Purpose
To create an epidemiological surveillance and evaluation tool based on de-identified, longitudinal data from state prescription drug monitoring programs (PDMPs).

Benefits: Products and Services
- Epidemiological reports on prescribed and dispensed controlled substance prescriptions, within and across states, which can be timelier than health outcome data.
- State-specific reports tailored to state needs.
- Technical assistance regarding monitoring and improving PDMP data quality and patient linking procedures.
- Detection of changes in prescribing and dispensing patterns before they affect health outcomes, potentially assisting in prevention of negative outcomes and/or promotion of positive outcomes.
- Inventory of national, state, and local evidence-based initiatives aimed to facilitate safer prescribing of controlled substances, particularly of opioids.

Overview
Epidemiological Surveillance: The Prescription Behavior Surveillance System (PBSS) uses de-identified data from participating states’ prescription drug monitoring programs (PDMPs) to measure trends in controlled substance prescribing and dispensing as well as indicators of medical and non-medical use, diversion, and inappropriate prescribing and dispensing. De-identification ensures that PBSS does not contain any personally identifiable information.

Evaluation: The PBSS project inventories, assesses the evidence for, and evaluates prescriber initiatives to promote safer prescribing of controlled substances, using the PBSS database when feasible to assess the effectiveness of selected initiatives.

Reports: Each participating state PDMP receives periodic reports on prescription activities in the state as well as activities reflected in the multi-state database. PBSS will also produce specialized reports tailored to participating state needs. Any publication of a report is subject to state review and comment.

Participation: As of March 2015, eleven states have submitted de-identified data to PBSS. Eight other states are in the process of obtaining review and approval to participate.

Database Management
Database: Each participating state submits de-identified data from the state PDMP on a quarterly basis after an initial submission of legacy data, if available.

Data Management: Each participating state has the option of entering into a data sharing agreement with Brandeis University that specifies the de-identified data elements that the state will provide and the responsibilities of Brandeis in managing and using the PDMP data.
Security: Data are maintained securely at Brandeis University. The data sharing agreement specifies how Brandeis will manage, secure and protect the PDMP data.

Protection of Human Research Subjects: The PBSS study protocol is approved by the Brandeis Institutional Review Board and subject to federal regulation.

Access: Data is maintained securely at Brandeis and access by Brandeis research staff is limited in accordance with the IRB-approved protocol. Procedures are in process to provide access by authorized federal researchers.

Costs: Funds are available to reimburse states for costs incurred in de-identifying data and transferring it to Brandeis.

Data analysis
Data are synthesized and analyzed by Brandeis University in accordance with guidance provided by the PBSS Oversight Committee (see Governance). The already de-identified data are aggregated and small table cells are suppressed for reporting purposes to eliminate any risk of indirectly identifying individuals (i.e., no table cell or data point represents fewer than 20 individuals). Examples of reported measures include:

- Overall usage (prescription rates) by drug class and selected drug
- Overlapping prescriptions by drug class and opioid dosage form
- Questionable activity (e.g., multiple provider episodes) by drug class and group of classes
- Potential pill mills
- Potential inappropriate prescribing and dispensing

See attached slides for examples of output from data analyses.

Governance
Sponsors: PBSS is supported by the Centers for Disease Control and Prevention (CDC) and the Food and Drug Administration (FDA) and administered by the US Department of Justice, Bureau of Justice Assistance (BJA).

PBSS Oversight Committee: The project is guided by an Oversight Committee comprised of PDMP Administrators of the participating states, BJA, CDC, FDA, the Substance Abuse and Mental Health Services Administration (SAMHSA) and the IJIS Institute.

Resources
The PDMP Center of Excellence webpage on PBSS has current information on the project: http://pdmpexcellence.org/content/prescription-behavior-surveillance-system-0

Contact
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**Sample Data Analyses**

**Florida, 2013: Proportion of Total Opioid, Stimulant and Benzodiazepine Prescriptions Written by Prescriber Deciles**

*Note:* Above: Over 60% of prescriptions were written by 10% of prescribers in Florida and over 75% were written by 20% of prescribers. Below: Multiple Provider Episode (MPE) rate is a measure of potential doctor/pharmacy-shopping activity (rates presented as episodes per 100,000 state residents).

**California 2012: Multiple Provider Episode Rates by Zip Code**