

# Drug Diversion: How to Avoid Becoming an Unwitting Participant

Kimberly New, JD, RN  
International Health Facility Diversion Association  
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# Kimberly New, Disclosures

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# Target Audience

- The overarching goal of PCSS-O is to offer evidence-based trainings on the safe and effective prescribing of opioid medications in the treatment of pain and/or opioid addiction.
- Our focus is to reach providers and/or providers-in-training from diverse healthcare professions including physicians, nurses, dentists, physician assistants, pharmacists, and program administrators.

# Educational Objectives

- At the conclusion of this activity participants should be able to:
  - Define the scope of the problem of healthcare facility drug diversion in the United States.
  - Describe methods of diversion and how transaction analytics can be used for identification.
  - Describe measures physicians can take to protect themselves from being implicated in diversion schemes.

# Sources of Diversion

The most common sources of diverted medications were from:

1. Drug dealers
2. Sharing and trading
3. Legitimate medical practice
4. Illegitimate medical practice (i.e. pill mills)
5. Theft

(Cicero et al., 2011)

# Scope of the Problem

- All facilities face this issue
- Diversion can't be prevented entirely
- Substantial safety, regulatory and legal risk
- Mitigate risk with formal program, transparency and culture of accountability

# What's at Stake

## Patient Harm:

- Receiving care from impaired provider
- Untreated pain
- Exposure to bloodborne pathogens like Hep C, HIV or to unsafe substances.

(Cody et al., 2002)





# What's at Stake

- DUI accidents
- “Ga Anesthesia Assistant Arrested For DUI Propofol In Wrong Way Crash”



# What's at Stake

## Impact on Diverting Staff:

- Arrest and criminal prosecution
- Civil liability
- Loss of license/imposition of fines by licensing board
- Health related consequences
- Overdose and death

# Ongoing Risks

- 7,200 McKay-Dee and Davis Hospital patients could have been exposed to hepatitis C
- Over 5,000 Scripps Health, Swedish Hospital, Honor Health and Northwest Hospital & Medical Center patients offered hepatitis C testing
- More than 200 patients seen at Shore Medical Center notified of potential exposure to hepatitis C

# What Does a Diverting Staff Member Look Like?



# Who and Why?

- According to a study by the National Council of State Boards of Nursing, approximately 15% of healthcare staff struggle with drug dependence at some point in their career.
- High achiever, stellar employee
- Significant stress in personal life
- Night shift
- Prefer vulnerable patient population
- Likes increased autonomy and less supervision
- Agency worker or traveler
- Legitimate prescription for drug being diverted

Generally, healthcare personnel divert for personal use and are extremely secretive about it.

(National Council of State Boards of Nursing, 2012)

# Occupational factors

- Suppression of feelings and emotions
- Compassion fatigue and burnout
- Physical demands of job
- Injuries and chronic pain
- Ease of access to prescriptions and medication
- Knowledge and sense of control



# Where Can Diversion Occur?

- Anywhere controlled substances are found by anyone intent on diverting



# Drugs of Choice

## Injectables:

- Hydromorphone
- Morphine
- Fentanyl
- Propofol

## Pills and liquids:

- Hydrocodone
- Oxycodone



(Atluri, et al. 2014)



# Drugs of Choice

- Benzodiazepines (lorazepam, alprazolam, clonazepam)
- Drugs to ease withdrawal and enhance impact of opioid (ondansetron, promethazine, diphenhydramine)
- Others (cyclobenzaprine, gabapentin, ketorolac)
- Anesthesia gases

(Fang et al. 2009)

# How Are They Caught?

For the Dates  
5/1/2016 to 5/31/2016

## Anomalous Usage

Group/Sort by: SiteID, NursingUnitID, ItemName/Qty-WtdQty Desc, UserID

Selected Criteria:  
Date Period BETWEEN 5/1/2016 AND 5/31/2016  
Systems IN (Omnicell)  
Nursing Units IN (ER)  
Transaction Types IN (WASTE; RETURN; ISSUE)  
Med Classes IN (Class 5; Class 4; Class 3; Class 2)  
Levels IN (Approaching; Mild; Extreme)  
StdDev > 3  
Population > 3

