Evaluation & Analysis of Data Sources Related to Occupational Opioid Use and Exposures in Louisiana

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Central Appalachian Regional ERC funded Pilot Project
Contributors

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Work-related issues associated with opioids

- Work-related injuries can initiate prescription opioid use and possibly subsequent misuse of prescription and nonprescription opioids.

- Opioid use post-injury can limit recovery and increase long-term disability, return to work and work retention.

- Opioids can contribute to work-related accidents or injuries by impairing workers’ judgment and ability to focus and function safely.
Pilot project

- **IDENTIFY DATA SOURCES FOR OPIOID-RELATED EXPOSURES**

- **CHARACTERIZE OCCUPATIONAL OPIOID EXPOSURES FROM VARIOUS DATA SOURCES**
  - Identify unique attributes, strengths/limitations
  - Determine data elements to identify work-relatedness & opioid exposure

- **DEVELOP FOLLOW-UP ACTION PLANS FOR OCCUPATIONAL OPIOID RESEARCH**
Death Certificates

Data steward: LDH\Vital Records
Coverage: Statewide
Accessibility: 1-2 year lag; possibility of case-based surveillance

Key data elements

Opioid: Cause of death narrative; underlying and secondary cause of death codes (ICD 10)
Worker: Injury occurred at work [required for all injuries]
Industry & Occupation narrative [regardless of work-relatedness]
Other: Personal Identifiers
### Results:

#### Work-related opioid fatalities

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Work-Related</th>
<th>Work-Related Opioid</th>
<th>% of Total Work-Related</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>88</td>
<td>0</td>
<td>2%</td>
</tr>
<tr>
<td>2013</td>
<td>123</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>2014</td>
<td>123</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>2015</td>
<td>106</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>2016</td>
<td>96</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Total</td>
<td>536</td>
<td>11</td>
<td>2%</td>
</tr>
</tbody>
</table>

#### All opioid fatalities

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Non-Work-Related</th>
<th>Non Work-Related Opioid</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>42,746</td>
<td>158</td>
</tr>
<tr>
<td>2013</td>
<td>44,042</td>
<td>235</td>
</tr>
<tr>
<td>2014</td>
<td>44,326</td>
<td>215</td>
</tr>
<tr>
<td>2015</td>
<td>44,008</td>
<td>254</td>
</tr>
<tr>
<td>Total</td>
<td>175,122</td>
<td>862</td>
</tr>
</tbody>
</table>
Results: Opioid Fatalities (862)

Increase in Number and Rate of Opioid-Related Fatalities

<table>
<thead>
<tr>
<th>Year</th>
<th>Fatalities (#)</th>
<th>Age-Adjusted Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>4.14</td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td>6.34</td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td>5.79</td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td>7.06</td>
<td></td>
</tr>
</tbody>
</table>

Increased Rates among 30-44 year-olds

- Male: 67%
- White: 85%
Opioid-related Fatalities by Occupation

- Protective Service: 2.1
- Farming, Forestry, Fishing: 12.3
- Personal Care Service: 1.7
- Building Service: 4.5
- Office and Administrative: 1.5
- Sales and Related: 1.5
- Installation, Repair: 5.4
- Production: 4.2
- Management|Business: 2.0
- Transportation: 5.1
- Food Service: 6.7
- Professional: 1.7
- Construction and Extraction: 10.7

# fatalities  rate per 10,000
Challenges Assessing Opioid Fatalities

Opioid Overdose Death Determination, Louisiana 2016

Review Identifies 211 additional Opioid Fatalities (+66%)

COD = cause of death
Suicides increased by 369% (62 to 291). This is the most suicides since CFOI began reporting data in 1992.
Inpatient Hospitalizations & Emergency Department Visits

Data steward: LDH\Bureau of Health Informatics
Coverage: Statewide (excludes VA Hospital)
Accessibility: 1-2 year lag

Key data elements

- **Opioid:** Primary & Secondary Diagnostic codes (ICD 9, ICD 10)
- **Worker:** Payment source (Workers' comp)
  Work-related Ecodes
- **Other:** Personal Identifiers (Inpatient data only)
## Results

