PDSA Delaware: A Data and Logic Model Driven Prescription Drug and Substance Abuse Change Approach for Delaware

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Data-Driven Multi-Disciplinary Approaches to Reducing Rx Meeting
Omni Shoreham Hotel, Washington, DC
PDSA Delaware Project Overview:

Enhance PMP’s effectiveness to combat prescription drug abuse (PDSA) by:

• merging PMP data with external datasets that will improve surveillance and research.

• increasing coordination of PMP partners via a Prescription Drug Multidisciplinary Action Team (PDMAT).
Research Purpose/Method

• Linking census tract data to DE PMP data via geocoding. BJA award builds on NASCSA award that provided seed money to begin this task.

• Link Delaware “Big Data” (e.g., DELJIS, DHIN, US Census) sources to include Delaware PMP data. (This will require coordination with state agencies if individual level data are used; geocoded data will be de-identified at block or larger level)

• Investigate social trends and variations over time.

• Identify geographical areas for intervention.
Research Questions

• How are prescription drug patterns related to neighborhood demographics and disadvantage, health and healthcare status, crime and disorder?

• How is prescription drug use patterned across neighborhoods?

• How can merged data be used to inform policy change and best practices?
Previous Literature – Gaps

• Existing studies use self-reported data rather than official counts of NMPDU.

• At the neighborhood level, there is little research on the intersection of crime, poverty, income, race, and health indicators with patterns of nonmedical prescription drug use.
Logic Model for Prescription Drug Monitoring and Change in Delaware

**Inputs/Resources**
- PDAC governance infrastructure
- Delaware State partners (OCS, UD, CJC, DPH, DSAMH, MSD, Pharmacy Board, State Police)
- Strong existing PDMP laws enacted in DE
- Strong State data partner in Health Information Design
- Strong existing 24 hour PDMP reporting system
- Existing CJ (DELJIS) and HIE (DHIN) statewide databases
- 100% of DE providers entering data into PDMP
- Existing work with Brandeis based PDMP Center of Excellence (COE)
- Providers required to check when abuse suspected

**Goals, Strategies, and Activities**
- Initial Grant Activities: Convene state partners and make presentation to PDAC
  - Hire appropriate staff and train
- Capacity Building: Implement training in data collection, use and reporting
  - Meet with adjacent state PDMPs to work to link data across state
- Strategic Planning: Develop detailed PDSA Implementation Plan for organizing Change Team
- Implementation:
  - Step 1. Geocode patient ID info and other address data in Delaware PDMP to link with Census, CJ and health databases.
  - Step 2. Analyze linked data to identify areas of high Rx use & sales and compare with U.S. Census, CJ and Health data to identify “hotspots”
  - Step 3. Convene Prescription Drug Multidisciplinary Action Team (PDMAT) and follow PDSA Change Team process for reviewing data and making policy changes
- Evaluation:
  - UD and OCS Data Analyst will take lead in collecting process data from DE PDMP and state partners
  - Evaluation Team working with CJC and OCS will collect outcomes data
  - Evaluation Team will provide feedback on programs to PDMP and CJC/OCS for formative evaluation to enhance program improvement

**Infrastructure Changes**
- Increased Capacity: More staff working on DE PDMP
- Data Collection: Evaluation Team collects required data for national Harold Rodgers evaluation
- Financing: Leverage grant, State, and Partner funding to support PDMP enhancement
- Organizational: PDMP linked with Census and DELJIS by geocoded variables
- Geocoding for HIE (DHIN) put in place
- First reports of linked data provided to PDMP to plan with new data available
- PDMAT follows iterative PDSA process for data review and policy change

**Outputs**
- Units of Service (Intermediate):
  - Reports using the linked data provided to State Agencies including the PDAC and the DHSS Rx Addictions Coalition
  - % of Providers proactively checking PDMP for misuse/abuse increases 30% from baseline
- Patient level reports now include Rx in neighboring states
- DE PDMP reporting to Brandeis COE of enhanced data for both formative and summative data
- Evaluation results and recommendations and plan to expand/sustain