Report Options:  
Weighted=False; Print Header=False; Display=User Name; My items Transactions=Transactions/Patient

| User Name              | TransC<br>nt | Qty | Wtd<br>Qty           | Pop | Mean | UIF | UOF  | SDev      |
|------------------------|--------------|-----|----------------------|-----|------|-----|------|-----------|
| Site: Nursing Unit: ER |              |     |                      |     |      |     |      |           |
| 0705673                |              |     | Fentanyl 100 Mcg Inj | 104 | 6    | 9.0 | 13.5 | 11.5<br>5 |
| B                      | 52           | 87  |                      |     |      |     |      |           |
| P                      | 29           | 55  |                      |     |      |     |      |           |
| B                      | 32           | 47  |                      |     |      |     |      |           |
| A                      |              |     |                      |     |      |     |      |           |
| R                      | 26           | 34  |                      |     |      |     |      |           |
| A                      |              |     |                      |     |      |     |      |           |
| W                      | 30           | 33  |                      |     |      |     |      |           |
| R                      | 12           | 19  |                      |     |      |     |      |           |
| C                      | 15           | 18  |                      |     |      |     |      |           |
| E                      |              |     |                      |     |      |     |      |           |
| D                      | 10           | 15  |                      |     |      |     |      |           |
| M                      | 10           | 11  |                      |     |      |     |      |           |

| UserName               | TransC<br>Nt | Qty | Wtd Qty                       | Pop | Mean | UIF  | UOF  | SDev |
|------------------------|--------------|-----|-------------------------------|-----|------|------|------|------|
| Site: Nursing Unit: ER |              |     |                               |     |      |      |      |      |
| 0775064                |              |     | Midazolam Pf 5MG Inj          | 40  | 4    | 6.5  | 9.8  | 6.99 |
| D                      | 8            | 6   |                               |     |      |      |      |      |
| R                      | 5            | 5   |                               |     |      |      |      |      |
| 0775122                |              |     | Morphine Preserv Free 4MG Inj | 120 | 7    | 18.0 | 27.0 | 5.37 |
| V                      | 32           | 32  |                               |     |      |      |      |      |
| C                      |              |     |                               |     |      |      |      |      |
| S                      | 25           | 25  |                               |     |      |      |      |      |
| V                      |              |     |                               |     |      |      |      |      |
| T                      | 24           | 24  |                               |     |      |      |      |      |
| M                      |              |     |                               |     |      |      |      |      |
| M                      | 22           | 21  |                               |     |      |      |      |      |
| T                      | 20           | 18  |                               |     |      |      |      |      |
| M                      |              |     |                               |     |      |      |      |      |
| O                      | 17           | 16  |                               |     |      |      |      |      |
| D                      |              |     |                               |     |      |      |      |      |
| C                      | 15           | 16  |                               |     |      |      |      |      |
| C                      | 15           | 15  |                               |     |      |      |      |      |
| X                      |              |     |                               |     |      |      |      |      |
| D                      | 16           | 15  |                               |     |      |      |      |      |
| I                      | 15           | 15  |                               |     |      |      |      |      |
| K                      |              |     |                               |     |      |      |      |      |
| C                      | 14           | 15  |                               |     |      |      |      |      |
| L                      |              |     |                               |     |      |      |      |      |
| R                      | 15           | 15  |                               |     |      |      |      |      |
| P                      | 14           | 14  |                               |     |      |      |      |      |
| R                      |              |     |                               |     |      |      |      |      |
| W                      | 13           | 13  |                               |     |      |      |      |      |

