Creating an Innovative Structured Data Repository

DOJ/BJA Harold Rogers Prescription Drug Monitoring Program Grant

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Time Line

• Grant awarded---October 2018
• Special Condition 45
• Sub-grant to University of Arkansas for Medical Sciences
• Project start date---mid July 2019
• Year 3 extension??
1. **Create a data repository that links PDMP data, ED/hospitalization data and death certificates using semantic integration**

   - ADH collects all the data sets
   - Working with UAMS-based scientists with expertise in biomedical informatics
   - Linking multiple data sets into one set
     - Drug Ontology to map multiple data sets
     - Store in Resource Description Framework technology
     - Merge 3 data sets using Linkage Wiz software
Diagram of Opioid Overdose Algorithm Development

PDMP Data

ED Admission data for Opioid-related Events

Death Data

Predictive Algorithm for Opioid Overdose

Dashboard is still under development
Program Goals

2. Develop a risk prediction tool for identifying individuals at risk for opioid overdose using the linked data sets

- Data from 2014-2017
  - 50% data “training” sample; 50% data “validation” sample
- Patient and Clinical Demographics
  - Age, race, gender, geographical, physical/mental/substance abuse comorbidities
- PDMP prescription data (ingredient, day supply, MME, other controlled medications)
3. Create a graphical user interface for the linked databases and risk prediction tool.

- Programming software (Python) used to create graphical display of the data
- Data updated quarterly with each data deposit from Arkansas pharmacies
- Other possible reports
  - Rates for those at high risk for OD per 100 persons in each county
  - Overlay geographical OD rates with geographical high prescribing rates
  - Mapping of pharmacies and ED/hospitals most commonly used by high risk patients
4. Collaborate with PDMP Advisory Committee and other stakeholders to implement tool

• Primary use will be for PDMP to target providers caring for high risk patients.
  • Use likely to be similar to current system of sending provider-specific reports to educate providers about their own prescribing habits

• Other uses:
  • Guide resource deployment such as naloxone kits, academic detailing, take-back programs, public information campaign
Current Status

• All Data extracted
• Data sets are linked
• Inspecting samples of the linked data sets
• Ontology in process
Contact Information

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