**Outcomes**
- Individual Level
  - Decreased # patients misusing or abusing Rx drugs, particularly opiates
  - Decreased # Providers inappropriately prescribing Rx drugs, particularly opiates
- Community Level
  - Develop targeted interventions for prescription drug “hot spots”
  - Decrease in number of Rx drugs diverted into the illegal market.
  - Increase perception and use of DE PDMP
  - Program to CJ, Public Health, and other partners
- System Level
  - Increased coordination between State partners with role in PDMP (OCS, DPH, AG, State Police)
  - Medicaid given access to system for coordination
  - Publication and dissemination of reports by researchers and providers using linked PDMP, DELJIS, DHIN data
  - Increase in intramural and extramural collaborative PD programming and research funding

**Impact**
- Fewer Drug Diversion Cases
  - Reduced illegal Rx sales
  - Reduced Rx overdose morbidity and mortality
  - Improved system to ensure that pain treatment get to those who really need it
- Sustainable Criminal Justice and Public Health system in Delaware due to PDMAT task force and technologies introduced
Partners and Stakeholders

- Center for Drug and Health Studies (CDHS) at UD
- Pharmacies and Pharmacist Administrator
- Delaware State Partners
  - OCS, CJC, DPH, DSAMH, MSD, Board of Pharmacy, State Police
- Department of Safety & Homeland Security
- Prescription Drug Action Committee (PDAC)
- Brandeis PDMP Center of Excellence (COE)
Step 1: Goals, Strategies, and Activities

- Geocode address data in Delaware PMP
  - Reorganize individual records
  - 140,000 (approximate) monthly prescriptions
- Merge PMP data with external data:
  - U.S. Census Data
  - American Community Survey
  - CJ database (DELJIS de-identified geocodes)
  - Health database (DHIN de-identified geocodes)
Geocoding and Census Tracts

- Geocoding – coding the Earth by providing geographic reference information that can be used for computer mapping.

- Census Tracts – small, neighborhood level subdivisions measured in each decennial census.
  - Smaller than zip codes, larger than census blocks
  - Census Tracts: 2,500 – 8000 people
Step 2: Goals, Strategies, and Activities

- Analyze Merged Data
  - Hotspots
  - Influence of Social factors
  - Prescription Drug Patterns
Step 3: Goals, Strategies, and Activities

- Prescription Drug Multidisciplinary Action Team (PDMAT)
- Plan, Do, Study, Act (PDSA) Model
- Data Driven Policy Recommendations
- Intervention and Effective Changes
Evaluation

- UD and OCS Data Analyst
- Evaluation Team
  - Collects outcomes data
  - Provides feedback for program improvement
Infrastructure Changes

- Increased Capacity
- Data Collection
- Financing
- Organizational
Outputs

• Reporting
  ▫ To state agencies (PDAC, DHSS Rx Addictions Coalition)
  ▫ Patient Level Reports
  ▫ Brandeis PDMP COE

• Increased Provider PDMP Use

• Evaluation Results and Recommendations

• Plans to Expand/Sustain
Outcomes – Individual Level

• Decreased Rx abuse & misuse

• Decreased Rx inappropriate prescribing
Outcomes – Community Level

• Targeted Interventions

• Decreased Rx drug illegal traffic

• Increased DE PDMP use among partners
Outcomes – System Level

• Increased coordination between State partners
• Medicaid access
• Publication of research
• Increased Rx Programming and Funding
Impact: Local

- Identify and combat Schedule II-V controlled drug abuse in Delaware
- Fewer Drug Diversion Cases
- Reduced illegal Rx sales
- Reduced Rx overdose morbidity and mortality
- Improved system of pain treatment allocation
- Sustainable Criminal Justice and Public Health system.
- Improve policy decisions related to prescription drug abuse on a neighborhood level
Impact: National

• A model to link PMP data with multiple state data resources to investigate neighborhood level variations and possible interventions.
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