# How Are They Caught?

## Hot List Audit: Total Count

May 2016

| Station | Reason Selected                 | User Name | Count | Mean   | STD    | UAM   |
|---------|---------------------------------|-----------|-------|--------|--------|-------|
|         | Cancelled Transaction Summary   |           | 11    | 2.268  | 1.924  | 4538  |
|         | Discrepancy Transaction Summary |           | 15    | 2.818  | 3.660  | 3.328 |
|         | Refilled Transaction Summary    |           | 82    | 14.000 | 20.988 | 3.240 |
|         | Percocet Usage Summary          |           | 26    | 4.512  | 4.862  | 4.420 |
|         | Hydromorphone Usage Summary     |           | 24    | 4.034  | 4.851  | 4.116 |
|         | Benzodiazepine Usage Summary    |           | 7     | 2.278  | 1.565  | 3.017 |
|         | Discrepancy Transaction Summary |           | 55    | 4.943  | 9.656  | 5.184 |
|         | Cancelled Transaction Summary   |           | 50    | 7.652  | 9.452  | 4.480 |
|         | Refilled Transaction Summary    |           | 460   | 39.538 | 95.456 | 4.405 |
|         | Benzodiazepine Usage Summary    |           | 20    | 3.692  | 3.896  | 4.186 |
|         | Morphine Usage Summary          |           | 23    | 6.342  | 5.111  | 3.259 |
|         | Oxycodone Usage Summary         |           | 14    | 3.552  | 3.334  | 3.134 |
|         | Discrepancy Transaction Summary |           | 37    | 4.862  | 8.110  | 3.963 |
|         | Refilled Transaction Summary    |           | 204   | 23.667 | 46.265 | 3.898 |
|         | Cancelled Transaction Summary   |           | 29    | 4.758  | 6.865  | 3.531 |
|         | Cancelled Transaction Summary   |           | 28    | 4.758  | 6.865  | 3.386 |
|         | Wasted Transaction Summary      |           | 12    | 2.913  | 2.795  | 3.251 |

# Month to Month Comparison

Date Range: 10/1/2015 0:00:00.00 – 10/31/2015 23:59:59.99 Page 1

Site: \*--(All)

Area:

Item: 0705780 – HYRDOMorphone 2mg INJ

Item Control Levels: \*--(0,1,2,3,4,5,6)

Average dose/transaction day: 1.07

Standard Deviation: 0.75

| User Name | User ID | Total Doses | <sup>1</sup> Transaction Days | Doses Per Transaction Day | Num of STD Dev Above Avg | <sup>2</sup> % Chance of Type\Error |
|-----------|---------|-------------|-------------------------------|---------------------------|--------------------------|-------------------------------------|
| Betty     | *****   | 8           | 2                             | 4                         | 3.9                      | 0.01756                             |
| Kelsie    | *****   | 10          | 3                             | 3.33                      | 3.01                     | 0.22233                             |
| Carol     | *****   | 20          | 10                            | 2                         | 1.24                     | **                                  |
| Lisa      | *****   | 24          | 12                            | 2                         | 1.24                     | **                                  |

Date Range: 11/1/2015 0:00:00.00 – 11/30/2015 23:59:59.99 Page 1

Site: \*--(All)

Area:

Item: 0705780 – HYRDOMorphone 2mg INJ

Item Control Levels: \*--(0,1,2,3,4,5,6)

Average dose/transaction day: 1.27

Standard Deviation: 1.01

| User Name | User ID | Total Doses | <sup>1</sup> Transaction Days | Doses Per Transaction Day | Num of STD Dev Above Avg | <sup>2</sup> % Chance of Type\Error |
|-----------|---------|-------------|-------------------------------|---------------------------|--------------------------|-------------------------------------|
| Sheryl    | *****   | 5           | 1                             | 5                         | 3.68                     | 0.03218                             |
| Carol     | *****   | 57          | 12                            | 4.75                      | 3.43                     | 0.06641                             |
| Kelley    | *****   | 3           | 1                             | 3                         | 1.71                     | **                                  |

# Month to Month Comparison

Date Range: 12/1/2015 0:00:00.0 – 12/31/2015 23:59:59.99

Page 1

Site: \*(All)

Area:

Item: 075780-HRDR0morphine 2mg INJ

Item Control Levels: \*--(0,1,2,3,4,5,6)

