The Problem

- Drug overdose death has become the leading cause of injury death in the US (incidence higher than deaths caused by motor vehicle accidents)

- 55,403 lethal drug overdoses reported in 2015, of which 20,101 were related to overdose due to prescription pain medications, and 12,990 were related to heroin overdose

- In 2015, 3.8 million (1.4%) people 12 years or older were misusing pain medications

- 26 -35% of those on opioids have an Opioid Use Disorder

- 4 in 5 new heroin users started by abusing prescription pain medications

Inpatient Stays / ED Visits

U.S. National: Opioid-Related Hospital Use
Rate of Inpatient Stays

U.S. National: Opioid-Related Hospital Use
Rate of Emergency Department (ED) Visits

Source: Agency for Healthcare Research and Quality (AHRQ), Healthcare Cost and Utilization Project (HCUP), National Education Iatrogenic Sample (NHS), 2008-2015 (all available data as of 5/15/2018). Iatrogenic stays include those admitted through the emergency department.
Affected Population

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**U.S. National: Opioid-Related Hospital Use by Expected Payer**

Number of Inpatient Stays

Source: Agency for Healthcare Research and Quality (AHRQ), Healthcare Cost and Utilization Project (HCUP), National (Nationwide) Inpatient Sample (NIS), 2008-2016 (all available data as of 3/18/2018). Inpatient stays include those admitted through the emergency department.
26 yo WF with Ulcerative Colitis

HIT's Role In Improving Opioid Tracking In The Hospital

Here's where the gap in opioid exposure is seen clearer than ever: the drugs she was given in the hospital didn't make it into the state record, because they were administered within the hospital and not prescribed to be fulfilled by an outside pharmacy, which is what the state-controlled substance database tracks.
Blind Spots in the Prescription Drug Monitoring Program (PDMP)

PDMP falls short in providing visibility into what and how much is prescribed across each hospital stay.

<table>
<thead>
<tr>
<th>Fill Date</th>
<th>Drug</th>
<th>Qty</th>
<th>Days</th>
<th>Pharmacy</th>
<th>Mgaq</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/1/2023</td>
<td>ALKOLOHOL</td>
<td>50</td>
<td>30</td>
<td>Mallink</td>
<td>1,800.00</td>
</tr>
<tr>
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<td>50</td>
<td>30</td>
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<td>1,800.00</td>
</tr>
<tr>
<td>8/31/2023</td>
<td>ALKOLOHOL</td>
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<td>1,800.00</td>
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</tr>
</tbody>
</table>
### Odds of Chronic Opioid Therapy (COT) Affected by Inpatient Exposure

**Prediction of Future Chronic Opioid Use Among Hospitalized Patients.**
Calcaterra S, Scarbro S, et al.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Odds ratio (95% confidence interval)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milligrams of morphine per hospital day, (ref= 0)</td>
<td></td>
</tr>
<tr>
<td>0.01 &lt; 10</td>
<td>1.65 (1.09–2.52)</td>
</tr>
<tr>
<td>10 &lt; 51</td>
<td>2.08 (1.47–2.93)</td>
</tr>
<tr>
<td>51 &lt; 100</td>
<td>2.23 (1.49–3.35)</td>
</tr>
<tr>
<td>100+</td>
<td>3.37 (2.1–5.41)</td>
</tr>
</tbody>
</table>
The average daily dose received was 68 MME.

A total dose of 50 MME per day was received in 39% of exposed.

A total dose of 100 MME per day was received in 23% of exposed.

26% of overall admissions had charges for opioids on the day of discharge.

300 acute care hospitals; 1,172,339 non-surgical admissions
No change: 89.3%
O+/O-: 3.9%
O-/O+: 6.8%

“It appears that the PDMP more often makes EM providers, who may have higher baseline concern for opioid abuse and/or diversion than other providers who have greater knowledge of patients’ histories, more comfortable prescribing opioids to patients.”

