Proactive Fraud, Waste and Abuse Detection With Data Science and Machine Learning

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What is Fraud, Waste and Abuse?
In Health Care

**Fraud**
Intentional misrepresentation of facts to obtain payments of items or services for which one is not entitled

**Waste**
Overutilization of items or services that result in unnecessary costs to the health care system. A misuse of resources

**Abuse**
Incorrect payment without intentional misrepresentation of facts to obtain payment

“inefficiencies”
“bending the rules”
“intentional deception”
Why is Fraud, Waste and Abuse Important?

**Cost**

A recent study from the NHCAA conservatively estimates that 3-10% of the nation’s $2.26 trillion in health care spending is attributable to FWA.

In our book of business we identified:

- Over $135 million in potential FWA exposure
- Over 7% of utilizers potentially affected

**Management**

Lots of traditional Fraud, Waste and Abuse programs are available:

- Are they effective?
- Do they result in actionable solutions and/or cost containment?
- Are solutions timely?
Understanding the Problem

• Aggressive behind-the-scenes marketing schemes
  • Data is everywhere
  • Patients targeted in many ways
• Coordination with prescribers for medications and/or DME
  • Telemedicine
• Wide variety of billing habits, constantly changing over time
  • Excessive quantities
  • Use of high cost generics, non-essential drugs
• Issues start small, escalate exponentially
Example Facebook Ad

Don't let the physiological symptoms of performance anxiety like a racing heart or shaking voice keep you from acing your next big event.

Prescription-strength confidence boost for that next big presentation or interview.

Get connected online to a licensed doctor through Hers for only $10 and see if propranolol is right for you.

Prescription products are subject to doctor approval and require an online consultation with a physician who will determine if a prescription is appropriate. Restrictions apply. This drug has risks. See website for full details and safety information.
Suspicious Behavior—Unconventional and Unproven Treatments
Check the Fine Print

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“[Our company] does not . . . employ any licensed pharmacists.”
“[Our company] is a medical sales and marketing company.”
High Cost Outlier Claim—Doxepin 5% Cream

Doxepin Impact

- Gross Cost
- Utilizers

- 2016: $113,261
- 2017: $1,624,892
- 2018: $10,669

$- $200,000 $400,000 $600,000 $800,000 $1,000,000 $1,200,000 $1,400,000 $1,600,000 $1,800,000

2016 2017 2018

$200,000 $400,000 $600,000 $800,000 $1,000,000 $1,200,000 $1,400,000 $1,600,000 $1,800,000

400 350 300 250 200 150 100 50 -
Recent Catches

• **Naproxen 125 mg/5 ml**
  - $83,000 plan cost
  - 154 claims

• **Chlorzoxazone 250 mg Tablet**
  - $56,000 plan cost
  - 33 claims

• **Gentamicin 0.3% Eye Drops**
  - $8,000 suspicious plan cost
  - 18 claims

Our consultants have since worked with our clients to put UM controls in place and mitigate inappropriate utilization of these drugs.
Identify bad acting pharmacies and prescribers

• Use advanced analytics to understand which entities are most involved with known suspicious behavior

Typical Findings:

• Pharmacies where high proportions of their claims volume are suspicious in nature
• Prescribers with no medical visits to their patients
• Prescribers overprescribing medication unrelated to their specialty, where the member has no diagnosis to indicate medical necessity
• Patterns that suggest aggressive, coordinated efforts to drive up unnecessary and inappropriate spending
3 Level Solution—LEVEL 2

Detect the drugs being used for these activities as fast as possible

- Use an unsupervised machine learning algorithm to detect subtle patterns in massive amounts of data, and make recommendations for clinical review
3 Level Solution—LEVEL 3

Actionable strategies for payors including

• UM recommendations
• Removing pharmacies from network
• Pharmacy audits
• Education letters
Case Study: Re-Purposing of Old Drugs

Gentamicin 0.3% Eye Drops

Red Flags

- Relatively steady number of claims but an 874% increase in plan cost in 12 month period
- Received alongside known suspicious drugs

Findings

- Members receiving 60 bottles per month from prescribers whose specialties were not related (Podiatry, Otolaryngology, Thoracic Surgery)
- Each suspicious claim was about $500

Actions Taken

- Implement quantity limit to ensure appropriate use
- Investigate suspicious prescribers
**Case Study: Extreme Price Increases for Generics With One Manufacturer**

**Chlorzoxazone 250 mg**

**Red Flags**

- 80% of Chlorzoxazone 250 mg claims from one pharmacy
- Frequently being filled alongside “basket” of 4-5 other items known to have suspicious utilization practices
- Cropped up for the first time in 2018

**Findings**

- 250 mg tablet has a single manufacturer where 500 mg has many options
- Claims for the 250 mg Chlorzoxazone had a plan cost of over $2,000 each
- Over $56,000 plan cost for this drug in 2018

**Actions Taken**

- Exclude from coverage
- Identify other products by the same manufacturer
# Case Study: Excessive Quantities

## Naproxen 125 mg/5 ml

### Red Flags

- Unexpected spike in utilization for a liquid formulation of traditional medication
- Bulk of claims coming from pharmacies with suspicious claim patterns
- Often filled alongside other known suspicious drugs

### Findings

- Very few members were minors or had any indication of needing liquid formulation
- Claims were of excessive quantities with a per claim plan cost of around $1,000

### Actions Taken

- PA put in place to ensure appropriate use of high cost dosage form
- Exclude from coverage
**Case Study: Packaging Nutritional or OTC Products as Prescription Drugs**

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**Xyzbac**

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### Red Flags

- Multivitamin and folic acid combined and packaged as an expensive prescription
- Equivalent treatment available at a much lower cost
- Many claims coming from suspicious pharmacies

### Findings

- Plan cost for a 30-day supply was around $1,600
- Over $113,000 plan cost for this drug in 2017 and over $22,000 in 2018 before the exclusion was put in place

### Actions Taken

- Exclude from coverage
- Identify similar nutritional or OTC items re-packaged as prescriptions
Combatting F/W/A Requires a New Approach
Questions?