

IPS03: The Use of E-Prescribing, EPCS and Related Technologies During a Global Pandemic

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Presenters & Topics

- **Jaime Y. Smith, PhD, MAE**, Surescripts, Arlington, VA
Speakers Bios, Overview of Presentation, and An Overview of E-Prescribing and EPCS During the COVID-19 Pandemic
- **G. Caleb Alexander, MD, MS**, Johns Hopkins Bloomberg School of Public Health
Department of Health Outcomes and Biomedical Informatics, Baltimore, MD
“The Opioid Epidemic and EPCS”
- **Pooja Babbar, MBA**, Point of Care Partners, Hollywood, FL
“EPCS, PDMPs, and the Opioid Crisis”
- **Talisha Searcy, MBA, MAE**, Technical Strategy and Analysis Division, Office of the National Coordinator for Health IT, Washington, DC
“Impact of Electronic Prescribing of Controlled Substances on Opioid Prescribing: Evidence from I-STOP Program in New York”

Learning Objectives

After participating in this session the learner should be better able to:

- Understand the impact of electronic prescribing of controlled substances (EPCS) on opioid prescribing patterns.
- Learn about challenges and possible solutions to integrating electronic health information to address the opioid epidemic.
- Understand the current trends in e-prescribing and EPCS use during the COVID-19 pandemic
- Demonstrate a broad awareness of evidence-based approaches to address the opioid epidemic.
- Discuss opportunities for greater use of electronic health information to improve the safety and quality of prescribing and broader clinical care.

What is e-prescribing?

E-prescribing is the use of health technology, specifically a computer, handheld device, or other tool with software that **enables prescribers to transmit a patient's prescription** (for controlled and non-controlled substances) **electronically to the pharmacy of the patient's choice.**¹

According to HRSA, "e-prescribing gives providers an important tool to **safely** and **efficiently** manage patients' medications. Compared to paper or fax prescriptions, **e-prescribing improves medication safety**, provides better management of **medications costs**, **improves prescribing accuracy and efficiency**, and **increases practice efficiency** while **improving health care quality** and **reducing health care costs.**"²

Overall Benefits of EPCS to address opioid epidemic

COMBAT THE OPIOID CRISIS WITH HEALTH IT KEY BENEFITS OF ELECTRONIC PRESCRIBING OF CONTROLLED SUBSTANCES



Enhances Patient Safety

Provides alerts to prevent drug-to-drug and drug-to-allergy interactions, inappropriate dosing, duplicate therapies and patient status, such as pregnancy or breast-feeding.



Improves Accuracy

Reduces errors inherent in paper-based prescribing, including illegible handwriting, misinterpreted abbreviations and unclear dosages.



Reduces Fraud and Drug Diversion

Ensures prescriptions are securely transmitted from provider to pharmacy without the risk of forgery or alteration.



Reduces Drug Misuse and Abuse

Allows providers to see patients' medication histories at the point of care, which can identify if patients are "doctor shopping" or are exhibiting other behaviors associated with drug abuse.

Improves Workflow Efficiencies

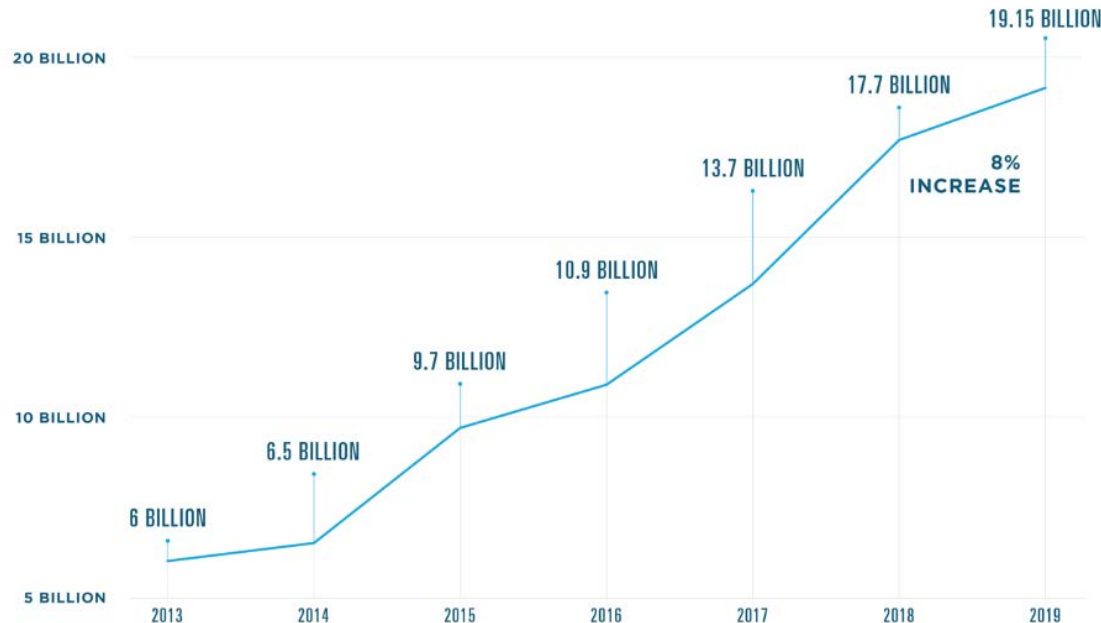
Streamlines all prescribing into a single workflow thus eliminating the need to switch between workflows (electronic for some meds and paper for others).



National overview: Surescripts network stats

NEARING 20 BILLION NETWORK TRANSACTIONS

Surescripts processed 19.15 billion transactions in 2019, an 8% increase from 2018.



