Background

The tracking of controlled substance usage and waste in a hospital is a necessary but difficult process. Healthcare facilities should have a precise and efficient controlled substance auditing program that analyzes multiple steps of the medication supply process. A program such as this allows quick identification and action on possible diversion, assists with keeping an accurate inventory, and helps to ensure patients are treated safely and are billed correctly. Diversion is a topic that is not always openly discussed and can occur at any point of the medication supply process. This study seeks to assess multiple controlled substance use-reporting systems in order to develop an effective controlled substance auditing program in a community hospital.

Objectives

Primary objectives:
To characterize, evaluate, and when applicable, compare four primary controlled substance use-reporting systems in order to implement a controlled substance auditing program.

Secondary objectives:
• To identify:
  - Common controlled substance use discrepancies.
  - Common medications and amounts involved in controlled substance use discrepancies.
  - Frequencies of controlled substance use discrepancies that occur in specific areas of the hospital.
  - The amount of time it will take to analyze each of the controlled substance use reporting system.

Methods

• This study is IRB approved.
• Secondary objectives:
  - To seek to analyze four primary controlled substance use reporting systems which are as follows:
    1. A third party drug-auditing system that generates monthly reports to assist in managing automated dispensing cabinets (ADC) and identifying dispensing trends across all areas of the hospital.
    2. Un-reconciled Dispense Report produced by the hospital electronic medical record (EMR), identifies instances where a controlled substance was dispensed as an override without an associated order, or, a controlled substance was dispensed without proper documentation of administration on the Medication Administration Record (MAR). This report will be run monthly and 25 orders will be reviewed from each report.
    3. Rx Returns and Wastes Report produced by the hospital ADC software, reports all events where a controlled substance was returned or wasted. This report will be run monthly and 25 orders will be reviewed from each report.
    4. Monthly inventory invoice reports provided by all controlled substance suppliers analyzed monthly alongside the Un-reconciled Dispense Report in attempt to trace the movement of the associated dispensed medication.
    5. Monthly inventory reports are provided by all controlled substance suppliers included in the Narcotic Administration Report (NAR). This report will be run monthly and 25 orders will be reviewed from each report.
• The amount of time it will take to analyze each of the controlled substance use-reporting systems.

Results

Third-party drug-auditing system results

Figure 1. Automated Dispensing Cabinet Override Audit

Table 1. ADC Override Audit

<table>
<thead>
<tr>
<th>Area</th>
<th>Top 3 Overridden Medications</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICU 1</td>
<td>Midazolam 2mg inj. (35), Lorazepam 2mg inj. (35), Fentanyl Drip (20)</td>
</tr>
<tr>
<td>ICU 2</td>
<td>Fentanyl Citrate 100mcg inj. (15), Morphine 2mg inj. (10), Midazolam 2mg inj. (10)</td>
</tr>
<tr>
<td>Med-Surg 1</td>
<td>Morphine Sulfate 2mg inj. (4), Hydromorphone 0.5mg inj. (4), Lorazepam 2mg inj. (2)</td>
</tr>
<tr>
<td>Med-Surg 2</td>
<td>Lorazepam 2mg inj. (3), Morphine Sulfate 2mg inj. (2), Morphine Sulfate 2mg inj. (1)</td>
</tr>
<tr>
<td>ED</td>
<td>Hydromorphone 1mg inj. (4), Lorazepam 2mg inj. (2), Hydromorphone 0.5mg inj. (1)</td>
</tr>
</tbody>
</table>

Figure 2. Un-Reconciled Dispense Report Errors

Discussion

• Of all overridden medications, 28.3% were controlled substances. The ICUs had the most overrides that included controlled substance medications that were related to procedures and pain. Although certain medications may need to be available for override, this data suggests that the list of medications permitted for override needs to be reduced.

• The Un-reconciled dispense report revealed that about 43% of the flagged controlled substance dispenses were documented as not given as wasted and one dispense appeared as returned on the Rx Wastes and Returns Report. This data suggests that patients may need to be better evaluated prior to the medication being dispensed from the ADC and prepared for administration in order to reduce waste. This also suggests that there may be a benefit in better communication between the EMR software and ADC software in order to have a closed controlled substance dispensing system.

References


Disclosures

The authors of this poster have following to disclose concerning possible financial or personal relationships with commercial entities that may have a direct or indirect interest in the subject matter of this presentation:

Hannah E. Bennett: Nothing to disclose
William Stewart: Nothing to disclose

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Implementation and evaluation of a controlled substance auditing program in a community hospital