PMP Analytics and their use in State Initiatives: Virginia

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Is the juice worth the squeeze?
Finding the needle in a haystack
Who’s number #1?
Does it matter?
Outline

• Organizational structure
• Statutory authority
• PMP analyses to detect unusual prescribing and dispensing
• Case investigations and findings
• Lessons learned
Organizational structure

Mission: Keep people safe
A shift in paradigm

- Licensing and regulatory board investigations are reactive and complaint-driven
- Use of PMP analyses to initiate investigations is proactive
  - Required statutory authority
Statutory authority

- **Code of Virginia § 54.1-2523.1, effective July 1, 2016**
  - Develop, in consultation with the PMP Advisory Panel, “criteria for indicators of unusual patterns of prescribing or dispensing of covered substances… and a method for analysis of data collected by the PMP”
  - Disclose information about unusual prescribing and dispensing to the Enforcement Division of the Department of Health Professions
PMP analyses to detect unusual prescribing & dispensing

Finding the needle in a haystack
Indicators for prescribers & dispensers

**Highest ranking**
- Top 10, top 5%, etc.
- Outliers, data-driven case selection

**Resource intensive review**
- Select index patients
- Prioritizing

**Daily MME threshold**
- Morphine milligram equivalent
- More similar to traditional complaint-driven investigations
- Focused review, investigation
Highest ranking

Prescribers
- All covered substances: Total prescription count
- Opioids: Total quantity dispensed
- Low PMP usage: Ratio PMP requests to opioid prescriptions

Dispensers
- All covered substances: Total prescription count
- Distance: Mileage between center of zip codes
- Schedule II ratio: Ratio of schedule II to all controlled substance prescriptions
### Prescribers: Opioids & PMP usage

<table>
<thead>
<tr>
<th>NPI classification</th>
<th>Quantity dispensed</th>
<th>Prescription count</th>
<th>PMP requests</th>
<th>Ratio opioid Rx to PMP requests</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prescriber A</td>
<td>Physical Med &amp; Rehabilitation</td>
<td>310,567</td>
<td>3,157</td>
<td>5,201</td>
</tr>
<tr>
<td>Prescriber B</td>
<td>Pain Medicine</td>
<td>298,785</td>
<td>2,498</td>
<td>2,173</td>
</tr>
<tr>
<td>Prescriber C</td>
<td>Nurse Practitioner</td>
<td>283,541</td>
<td>3,876</td>
<td>0</td>
</tr>
<tr>
<td>Prescriber D</td>
<td>Anesthesiology</td>
<td>249,561</td>
<td>2,141</td>
<td>985</td>
</tr>
<tr>
<td>Prescriber E</td>
<td>Family Medicine</td>
<td>209,146</td>
<td>1,653</td>
<td>18</td>
</tr>
</tbody>
</table>

- Ranked by opioid quantity dispensed
- Calculated ratio of PMP requests to total prescriptions for top 50 prescribers

⚠️ Thoroughly investigate if 0 requests

Fictitious data for illustrative purposes only
Dispensers: Opioids & distance patient/prescriber

<table>
<thead>
<tr>
<th>Pharmacy</th>
<th>Patient to Pharmacy</th>
<th>Patient to Prescriber</th>
<th>Prescriber to Pharmacy</th>
<th>Prescription count</th>
<th>Total MME</th>
<th>Days Supply</th>
<th>Avg. MME/d</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>12</td>
<td>11</td>
<td>13</td>
<td>127</td>
<td>245,218</td>
<td>592</td>
<td><strong>414</strong> MME/d</td>
</tr>
<tr>
<td>B</td>
<td>166</td>
<td>168</td>
<td>7</td>
<td>517</td>
<td>1,505,736</td>
<td>11,169</td>
<td><strong>135</strong> MME/d</td>
</tr>
<tr>
<td>C</td>
<td>25</td>
<td>35</td>
<td>21</td>
<td>792</td>
<td>2,044,332</td>
<td>18,929</td>
<td><strong>108</strong> MME/d</td>
</tr>
</tbody>
</table>

- Ranked by average daily MME per prescription
- Pharmacy demographics
- Mileage between zip codes: what constitutes an unusual distance?