Average dose/transaction day: 1.48

Standard Deviation: 1.04

| User Name | User ID | Total Doses | <sup>1</sup> Transaction Days | Doses Per Transaction Day | Num of Std Dev Above Avg | <sup>2</sup> % Chance of Type/Error |
|-----------|---------|-------------|-------------------------------|---------------------------|--------------------------|-------------------------------------|
| Tressa    | *****   | 5           | 1                             | 5                         | 3.4                      | 0.07627                             |
| Carol     | *****   | 48          | 10                            | 4.8                       | 3.21                     | 0.13092                             |
| Pauline   | *****   | 7           | 2                             | 3.5                       | 1.95                     | **                                  |
| Mia       | *****   | 37          | 13                            | 2.85                      | 1.32                     | **                                  |

Date Range: 1/1/2016 0:00:00.0 – 1/31/2016 23:59:59.99

Page 1

Site: \*(All)

Area:

Item: 075780-HRDR0morphine 2mg INJ

Item Control Levels: \*--(0,1,2,3,4,5,6)

Average dose/transaction day: 1.48

Standard Deviation: 1.04

| User Name | User ID | Total Doses | <sup>1</sup> Transaction Days | Doses Per Transaction Day | Num of Std Dev Above Avg | <sup>2</sup> % Chance of Type/Error |
|-----------|---------|-------------|-------------------------------|---------------------------|--------------------------|-------------------------------------|
| Carol     | *****   | 53          | 11                            | 4.82                      | 3.4                      | 0.08063                             |
| Tressa    | *****   | 9           | 2                             | 4.5                       | 3.09                     | 0.18624                             |
| David     | *****   | 10          | 3                             | 3.33                      | 1.97                     | **                                  |

# Month to Month Comparison

Date Range: 2/1/2016 0:00:00.00 – 2/29/2016 23:59:59.99

Page 1

Site: \*(All)

Area:

Item: 075780 – HYDROmorphone 2mg INJ

Item Control Levels: \*(0,1,2,3,4,5,6)

Average dose/transaction day: 1.2

Standard Deviation: 1.02

| User Name | User ID | Total Doses | <sup>1</sup> Transaction Days | Doses Per Transaction Day | Num of Std Dev Above Avg | <sup>2</sup> % Chance of Type Error |
|-----------|---------|-------------|-------------------------------|---------------------------|--------------------------|-------------------------------------|
| Carol     | *****   | 68          | 12                            | 5.67                      | 4.36                     | 0.00456                             |
| Julie     | *****   | 7           | 2                             | 3.5                       | 2.24                     | **                                  |
| Reggie    | *****   | 14          | 5                             | 2.8                       | 1.56                     | **                                  |
| Grace     | *****   | 8           | 3                             | 2.67                      | 1.43                     | **                                  |

# Case of ER Nurse CPOE Scheme

- Nurse allowed to input orders for controlled substances in CPOE
- MD electronic verification of orders



# Orders Input on Discharged Patients

|   |   |
|---|---|
| Status<br>Account #<br>Reg Date/Time<br>Facility<br>Location  | DEP ER<br><br>05/03, 12:20<br><br>EMERGENCY DEPARTMENT  |
| Stated Complaint<br>Chief Complaint   | ABD PAIN<br>Abdominal Pain  |
| ED Location<br>Area<br>Station<br>Group   | POD C   |
| Arrival Date/Time<br>Arrival Mode<br>Triage At<br>Time Seen by Provider<br>Discharge Date/Time<br>Discharge Disposition | 05/03/15, 12:20<br>Private Car<br>05/03, 12:29<br>05/03, 13:16<br>05/03, 15:54<br>Discharge to Home |
| Status<br>Priority<br>Condition   | Discharged<br>Triage 3<br>Stable  |

|   |
|---|
| ED Physician<br>ED Nurse<br>Primary Care Provider<br>Family Physician |
| Insurances  |

|                     |
|---------------------|
| Discharge Referrals |
| Discharge Forms     |

**Hydromorphone  
removed  
for this patient  
at 19:08**



# Diversion Scheme Lasted Over a Year

- All falsified orders electronically verified by the physicians
- In many instances the physician never had a role in caring for the patient