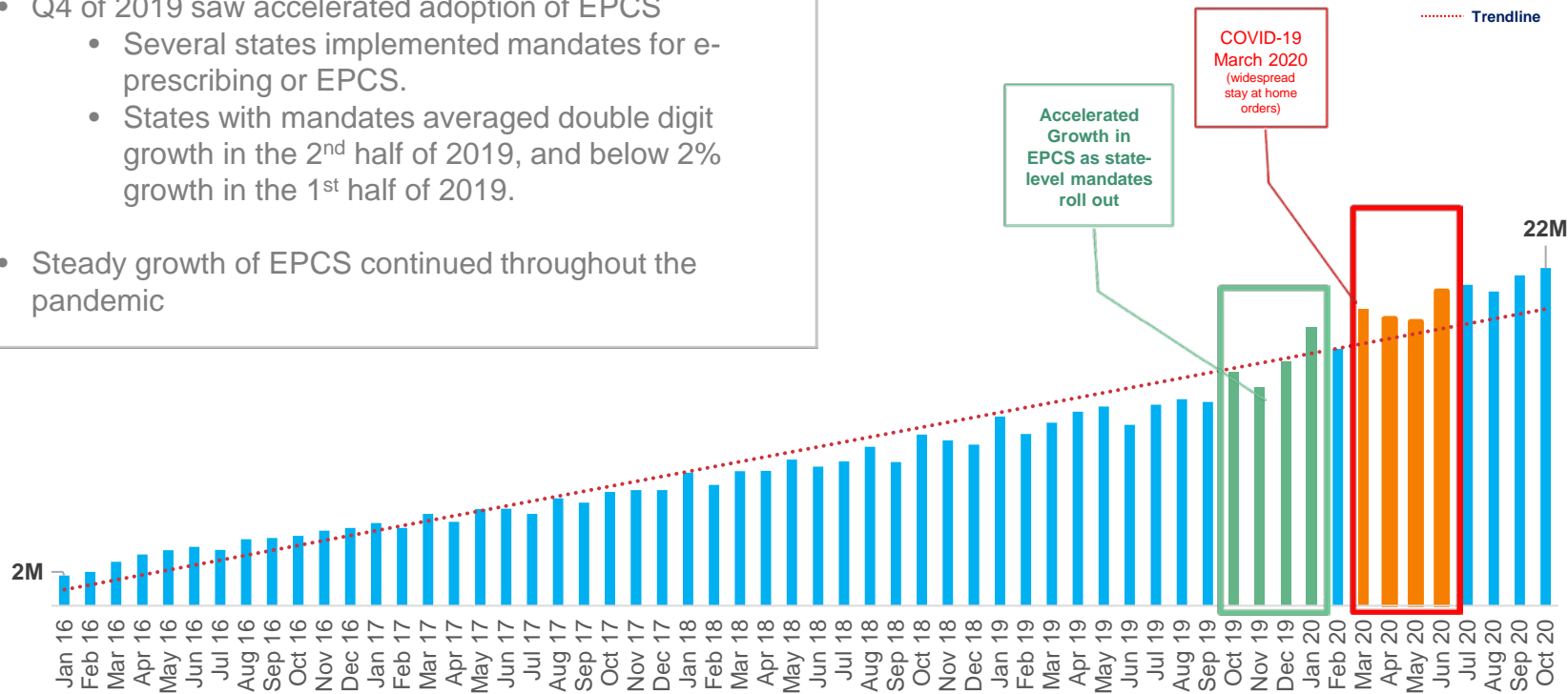
New E-Prescription Volume Jan 2016-Oct 2020

- Initial decrease in e-prescription volume (Apr-May 2020)
- Coincides with COVID-19 related stay at home orders
- Volume is increasing (June – October 2020), but not yet back to pre-COVID expected levels



New EPCS Volume Jan 2016 – Oct 2020

- Q4 of 2019 saw accelerated adoption of EPCS
 - Several states implemented mandates for e-prescribing or EPCS.
 - States with mandates averaged double digit growth in the 2nd half of 2019, and below 2% growth in the 1st half of 2019.
- Steady growth of EPCS continued throughout the pandemic



Conclusion

The COVID-19 pandemic underscores the importance of e-prescribing and related technologies to allow for continuity of care for patients and the overall delivery of patient care.

- EPCS adoption and use is still growing.
- EPCS use has the potential to **streamline prescriber workflow, improve medication safety, and enable efficient pain management for patients.**
- As e-prescribing and EPCS mandates continue to roll out, **we should expect to see an increase in the number of prescribers using EPCS** which will help health care providers integrate prescription information into EHRs, while improving patient safety and reducing diversion and fraud.
- Surescripts 2019 NPR <https://surescripts.com/news-center/national-progress-report-2019>
- Surescripts EPCS <http://getepcs.com/>

Thank you!

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The Opioid Epidemic and EPCS

The Use of E-Prescribing, EPCS and Related Technologies During a Global Pandemic
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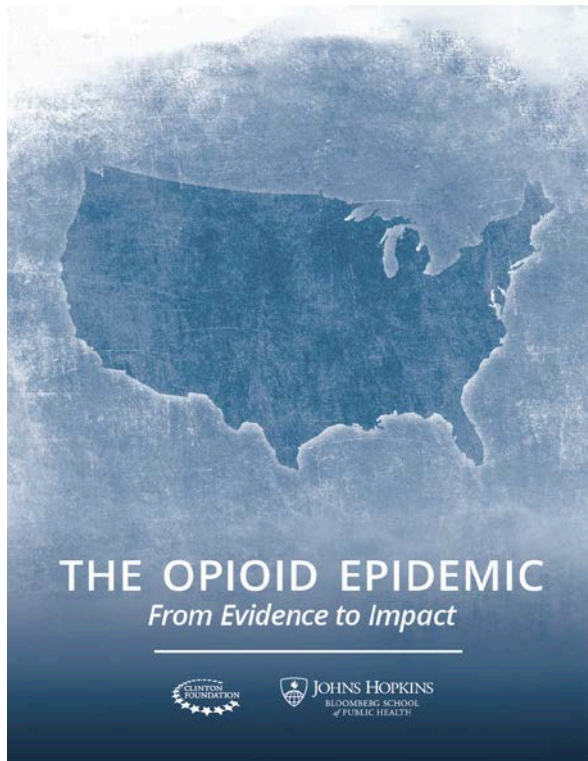
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Dr. Alexander is past Chair and a current member of the U.S. Food and Drug Administration's Peripheral and Central Nervous System Advisory Committee; has served as a paid advisor to IQVIA; is a co-founding Principal and equity holder in Monument Analytics, a health care consultancy whose clients include the life sciences industry as well as plaintiffs in opioid litigation; and is a member of OptumRx's National P&T Committee. These arrangements have been reviewed and approved by Johns Hopkins University in accordance with its conflict of interest policies.