A survey of 140+ hospitals / >1MM Admissions has determined hospitals are seeking:

- Risk assessment in order to manage Opioid related risks (dose, MME, thresholds)
- EMR Tracking / Inclusion of Inpatient Opioid data in EMR
- PDMP Data Integration into the EMR
- PDMP connectivity (credit for querying)
- MME Calculation
Technology’s Role in the PDMP

Alabama, Louisiana, Mississippi, & Florida all use a Vendor Hosted System for PDMP Management

*State depended on additional costs to hospitals OR individual providers
Resource Consumption Considerations

Sample Health System

<table>
<thead>
<tr>
<th>Number of Admits (look ups) per Day (admits/365)</th>
<th>41</th>
<th>Min time [in min]</th>
<th>10</th>
<th>Max time [in min]</th>
<th>20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weekly</td>
<td>103</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All Weekends</td>
<td>82</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Nursing PDMP Look Ups per Year

- 9,616

Nurse Salary +20% Benefit load

- $86,016

Assumptions:

- Nurse perform ½ look-ups and all weekends
- Physician Look-up ½
- Does not include ED, only all Inpt. Admits

<table>
<thead>
<tr>
<th>Cost per Min</th>
<th>Per Minute</th>
<th>Weekly</th>
<th>Daily</th>
<th>Hourly</th>
</tr>
</thead>
<tbody>
<tr>
<td>$0.39</td>
<td>$1,308.00</td>
<td>$188.86</td>
<td>$23.36</td>
<td></td>
</tr>
</tbody>
</table>

Time to Login to PDMP portal and Patient Look up and Record

- 15 minutes (average applied)

Nursing Cost per look up

- $5.94

Total Nursing Cost related to PDMP

- $56,153.13

Physician Look Ups per week (1/2 w no weekends)

- 103

Physician - PDMP Look Ups per Year

- 6,342

Physician Salary (+20% Benefit load)

- $207,960

Assumptions:

- Nurse perform ½ look-ups and all weekends
- Physician Look-up ½
- Does not include ED, only all Inpt. Admits

<table>
<thead>
<tr>
<th>Cost per Min</th>
<th>Per Minute</th>
<th>Weekly</th>
<th>Daily</th>
<th>Hourly</th>
</tr>
</thead>
<tbody>
<tr>
<td>$1.19</td>
<td>$3,996.23</td>
<td>$571.32</td>
<td>$71.41</td>
<td></td>
</tr>
</tbody>
</table>

Time to Login to PDMP portal and Patient Look up and Record

- 16 minutes (max time applied)

Cost per look up

- $19.04

Total entry Level Cost related to PDMP

- $101,741.68

Total Cost for Controlled Substance Look-ups

- $157,894.51

Total Hours consumed to PDMP

- 3,628.77

Cost per Admit

- $10.53

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Technology’s Role in the PDMP

Alabama, Louisiana, Mississippi, & Florida all use a Vendor Hosted System for PDMP Management

*State depended on additional costs to hospitals OR individual providers
### Have you ever had a head injury where you lost consciousness?
- **Yes**: 
- **No**

#### How Many?
- **1**

#### Year(s)
- **1**

### Have you ever had a head injury where you had to go to the hospital?
- **Yes**: 
- **No**

#### How long were you in the hospital?
- **1 day**

#### Which Hospital?
- **Hospital**

---

**Visit for testing 02/06/17**

**PDMP Report Found**

190 Oversed Risk Score
Use this calculator to compare the daily MME equivalent dosing for different opioid medications and to plan post-discharge prescriptions.

Last 24 Hour Dispensed Opioids: 60 MME

Enter Daily Medication Order to Compare:
- HYDROCODONE 5MG ACETAMINOPHEN 325 MG TABLET: 10 MME

Give Amount: 1 tablet Frequency: q12h
Technical – How we do it
Additional Opioid Resources:

http://www2.illumicare.com/opioid-resources
Questions

www.illumicare.com

mehra@illumicare.com