# Orthopedic Nurse with Crisis

- Nurse well respected and admired
- “I am going on a weekend trip and forgot to arrange for a refill on my oxycodone”
- MD Jones agreed to prescribe enough for her to get by until Monday

# Orthopedic Nurse with Crisis

- So did MDs Smith, Miller, Price and Patel



# Patient on Comfort Measures

- Nurse favorite on unit
- Pulled three doses of hydrocodone during the night
- Failed to document administration
- When confronted, stated Dr. Chang gave me a verbal order but at the end of the shift he refused to sign the order

# Patient on Comfort Measures

- Dr. Chang interviewed
- “She is a lovely nurse and an extremely good nurse, but I never gave those verbal orders”



# Patient Difficulty Filling Script

- Dr. Haynes has a busy office practice with several staff
- Dr. Haynes regularly rounds on her patients when they are inpatients at ABC Hospital Center
- Ms. Roberts was recently admitted to the hospital and given a new prescription for pain medication by Dr. Haynes
- Ms. Roberts calls to complain that she can't get her prescription filled because she has received too many similar prescriptions in the last month

# Patient Difficulty Filling Script

- Dr. Haynes calls the pharmacy to protest and learns that she has allegedly written several prescriptions for Ms. Roberts in the past 6 months, all of which have been picked up
- What could Dr. Haynes have done to detect this scheme before it had been going on for several months?

# Patient Difficulty Filling Script

- Ultimately Dr. Hayne's nurse, who also works at ABC Hospital Center is caught trying to pick up a fraudulent prescription for Ms. Roberts





# Using Pandora or RxAuditor When a Concern Exists

- When you have a concern about a staff member, voice it early
- Most hospitals have ongoing diversion auditing by nursing leadership and pharmacy
- The individual may already be on a watch list
- Analytics programs can be used to identify diversion schemes and abnormal usage for a particular staff member

(Maslakowski, et al. 2012)

# Report Therapeutic Failure and Unrelieved Pain

- There have been many cases in which a patient has had unrelieved pain despite appropriate therapy
- Tampering must always be a consideration
- Consider the case of the elderly patient who didn't want to “bother” the nurses...

# In Conclusion

- Diversion by healthcare personnel is a common occurrence
- Diverting staff may try to get medical staff to assist in a diversion scheme
- Patients may suffer unrelieved pain or worse
- Most hospitals have the technology to review staff of concern

# References

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# PCSS-O Colleague Support Program and Listserv

- PCSS-O Colleague Support Program is designed to offer general information to health professionals seeking guidance in their clinical practice in prescribing opioid medications.
- PCSS-O Mentors comprise a national network of trained providers with expertise in addiction medicine/psychiatry and pain management.
- Our mentoring approach allows every mentor/mentee relationship to be unique and catered to the specific needs of both parties.
- The mentoring program is available at no cost to providers.

**For more information on requesting or becoming a mentor visit:**

**[www.pcss-o.org/colleague-support](http://www.pcss-o.org/colleague-support)**

- **Listserv:** A resource that provides prompt responses to practice related questions/cases from our PCSS mentors and other experts in the field. To join email: [pcss-o@aaap.org](mailto:pcss-o@aaap.org).



PCSS-O is a collaborative effort led by American Academy of Addiction Psychiatry (AAAP) in partnership with: Addiction Technology Transfer Center (ATTC), American Academy of Neurology (AAN), American Academy of Pain Medicine (AAPM), American Academy of Pediatrics (AAP), American College of Physicians (ACP), American Dental Association (ADA), American Medical Association (AMA), American Osteopathic Academy of Addiction Medicine (AOAAM), American Psychiatric Association (APA), American Society for Pain Management Nursing (ASPMN), International Nurses Society on Addictions (IntNSA), and Southeast Consortium for Substance Abuse Training (SECSAT).

For more information visit: [www.pcass-o.org](http://www.pcass-o.org)

For questions email: [pcass-o@aaap.org](mailto:pcass-o@aaap.org)



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