Broad, multifaceted approaches needed



Section 1: Optimizing Prescription Drug Monitoring Programs

Section 2: Standardizing Clinical Guidelines

Section 3: Engaging Pharmacy Benefits Managers And Pharmacies

Section 4: Implementing Innovative Engineering Strategies

Section 5: Engaging Patients and the General Public

Section 6: Improving Surveillance

Section 7: Treating Opioid-Use Disorders

Section 8: Improving Naloxone Access and Use

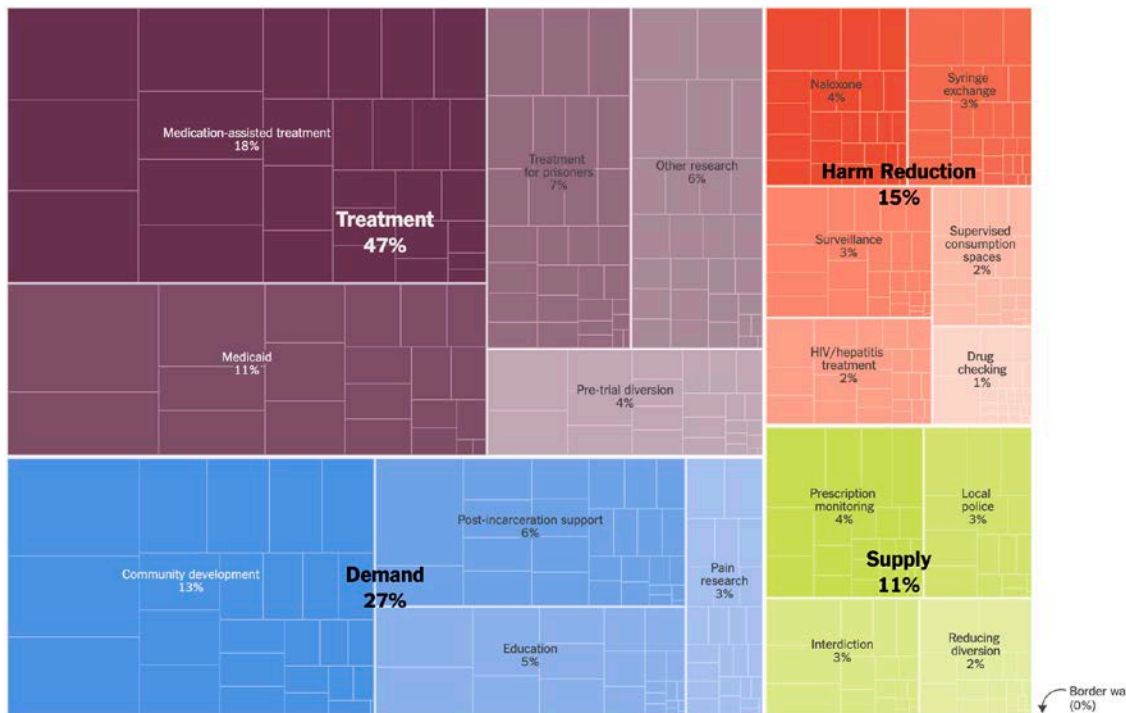
Section 9: Expanding Harm Reduction Strategies

Section 10: Combating Stigma

Technological Solutions Are One Puzzle Piece

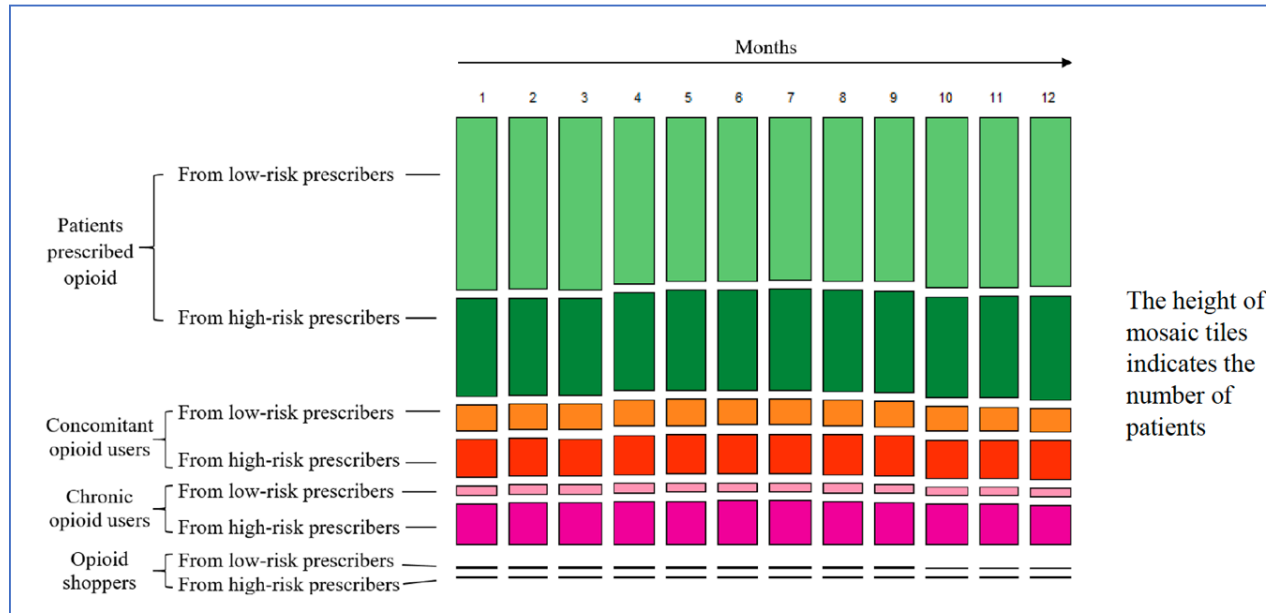
How a Police Chief, a Governor and a Sociologist Would Spend \$100 Billion to Solve the Opioid Crisis

By JOSH KATZ FEB. 14, 2018



J Katz, NY Times, February 14, 2018.

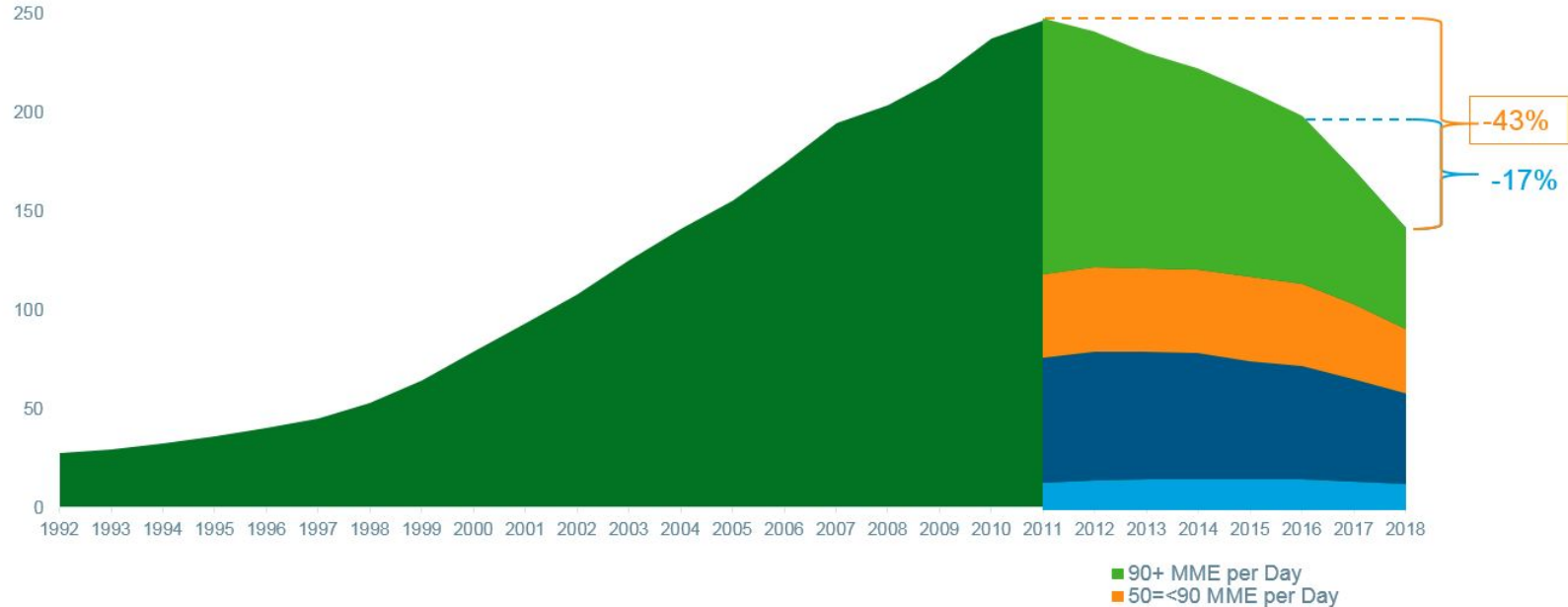
Opioid Volume Drives Morbidity and Mortality



