Using MEDMARX for Reporting and Benchmarking

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Purpose of the Grant: Assist small rural hospitals to...

- Voluntarily report and analyze medication errors
- Identify and analyze system sources of error
  - Compare current medication use system to best practices and prioritize change
  - Conduct root cause analysis, failure mode and effect analysis
- Implement and maintain organizational change
Why Are We Here?

“The problem is not bad people; the problem is that the system needs to be made safer.”

Errors in Our Health Care System

- 44,000 – 98,000 deaths per year due to medical errors
  - 8th cause of death
  - One jet airplane crash per day
- 2.9% - 3.7% of hospital admissions result in adverse events
- Cost $17 - $29 billion/yr
- Adults get 55% of recommended care
Humans work in CAHs, too…

- Drugs given despite allergy
- IV antibiotics not infused
- Concentrated sodium chloride given to patient in error
Role of MEDMARX in the Project

- Provides standardized terminology for data collection and analysis
- A critical tool
  - TELL A STORY WITH YOUR DATA
  - Source of benchmarks
- Overcomes rural barriers to QI
  - Small numbers
  - Limited information management resources
  - Limited human resources
Medication Safety Model (USP, 2004)

Culture

Data Collection

Data Analysis

Plan Change

Implement Change

Assess Impact of Change

MEDMARX
MEDMARX Menu

- Notices
  - Public/Private Notices
  - Messages from UNMC
  - Send Message to USP

- Record
  - New
  - Find and Update/Delete

- Search
  - By Record Number
  - Predefined, Saved, Custom, Graphs/Charts
MEDMARX Menu

- Admin
  - User Administration
    - Enter, Search, Update, Hold/Release & Admin Records
  - Online Forms – not user friendly
  - Facility Profile – Update at least annually when subscription renewed
    - Location of error detail specified
Brief review of record entry

- Continuous approach to data entry
- Review of field lists
- A vs B – why such a big deal?
  - From the patient’s perspective…
  - A means no error
  - B means error occurred but was intercepted…a measure of success
MEDICATION SAFETY REPORTING FORM

Complete as soon as possible after discovering a medication error and giving appropriate patient care.

Check the ONE category that describes the SEVERITY of the error based on harm to the patient:

<table>
<thead>
<tr>
<th>NO ERROR</th>
<th>NO HARM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category A</td>
<td>Circumstances or events have the capacity to cause error</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ERROR</th>
<th>NO HARM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category B</td>
<td>Error occurred but it did not reach patient</td>
</tr>
<tr>
<td>Category C</td>
<td>Error occurred that reached the patient, but did not cause harm (includes errors of omission)</td>
</tr>
<tr>
<td>Category D*</td>
<td>Error occurred that reached the patient and required monitoring to confirm that it resulted in no harm to the patient and/or required intervention to prevent harm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ERROR</th>
<th>HARM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category E*</td>
<td>Error occurred that may have contributed to, or resulted in temporary harm to the patient and required intervention</td>
</tr>
<tr>
<td>Category F*</td>
<td>Error occurred that may have contributed to, or resulted in temporary harm to the patient and required initial or prolonged hospitalization</td>
</tr>
<tr>
<td>Category G*</td>
<td>Error occurred that may have contributed to, or resulted in permanent harm to patient</td>
</tr>
<tr>
<td>Category H*</td>
<td>Error occurred that required intervention necessary to sustain life</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ERROR</th>
<th>DEATH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category I*</td>
<td>Error occurred that may have contributed to, or resulted in patient death</td>
</tr>
</tbody>
</table>

*Complete checklist of monitoring or interventions required for Category D - I errors on the back of the form.

Source of record: Inpatient Outpatient LTC/AL Resident Date of Error: ________ Date of Report: ________

DESCRIBE THE ERROR, how the error occurred, how it was discovered:

__________________________________________________________________________

Check the type(s) of the error:
- Detoxified product
- Drug prepared incorrectly
- Expired product
- Extra dose
- Improper dose/quantity
- Inaccurate labeling
- Inaccurate dosage
- Inaccurate medication
- Incorrect documentation
- Incorrect dispensing
- Incorrect labeling
- Incorrect prescribing
- Wrong route
- Wrong packaging
- Wrong equipment
- Wrong dosage
- Wrong time
- Wrong information
- Wrong medication
- Wrong product
- Wrong procedure
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Check factors that contributed to the error:

- A contributing factor not determined
- Code situation
- Computer system/network down
- Cross coverage
- Distractions and interruptions
- Emergency situation
- Fatigue
- Implant, identification failure
- No 24-hour pharmacy
- No access to patient information
- None
- Patient names
- Similar/same
- Staff, agency temporary
- Staff, floating
- Staff, inexperienced
- Staffing, alternate hours
- Staffing, insufficient
- Workload increase

Check the ONE PHASE where the error ORIGINATED

- Prescribing
- Transcribing/Documenting
- Dispensing
- Administering
- Monitoring

Check the LOCATION of the initial error

- Inpatient Acute
- Skilled Nursing
- Emergency Dept
- Outpatient Clinic
- Outpatient Surgery
- LTC

LEVEL of STAFF REPORTING and MAKING the ERROR – Check if known

<table>
<thead>
<tr>
<th>Reporting</th>
<th>Making</th>
</tr>
</thead>
<tbody>
<tr>
<td>RN</td>
<td>PA</td>
</tr>
<tr>
<td>LPN</td>
<td>MD</td>
</tr>
<tr>
<td>LPN-C</td>
<td>PharmD</td>
</tr>
<tr>
<td>CNA/MA</td>
<td>Pharm tech</td>
</tr>
<tr>
<td>Clerk</td>
<td>RRT</td>
</tr>
<tr>
<td>NP</td>
<td>Student</td>
</tr>
<tr>
<td>NA</td>
<td>Family</td>
</tr>
</tbody>
</table>