### Inpatient Hospitalizations (> = 16 y o)

<table>
<thead>
<tr>
<th></th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>Annual Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>557,758</td>
<td>524,678</td>
<td>545,756</td>
<td>542,731</td>
</tr>
<tr>
<td>Work-related</td>
<td>1,834</td>
<td>1,863</td>
<td>1,891</td>
<td>1,863</td>
</tr>
<tr>
<td>Opioid-related</td>
<td>4,359</td>
<td>4,067</td>
<td>4,251</td>
<td>4,226</td>
</tr>
<tr>
<td>Work &amp; Opioid</td>
<td>6</td>
<td>8</td>
<td>10</td>
<td>8</td>
</tr>
</tbody>
</table>

### Emergency Department Visits (>= 16 y o)

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>1,613,655</td>
<td>1,824,476</td>
<td>1,906,576</td>
</tr>
<tr>
<td>Work-related</td>
<td>19,986</td>
<td>20,834</td>
<td>30,735</td>
</tr>
<tr>
<td>Opioid-related</td>
<td>8,391</td>
<td>10,235</td>
<td>12,185</td>
</tr>
<tr>
<td>Work &amp; Opioid</td>
<td>18</td>
<td>24</td>
<td>108</td>
</tr>
</tbody>
</table>
Clinical Data Research Networks (CDRN) funded by Patient Centered Outcomes Institute (PCORI)

- Partnership between LPHI and select health systems in LA and TX: complex data infrastructure creating a single health record for each patient composed of records from any partner institution where care was delivered.

  - Global Patient Identification: ability to link across health systems
  - Common Data Model: method to organize health data into a standard structure

Access to longitudinal clinical data (inpatient & outpatient) spanning multiple years for more than 3 million patients

Key data elements: Primary and secondary diagnostic; procedure codes; payment source; drug prescribing information
**Syndromic Surveillance |**

**Louisiana Early Event Detection System (LEEDS)**

**Data steward:** LDH\Infectious Disease

**Coverage:** Varies – 70% of EDs statewide

**Accessibility:** Web-based system automatically processes ED and urgent care data

Files transmitted\processed daily

Internal text string search function examines symptom information & flags records with a particular health syndrome

**Key data elements**

**Opioid:** chief complaint, admit reason, and diagnosis

**Worker:** chief complaint, admit reason, and diagnosis
Search Criteria

- **Opioid**
  - Opioid-related ICD 10 codes
  - Narrative search: Like "*heroin*" Or Like "*herion*" Or Like "*heroen*" Or Like "*herroin*" Or Like "*herron*" Or Like "*opate*" Or Like "*opait*" Or Like "*opiat*" Or Like "*opium*" Or Like "*opioid*" Or Like "*opoid*" Or Like "*narcotic*" Or Like "*narcan*" Or Like "*naloxon*"

- **Work-related**
  - Narrative search: Like "*work*" Or Like "*job*"
Syndromic Surveillance: Results

<table>
<thead>
<tr>
<th>5 months (August - December 2017): New Orleans area hospitals only</th>
<th>#</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cases</strong>*</td>
<td>168</td>
</tr>
<tr>
<td><strong>Visits</strong></td>
<td>171</td>
</tr>
</tbody>
</table>

**Demographics**
- Male: 117
- Female: 51

**Age:**
- Range (years): 17-87
- Mean (years): 43

**Work-related**
- Chief complaint [mentions injury; possibly occupationally related]: 11

**ICD code**: 0

*1 case had 3 visits at the same hospital*
Emergency Medical Services

Data steward: Louisiana Emergency Response Network

Coverage: Statewide; 35 EMS providers, covers approx. 85% EMS runs

Accessibility: Data sharing agreement in process

Key data elements

Opioid: Medication (= naloxone\narcan)
  Chief complaint
  Primary impression (poisoning\drug ingestion)
  Cause of injury

Worker: Insurance (= Workers’ Comp)
  Work-related
  Occupation; Industry
  Incident location type (e.g, industrial place, street/highway) & address
Workers’ Compensation Data

Data steward: LA Workforce Commission\Office of Workers’ Comp

Coverage: ~90% of LA workers covered by WC;
Lost time claims > 7 days
First Report of Injury (FROI): electronically reported to LWC;
Second Report of Injury (SROI): not electronically reported

Availability: Aggregate counts FROI only

Key data elements
Worker: FROI: Injury type/cause, occupation
Opioid: SROI: Medical information, including Rx info
Next steps

- Finalize analysis
  - Evaluate opioid fatalities among construction workers
  - Link mortality data with hospitalization data
  - Obtain and analyze EMS data
  - Pursue REACHNet data

- Identify additional research, funding, and partnership opportunities
Questions?

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