⚠️ Contract pharmacies filling orders from long term care (LTC) facilities

Fictitious data for illustrative purposes only
Dispensers: Opioids & distance patient/prescriber

Legend
- pharmacy
- top 3 prescribers
- prescription count by zip code
  - 10 - 15
  - 16 - 22
  - 23 - 98

Top 3 prescribers
Pharmacy B

Fictitious data for illustrative purposes only
Dispensers: Ratio CSII to all CS prescriptions

- >200 CSII prescriptions
- Identified outliers as >2 standard deviations from the mean ratio
  - Exceeding 89%

⚠ Specialty, hospital pharmacies
⚠ Applying to prescribers
Prescribers & dispensers: Daily MME threshold

- Board of Medicine regulations specify requirements of prescribers when dose > **50** and **120** MME/day (18 VAC 85-21-10)
- CDC’s *Guideline for Prescribing Opioids for Chronic Pain* specifies that dosages > **90** MME/day should be avoided due to risk for fatal overdose
- Inappropriate prescribing or dispensing?
Prescribers: Daily MME $\geq 1,500$

- Mean during quarter
- Days at threshold
- Further prioritize using PMP request audit history
- Prescriber specialty
- Is the identified threshold able to detect risky prescribing?

⚠️ Split prescriptions
⚠️ Transdermal patches

Patients dispensed $\geq 1,500$ MME/day during quarter by cumulative days exceeding threshold, 3 months
Case investigations and findings

Is the juice worth the squeeze?
Case investigations and findings, 2016-Sept 2019

Referred for review: 87

Investigation: 59

No action after preliminary review: 28

Closed: 40

Active: 19

Violation: 5 (13%)

No violation: 19

Advisory letter: 5

Undetermined: 11

Sanction: 3
Findings by indicator type, 2016-Sept 2019

Investigation 30
- Closed 17
- Active 13

Violation 1 (6%)
- No violation 6
- Advisory letter 1
- Undetermined 9
- Sanction 1

Investigation 29
- Closed 23
- Active 6

Violation 4 (17%)
- No violation 13
- Advisory letter 4
- Undetermined 2
- Sanction 2

Prescribers, n=18
Dispensers, n=12

MME/day
Prescribers, n=18
Dispensers, n=11
Patient care cases closed by source, 2017-Sept 2019

- Nearly 4,000 patient care cases
  - PMP-generated: 1%
  - Complaint-driven: 8%
  - PMP-generated: 13%

- Violations by source
  - Undetermined: 46%
  - Advisory letter: 7%
  - No violation: 38%
  - Violation: 8%

PMP-generated: 28%
Complaint-driven: 48%
PMP-generated: 13%
Lessons learned
Collaboration is essential

**Enforcement Division**
- Case Intake Manager assigned to receive all PMP-generated reports of unusual patterns of prescribing/dispensing
  - Reviews and validates data
  - Dockets cases
  - Coordinates with board staff
  - Assigns for investigation

**PMP**
- Program-specific analyst
- Software
  - Statistical analysis package (e.g., SAS, R), SQL
  - Spatial analysis (e.g., ArcGIS)
  - Data visualization (e.g., Tableau, Qlik)
Keeping people safe

Prevent overdose deaths

- Prescription count, quantity dispensed, MME
- Co-prescribing naloxone
- Extended release/long acting opioids to opioid naïve patients
- Overlapping opioid and benzodiazepine

Non-adherence to standards of practice

- Minimal PMP utilization
- Buprenorphine for OUD dosing ≥ 24 mg/day, mono-product
- Excess patient population than permitted by DATA waiver

Reduce quantity of high abuse opioids in the community

- Patient distance from prescriber/dispenser
- Private pay opioid prescriptions
- Ratio of CSII to all CS prescriptions
- Branded, single ingredient, and/or highest dosage unit for high abuse medications
What worked? (& also what didn’t)

- **Review and validate PMP data before docketing the case**
  - Case intake cannot be identical to complaint-driven investigations
  - Analysis findings should guide case selection rather than an arbitrary “top 10”

- **Patient-centric measures**
  - Population level statistics are insufficient for licensing board investigations

- **Licensee role-specific measures**
  - Criteria should be customized for prescriber or dispenser
What worked?

- Program-specific analyst
  - Leverage additional data sources
  - Peer-to-peer technical assistance, Council of State and Territorial Epidemiologists (CSTE)
- Apply multiple indicators simultaneously
- Ascertain PMP request audit history
- Stagger case intake and assignment for investigation
- Awareness of laws and regulations, jurisdiction
Acknowledgements

• Josh Boggan, LSW, Case Intake Manager, Enforcement Division

• Michelle Schmitz, Director, Enforcement Division
  • Tuesday, 9am: Suspended, Revoked and Convicted: Effective Cooperation between Law Enforcement and Regulators

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