Chang et al. Addiction. 2017.

Prescription opioid volume peaked in 2011 at 246 billion milligrams of morphine and has declined by 43% to 141 billion

Narcotic Analgesic Dispensed Volumes in Morphine Milligram Equivalents (MME) Bn



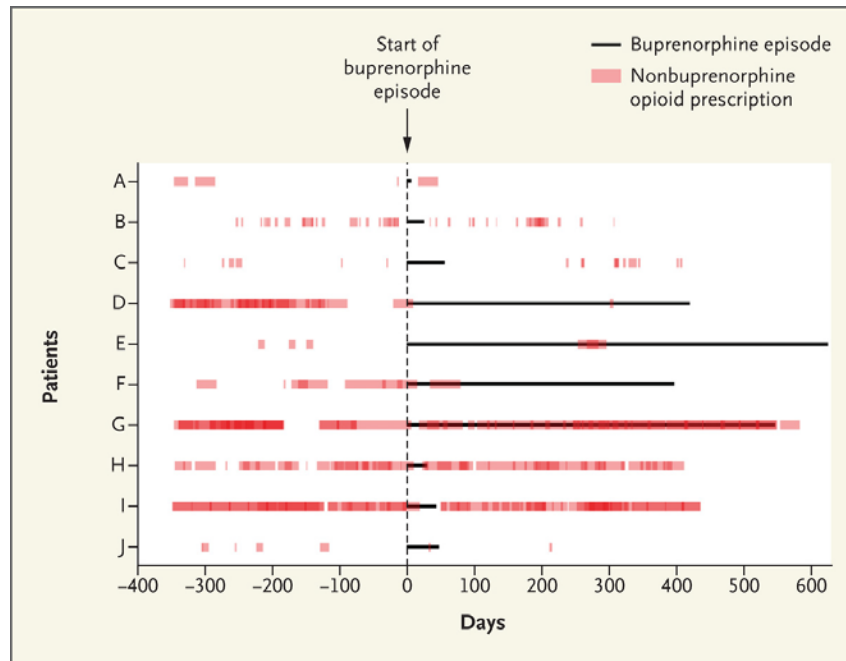
Source: IQVIA National Prescription Audit, Dec 2017; IQVIA Xponent, Feb 2019

A report by the IQVIA Institute: Medicine Use and Spending in the U.S.: A Review of 2018 and Outlook to 2023

Perspective

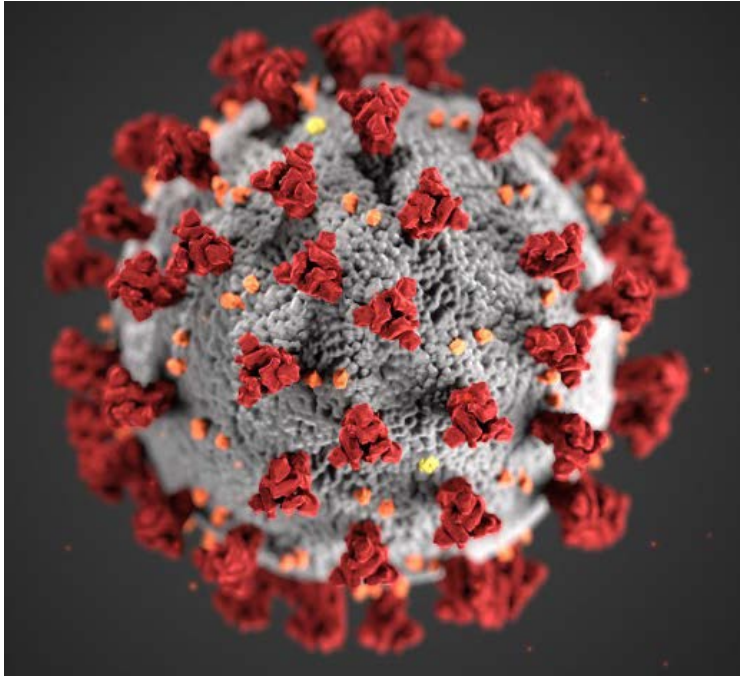
Moving Addiction Care to the Mainstream — Improving the Quality of Buprenorphine Treatment

Brendan Saloner, Ph.D., Kenneth B. Stoller, M.D., and G. Caleb Alexander, M.D.



NEJM. July 5, 2018.

Pandemic Adds New Urgency to Efforts



The Bottom Line

- Opioid oversupply has been one important driver of the opioid epidemic
- EPCS can help to improve the safety and security of controlled substance prescribing (but no amount of oxycontin or fentanyl safely and securely delivered to a patient who doesn't need it is a good thing!)
- PDMPs also contain a lot of valuable information that clinicians simply don't have easy access to at the point-of-care
- “Fierce urgency of now”

Thank you!

