Using the NC Controlled Substances Reporting System to Identify Providers with Unusual Prescribing Practices: A Partnership of the State of North Carolina, UNC Injury Prevention Center, and the N.C. Medical Board

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Disclosure statement

None of the presenters has any relevant, real or apparent personal or professional financial relationships or conflicts of interest with proprietary entities that produce health care goods and services.
Project Goals

• To develop and validate a set of algorithms from metrics that utilize data from NC’s PMP, the Controlled Substances Reporting System (CSRS), as a screening tool to identify prescribers with unusual and uncustomary prescribing patterns

• To support proactive reporting of these providers to the N.C. Medical Board for further screening and potential investigation
Project roles

- Mr. Asbun: data source for UNC’s analyses and for the NC Medical Board
- Drs. Ringwalt and Schiro: Developed algorithms
- Scott Proescholdbell, N.C. Division of Public Health, Injury and Violence Prevention Branch: matched opioid overdose-related decedents to CSRS data
- Dr. Kirby: assessing utility of the screening tool to identify high-risk prescribers
Key Characteristics of N.C.’s CSRS

- State Controlled Substances Authority: NC Department of Health and Human Services, Division of Mental Health, Developmental Disabilities, and Substance Abuse Services
- Schedules or drugs monitored by the State’s CSRS: Schedule II, III, IV and V
- Requirements for controlled substances reporting system
- Authority to require nonresident pharmacies to report to CSRS
- Types of authorized recipients
- CSRS’s confidentiality
Challenges with Use of PMPs to Detect Inappropriate Prescribing

- Lack of clarity as to which indicators may serve as a good screening tool
- Concerns about the potential for many false positives
- Lack of resources to investigate providers identified by these screens
- Lack of information in PMPs concerning provider specialty (e.g., oncologists, end-of-life treatment specialists)
- Concern that providers treating chronic patients may:
  - Dismiss those prematurely
  - Treat them sub-optimally
  - Decline to accept these patients into their practices
How do Regulatory Authorities Detect Inappropriate Prescribing Now?

- Complaints from patients and colleagues
- Audits of medical records
- Investigations by coroners or chief medical examiners

However, currently, there is no standardized screening tool to apply to Prescription Drug Monitoring Programs for this purpose
Candidates for Metrics Providers who Write the Highest:

- Rates of prescriptions for *daily* doses of opioids >100 milligrams of morphine equivalents (MMEs)
- Average *daily* dose of MMEs
- *Total* MMEs for each prescription
- Rates of prescriptions for following drug classes, irrespective of dose:
  - Benzodiazepines
  - Opioids
  - Stimulants
- Rates of co-prescribed *benzodiazepines + opioids* >100 MMEs
- Temporally overlapping prescriptions
Candidates for Metrics Providers with Patients who:

- Travel long distances from their homes to their:
  - Providers
  - Pharmacies

- Fill prescriptions received from multiple providers (doctor shopping) for:
  - Opioids
  - Stimulants
  - Benzodiazepines
  - Any controlled substance

- Fill prescriptions at multiple pharmacies (pharmacy hopping)
Example of metric distribution

Average daily rate that NC providers write opioid prescriptions for >100 MMEs
Example: Distribution tail

Average daily rate that NC providers write opioid prescriptions for >100 MMEs

Average daily rate that providers write opioids for >100 MMEs
Initial Validation Strategy

- Combed NC Vital Statistics records for deaths ($N=465$) in 2012 related to opioid overdose – used t-codes representing drug-related poisonings
- Recorded DEA #s of providers who had prescribed opioids to these patients within 30 days of their death.
- Any given decedent could have received prescriptions from multiple providers ($N=651$)
- Matched these to metrics relating to:
  - **List 1**: Top 1% of prescribers of controlled substances *in each tail*
  - **List 2**: Top 1% of prescribers in each tail + top 1% of prescribers *for all controlled substances*
    - *Thus List 2 is a subset of List 1*
- Note that because the number of providers in each full distribution varies, the number in the top 1% will also
Co-prescribed benzodiazepines + opioids >100MMEs

Providers who did not prescribe opioids to a decedent

Providers who prescribed opioids to a decedent

n=57

n=31

46%

77%
Temporally overlapping prescriptions

![Bar chart showing the comparison between providers who did not prescribe opioids to a decedent and those who did.](image)

- Providers who did not prescribe opioids to a decedent (10%)
- Providers who prescribed opioids to a decedent (61%)

Legend:
- Blue: Providers who did not prescribe opioids to a decedent
- Red: Providers who prescribed opioids to a decedent

n=165

n=18
Prescriptions for opioids >100 MMEs

- Providers who did not prescribe opioids to a decedent
- Providers who prescribed opioids to a decedent

n=157

34%

n=96

43%
Prescriptions for *any opioids*

- **n=290**
  - Providers who did not prescribe opioids to a decedent
  - **36%**

- **n=176**
  - Providers who prescribed opioids to a decedent
  - **42%**
Prescriptions for any benzodiazepines

- Providers who did not prescribe opioids to a decedent:
  - Highest 1% of this metric: n=271, 30%
  - Highest 1% of this metric + 1% of prescribers: n=167, 32%

- Providers who prescribed opioids to a decedent:

[Bar chart showing prescription levels for benzodiazepines]
Non-Performing Metrics*: Providers with Patients who

- Travel long distances to their
  - Providers
  - Pharmacies
- Are doctor shoppers
- Are pharmacy shoppers

* With this validation effort, at least
Caveats

- Findings from these metrics only represent *an initial screen*.
- Prescribing opioid analgesics within a month of a patient’s death does *not* constitute causality.
- Further, attributing deaths to opioid overdoses is not a perfect science.
- Greater concurrent validity related to providers in top 1% of all prescribers of a controlled substance (2nd bar) may be a function of greater *exposure* – i.e., they wrote the most prescriptions.
- Our PMP:
  - Lacks specialty information
  - Lacked (until recently) payer information
Potential Uses for Study Findings

- State medical boards and other investigatory bodies
  - Potentially problematic providers can be quickly identified
  - Patients who have received problematic levels of prescriptions can be identified and their charts reviewed to determine if the prescriptions were appropriate
  - Metric placement (rate & rank) can assist investigations by demonstrating to providers exactly where they lie on these distributions

- North Carolina Medical Board has just adapted and is now using several of our metrics, namely:
  1. Top 1% of providers who prescribe 100 MMEs/patient/day
  2. #1 above +
     - Any benzodiazepine +
     - Top 1% of all prescribers of controlled substances by volume

- Same technology can be brought to bear on potentially problematic pharmacies (dispensers)
N.C. Medical Board’s Experience

- Legislature felt CSRS information was not being used to its potential.
- We sought to:
  - Develop a structure, within existing legal restraints, to extract information from CSRS database that would identify potentially problematic prescribers in a fair and impartial manner.
  - Avoid targeting legitimate prescribers or causing unintended consequences.
  - Obtain and manage information that would result in a legally prosecutable case.
- Established a Board advisory committee to review the process and outcomes.
Final thoughts and considerations

- Need to assess impact of these efforts on appropriate prescribing patterns. Are pain patients getting what they need? Are they being pushed out of practices, or not being accepted into them? *Primum non nocere.*

- Need further review of metrics to what additional data from NC’s PMP might be used to increase sensitivity, since NCMB investigations are time-consuming and may have a significant negative impact on legitimate prescribers.
Questions?

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