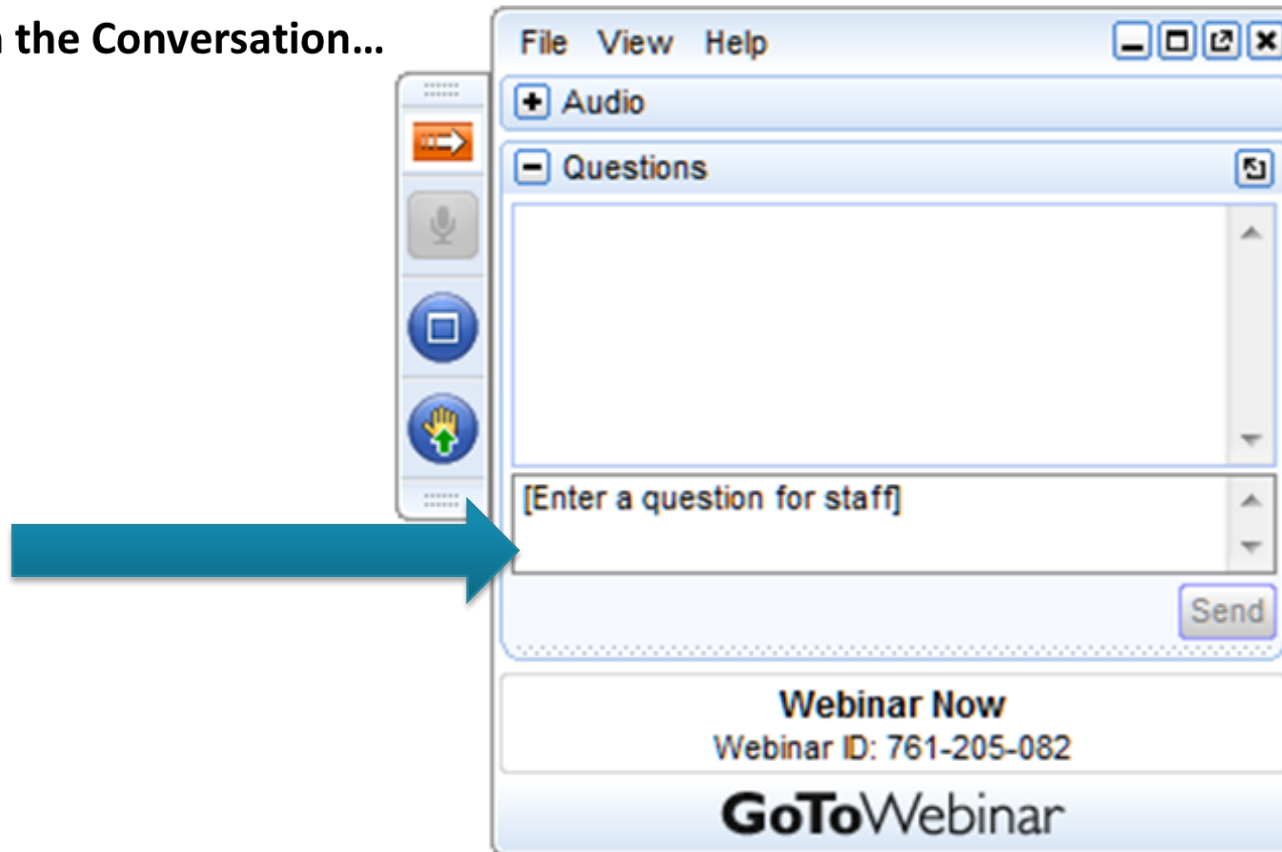
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**Bryce Pardo**  
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# Questions or Comments?

Join the Conversation...





# Today's Moderator and Presenters

Now taking questions.



**Moderator**  
**Jennifer Ibrahim, PhD**  
Temple University College of  
Public Health



**Scott Burris, JD**  
Temple University Beasley  
School of Law, Center for  
Public Health Law  
Research



**Lindsay Cloud, JD**  
Temple University  
Beasley School of Law,  
Center for Public Health  
Law Research



**Bryce Pardo**  
University of Maryland,  
School of Public Policy

# Thank You!

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See the webinar event page on the ASPPH website for a link to the **archived webinar**:

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Thank you!