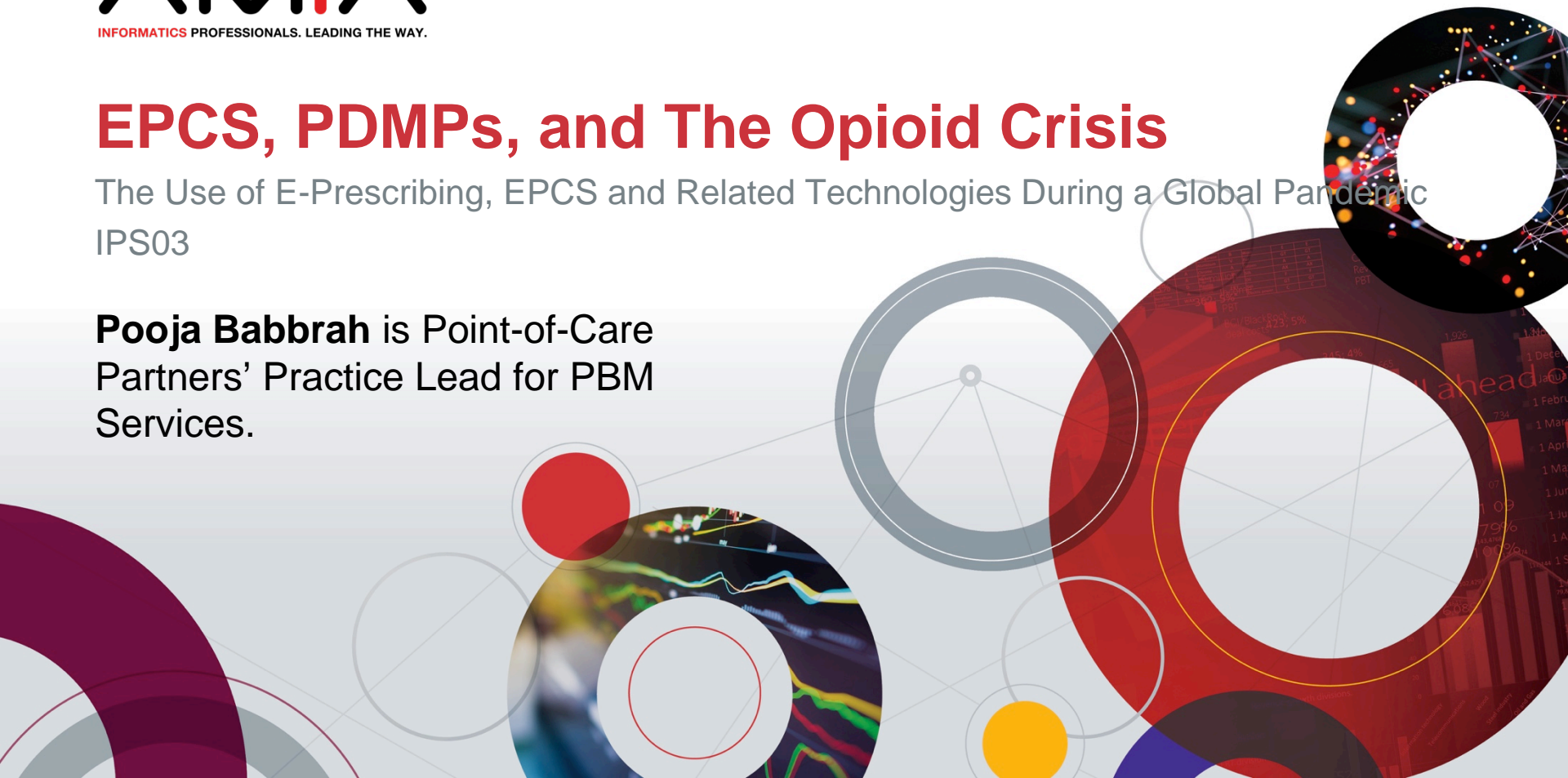
Email me at: galexand@jhsph.edu



EPCS, PDMPs, and The Opioid Crisis

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Pooja Babbar is Point-of-Care Partners' Practice Lead for PBM Services.



Existing “Requirements” in the Interim Final Rule

Interim Final Rule released in 2010, allowing use of EPCS



Use of “certified”
applications (Part
1311 audit)



Identity
proofing



Set Access
controls to limit
unauthorized use



Two-factor
authentication

Barriers and Feedback from Prescribers

- Identity Proofing Process can be cumbersome and a barrier to entry
- Confusion around Logical Access Control for solo practices
- No easy workflow if using a mobile device (iPhone or iPad) as two-factor authentication for mobile workflow cannot be on same device
- Biometrics on mobile devices not available



Recently, the DEA reopened comments to give the industry chance to provide feedback on the March 31, 2010 IFR “in anticipation of subsequently publishing a final rule.”

Interim Final Rule: Reopening of Comment Period



DEA is seeking guidance on the following barriers:

- *Identify Proofing and Logical Access Control:* Can IDP and LAC be done remotely through video or other means
- *Two-Factor Authentication:* Are practitioners using universal second factor authentication (e.g., Near-Field Communication (NFC), Bluetooth, or USB);
- Are practitioners using cellular phones as a hard token, or as part of the two-factor authentication? Is short messaging service (SMS) being used as one of the authentication factors used for signing a controlled substance prescriptions?
- *General feedback on barriers to adoption*

Use of EPCS and Medication History

- Report published in 2018
- Review of impact of mandatory EPCS and Prescription Drug Monitoring Program information in medication history workflow on Opioid crisis



Source: <https://www.pcmanet.org/wp-content/uploads/2018/04/Savings-from-Mandatory-Use-of-EPCS-FINAL-1.pdf>

Findings from the Study

EPCS with Comprehensive medication history helps inform prescribing decisions which can in turn...



Overprescribing and Overuse

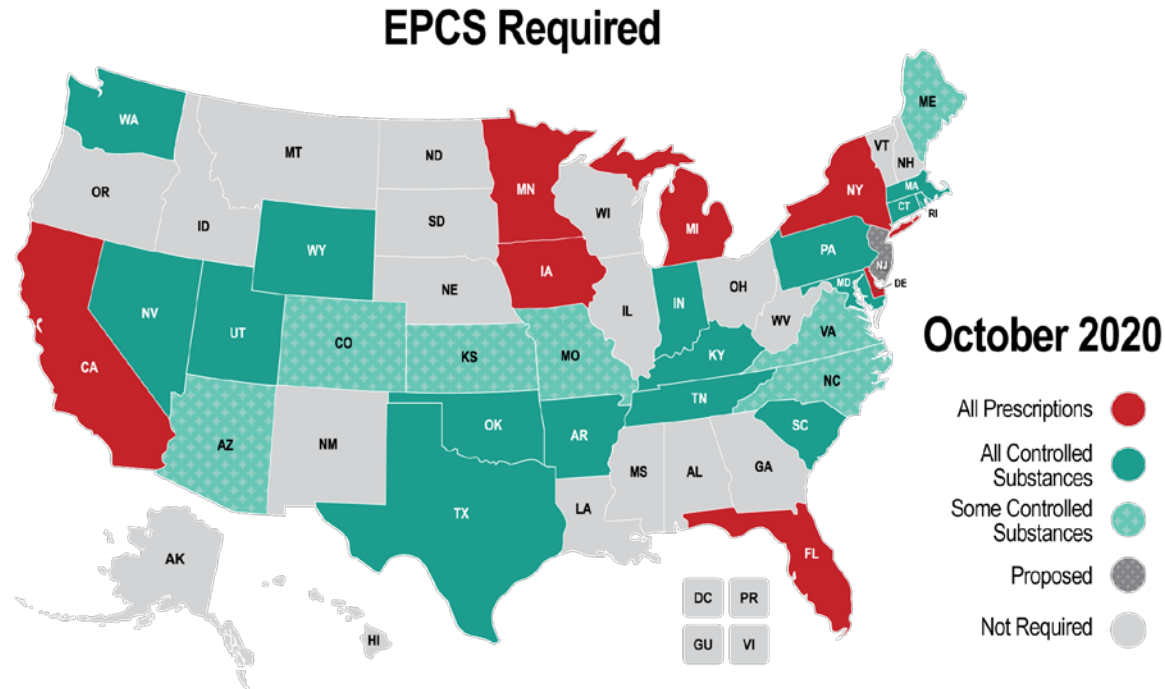


Reduce Fraud and Abuse and Diversion



Improve Efficiencies for Physicians,
Pharmacies and Patients

Mandatory EPCS Prescribing

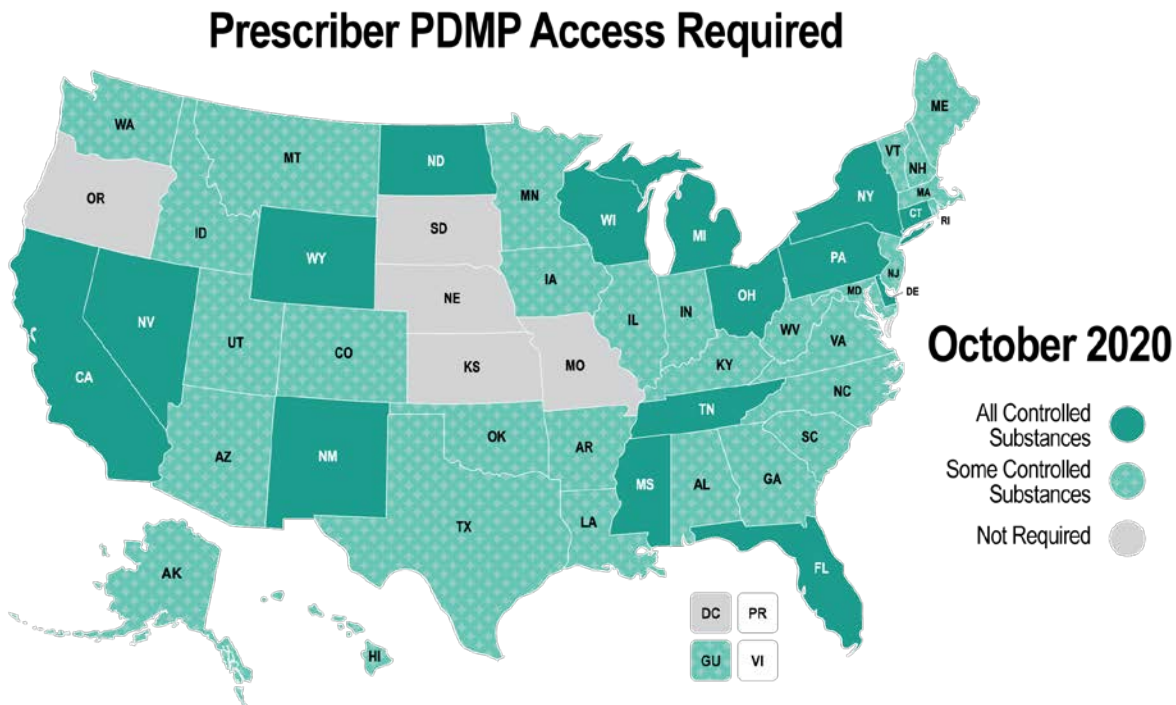


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Prescription Drug Monitoring Program (PDMP)

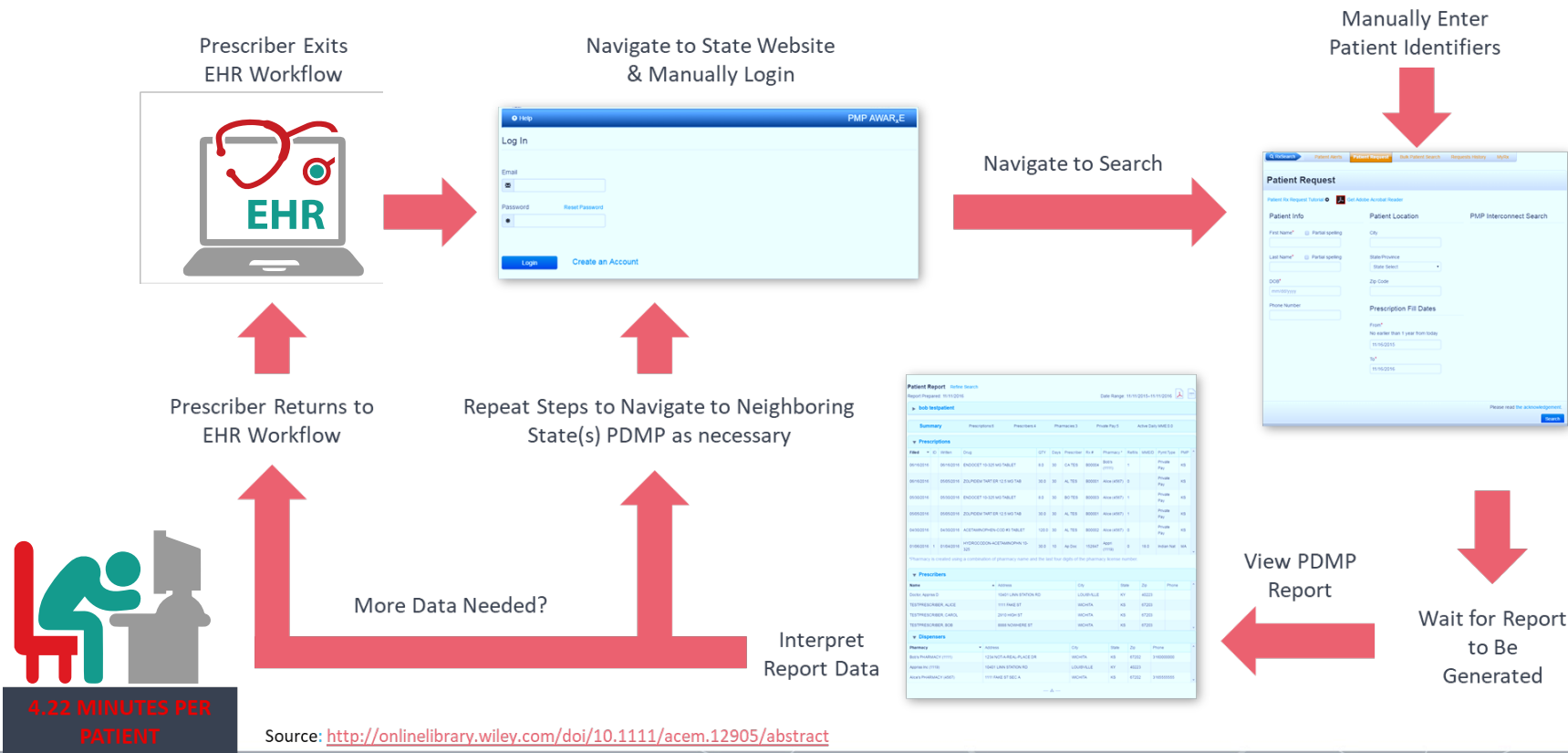
- PDMPs began primarily as a **law enforcement tool** to stop diversion
- More recently, focus has been on **clinical decision and patient support** aspects of PDMP data
- Access to patient PDMP profiles have historically been
 - **Optional** for prescribers
 - Accessed **outside** of the clinician workflow via a web portal
- Multi-state PDMP access is needed and introduces more complexity

Mandatory PDMP Access when Prescribing Controlled Substances



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PDMP Workflow



EHRs as part of the solution



**EHRs can be part of the Solution by
Improving Prescriber access to PDMP
Data in the workflow**

Table 1: Patient List

Pat ID	Patient Name	DOB	Address
1	ROBERT SPURGEON, ROBERT M	10/27/1957	1450 DOWDY DR, LEXINGTON, KY
2	ROBERT SPURGEON, ROBERT M	10/27/1957	1450 DOWDY DR, LEXINGTON, KY
3	ROBERT SPURGEON, ROBERT M	10/27/1957	1450 DOWDY DR, LEXINGTON, KY

Table 2: Prescription History

9/20/2014		9/20/2014		1/7/2015		2/26/2015		4/17/2015	
Drug Name	Patient DOB	Qty	Days	Prescriber Name	Prescriber DEA City	Pharmacy Name	Pharmacy City	Rpt Ts	Qty (Pst)
Fentanyl 750UGHR	10/27/1957	5	15	Robert Spurgeon	Lexington	Region Of Kentucky Pharmacy	Hazard KY	180	2
Alprazolam 150	10/27/1957	30	15	Robert Spurgeon	Lexington	Region Of Kentucky Pharmacy	Hazard KY	180	2
Fentanyl 750UGHR	10/27/1957	5	15	Robert Spurgeon	Lexington	Region Of Kentucky Pharmacy	Hazard KY	180	2
Alprazolam 150	10/27/1957	45	15	Robert Spurgeon	Lexington	Region Of Kentucky Pharmacy	Hazard KY	180	2
Fentanyl 750UGHR	10/27/1957	5	15	Robert Spurgeon	Lexington	Region Of Kentucky Pharmacy	Hazard KY	180	2
Fentanyl 750UGHR	10/27/1957	5	15	Robert Spurgeon	Lexington	Region Of Kentucky Pharmacy	Hazard KY	180	2

Prescribe New Medication Form

* Drug Name: **Vicodin**

Indication: [Dropdown]

* Dosage: [Dropdown]

* Sig: [Text Area]

Duration: [Dropdown] # [Text] Day

* Dispense: [Dropdown] # [Text]

* Refills: [Dropdown] # [Text]

* Start Date: [Text] [Calendar Icon]

* Package: [Text]

Options: ☐ Maintenance Drug
☐ Brand Name Necessary
☐ Samples Given

Comment: [Text Area]

* Prescriber: [Dropdown: User, Admin]

[Add to Favorites] [Add Another] [OK] [Cancel]

PDMP Integration: Best Practices

Access to PDMP Data

Automatic: Automatically requested (Single-Sign-On) based on a triggering event

- Writing a Prescription
- Patient Appointment
- Patient Admission to ER

Manual: Manually requesting data

- Click a link in the EHR or patient record

Unsolicited: Process runs in background

- Secure message sent to providers inbox

Processing PDMP Requests

Automatic: Patient's demographic information automatically passed from EHR to PDMP

Manual: Provider must enter patient demographic manually into request

Unsolicited: Provider must leave current workflow to access patient report

PDMP Integration: Best Practices

Receiving PDMP Data

Discrete Data Elements: Information received from PDMP is individual data elements; EHR must format for display to end-user

Formatted Reports: Data received from PDMP is a formatted, user-friendly report that can be displayed to end-user

Custom: Proprietary connections to individual state PDMPs; may return a mix of discrete data elements and/or customized/formatted report depending upon the state

Processing and Storing PDMP Data

Automatic: Automatically records the results in the transaction history log or patient record

- Dependent upon state regulations

Manual: Prescriber or staff must manually record information in the patient record

- Patient Notes
- Medication History
- Prescription Notes



Impact of Electronic Prescribing of Controlled Substances on Opioid Prescribing. Evidence from I-STOP Program in New York

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Disclosure

I and my spouse/partner have no relevant relationships with commercial interests to disclose.

The views shared in this presentation are my own and do not represent the views of my employer.

State of Opioid Overuse

Opioid overuse is public health problem that is responsible for:

- ❑ 60,000 deaths
- ❑ \$5.5 billion spent on use
- ❑ \$78 billion burden (health care cost, productivity lose, treatment)

Steps are taken to curtail opioid overuse

- ❑ Congress allocated \$1 billion
- ❑ All states but one implemented PDMPs
- ❑ Multiple addiction prevention programs

Electronic Prescribing of Controlled Substances (EPCS)

In March 2016, New York State required all prescribers to EPCS.

What are the benefits of EPCS?

- ☐ Ensures security of prescription
- ☐ Ensures patient safety
- ☐ Provides complete history about opioid use
- ☐ Could save time and cost to patients and providers

Impacts of COVID-19 on EPCS

- ☐ Drug Enforcement Administration (DEA) allows telemedicine visits
- ☐ CMS EPCS mandate

Identify effects of I-STOP on opioid prescriptions two years post implementation

- Outcomes:

- ☐ Opioid expense per prescriber
- ☐ Number of opioid claims per prescriber
- ☐ Number of opioid beneficiaries per prescriber
- ☐ Opioid day's supplied per beneficiary

Identify separate effects for first and second year

Sensitivity analysis

Simulate effects of a policy on states with highest opioid prescription rates –
Tennessee, Oklahoma, Kentucky, West Virginia, South Carolina

Centers for Medicare and Medicaid Services (CMS) Medicare Part D Prescriber Utilization and Payment files

- Years 2014-2017
- Prescriber level panel data

Control for

- Prescriber race, sex, age
- Percent beneficiaries female, black, Hispanic, and white, dual eligible for Medicare/Medicaid
- Average beneficiary risk score and age
- Link with Area Resource File to control for counties' poverty and urban/rural

Apply variant of the lagged dependent variable estimator

$$y_{it} = \sum_k^K \delta_k y_{ik} + X_{it}B + \alpha_t D_{it} + e_{it} \quad \forall t > K$$

where

$D_{it}=1$ if physician i in year t is located in New York state; 0 remaining states

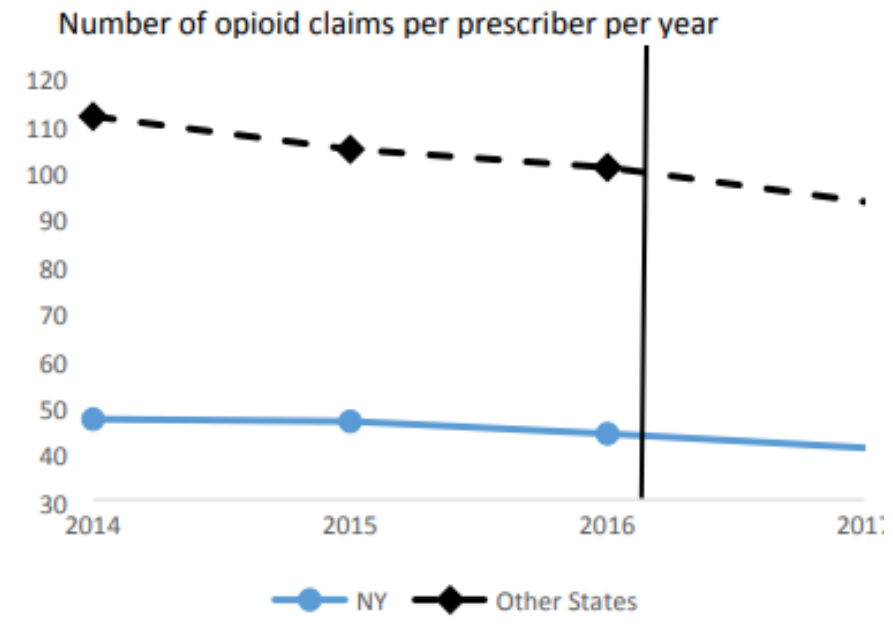
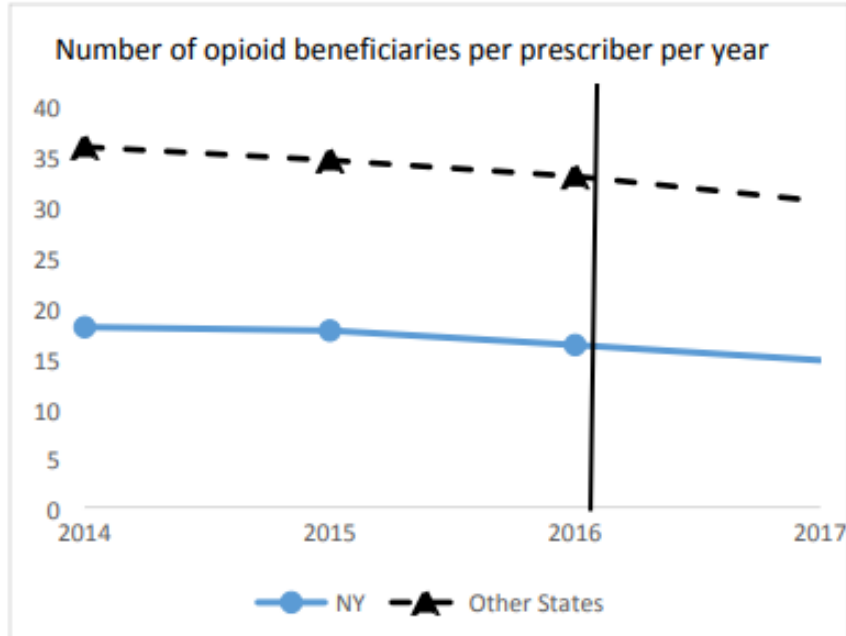
y = vector of lagged dependent variables up to the year policy was implemented

X = vector of covariates

Lagged dependent variables capture unobserved factors correlated with y and D .

Assume unobserved time changing factors take more than a year to impact y .

Rates of Opioid Beneficiaries and Claims Per Prescriber (2014-2017)



Note: Sample contains prescriber level data from the Centers for Medicare & Medicaid Services the Part D Prescriber Public Use File, years 2014-2017

Effects of I-STOP on Opioid Prescribing

	Probability of Prescribing Opioids	Opioid Claim Count	# Opioid Beneficiaries	Day's Supply of Opioids Prescription	Probability of Prescribing Long and Short Acting Opioids	
					Long Acting	Short Acting
	Panel 1: LDV with control variables and occupation fixed effects					
Year ₂₀₁₆	-0.03* (0.01)	-5.7* (0.81)	-1.9* (0.2)	0.5* (0.2)	-0.01* (0.00)	-0.03* (0.01)
Year ₂₀₁₇	-0.03* (0.01)	-1.0 (1.2)	-1.3* (0.3)	0.4 (0.41)	-0.01 (0.01)	-0.04* (0.02)
	Panel 2: LDV with control variables					
Year ₂₀₁₆	-0.03* (0.01)	-4.4* (0.81)	-1.4* (0.2)	0.5* (0.2)	-0.01* (0.01)	-0.03* (0.01)
Year ₂₀₁₇	-0.03* (0.01)	0.2 (0.92)	-0.8* (0.3)	0.52* (0.22)	-0.01* (0.01)	-0.04* (0.02)
	Panel 3: Fixed Effects					
Year ₂₀₁₆	-0.00 (0.01)	3.2* (1.0)	-0.5* (0.2)	1.0* (0.2)	-0.01 (0.01)	-0.01 (0.01)
Year ₂₀₁₇	-0.01* (0.01)	6.3* (1.1)	-0.1 (0.2)	0.9* (0.2)	-0.01* (0.00)	-0.01* (0.00)
Number of Prescribers	1,275,654	715,183	623,370	616,128	1,144,639	1,144,639

Implications of Mandatory EPCS Other States

Simulating effects of EPCS on opioid cost and number of claims prescribed for five states with the highest opioid prescription rates per capita.

	Claims	Opioid Cost, \$
Tennessee	103,416 (8,001)	2,688,816 (208,049)
Oklahoma	44,842 (3,821)	1,121,050 (95,531)
Kentucky	57,403 (4,369)	1,320,269 (101,559)
West Virginia	25,372 (2,099)	507,440 (42,286)
South Carolina	57,987 (4,983)	1,391,688 (115,974)

Conclusion

Implementation of EPCS reduced opioid

- Cost, # of claims, # of beneficiaries per prescriber

Implementation of EPCS slightly increased day's supply

Small attenuation effect in the second year

Limitations

- Effects could be heterogeneous across patients
- Concerns about biases remain

Thank you!

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