MEDICATION(S) INVOLVED (generic name if known), DOSE, FREQUENCY, ROUTE

Patient Age (only): 
Sex: M F
Physician Notified: No Yes
Time of Error:
Number of occurrences: __________________ (range: 1-300)

Check actions taken to avoid future errors:

- Communication process improved
- Education/training provided
- Environment modified
- Formulary changed
- Informed staff who made the initial error

Further suggestions regarding system changes to prevent this error:

********REQUIRED FOR CATEGORY D – I ERRORS********

Check additional interventions/monitoring

- A level of care not determined
- Airway established/patient ventilated
- Antidote administered
- Blood product infusion
- Cardiac defibrillation performed
- CPR administered
- Delay in diagnosis/treatment/surgery
- Dialysis
- Drug therapy initiated/changed
- Hospitalization, initial
- Hospitalization, prolonged 1 – 5 days
- Hospitalization, prolonged 6 – 10 days
- Hospitalization, prolonged > 10 days
- Laboratory tests performed
- Narcotic antagonist administered
- Observation initiated/increased
- Oxygen administered
- Surgery performed
- Transferred to a higher level of care
- Vital signs monitoring initiated/increased
- X-ray / MRI / Other diagnostic tests performed

Thank you for contributing to patient safety and quality of care. Place this form in an envelope marked “Medication Error” and return to your quality assurance coordinator/risk manager.


(Hospital Name: Revised July 2005)
Patient admitted from ER. Admitting nurse made a new Med list from patient’s info and med bottles, but did not compare it to the med list in the clinic file. The meds missed from the clinic list included Calcium w/Vitamin D, Mobic and Effexor. Omission was picked up the next day by the 7-3 nurse comparing all the lists. Physician was notified, Effexor was the only one ordered, and was covered before the daily dose was due. Reporting nurse also noted to write out the home med list in layperson’s language, not abbreviations, and to omit unapproved abbreviations e.g. “qd” as “every day”. 
Category B Example

- Xopenex and Atrovent Neb treatment ordered q 6hr without dose/strength of Xopenex indicated.
  - Root cause analysis summary: Physicians often let Pulmonary services complete the dose they want, but this leaves open the possibility that pharmacy might enter a different dose/strength in the computer. If Pulmonary doesn’t clarify order the order remains incomplete and can delay treatment.
  - Action taken details: Informed staff who made the initial error (Physician)
NCC MERP Index for Categorizing Medication Errors Algorithm

Harm
Impairment of the physical, emotional, or psychological function or structure of the body and/or pain resulting therefrom.

Monitoring
To observe or record relevant physiological or psychological signs.

Intervention
May include change in therapy or active medical/surgical treatment.

Intervention Necessary to Sustain Life
Includes cardiovascular and respiratory support (e.g., CPR, defibrillation, intubation, etc.)

*An error of omission does reach the patient.
Brief Review of Record Entry

- Source of Record
- Description
  - Who (level of staff)
  - Did what
  - When
  - Where
  - Specific consequences
Brief review of record entry

- Causes
  - Mar Variance – MAR differs from order
  - Performance/human deficit
  - Reconciliation
- Contributing Factors
  - No 24 hour pharmacy
- Nodes
  - Procurement – ordering of inventory
Brief review of record entry

- Location of initial error
  - Consistent with Source of Record
- Products
  - Enter information you will use
  - Add additional product(s)
- Location of error detail
  - Required for data to be included in graphs
- Additional fields – use what is relevant
- WORKING DOCUMENT for 60 days
Summary

- Entering Records
  - Select Error Category
  - Enter Required Fields
  - Enter Product Information
  - Enter Additional Fields

- Administration
  - Holding/Releasing Records
  - Locating/Updating/Deleting Held Records
Enter Reports

- Problems
- Challenges
- Frustrations
Bolster Your Reporting…

- Educate staff
  - Use video to remind staff
    - Purpose of project
    - Culture of safety
  - Completing forms
    - Description most important
    - Review definitions of fields

- Policy Statement
Policy Statement

- Nonpunitive culture
- Definitions
- Data Entry
  - Continuous approach best
  - Feedback on accuracy e-mailed monthly
  - Use Find and Update to make corrections
- QI Process
Next Steps…

- Conference Call Fall 05
  - Prioritize change using data from MEDMARX
  - Use best practices check list

- Workshop Spring 06
  - Implement and maintain change
  - RCA basics
MEDMARX Searches and Reports
Searches

- By Record Number
- Predefined Searches
  - Director’s Report
    - Spreadsheet for trending level of staff making
  - Error Outcome Category (demo)
    - Spreadsheet shows number and %age of errors by severity
  - Product Summary Report (demo)
    - Spreadsheet shows products involved in errors during specified time
# Custom Search Report Results

Row(s) 1 to 50 of 412

412 records found matching your search criteria

## Director's Report

June 2004 to May 2005

<table>
<thead>
<tr>
<th>Record #</th>
<th>Error Category</th>
<th>Staff type-initiated error</th>
<th>Medication process node</th>
<th>Location of error detail</th>
<th>Contributing factor</th>
<th>Generic name</th>
</tr>
</thead>
<tbody>
<tr>
<td>895125</td>
<td>C</td>
<td>Pharmacist</td>
<td>Transcribing/Documenting</td>
<td>OB services</td>
<td>No access to patient information</td>
<td>Ketorolac</td>
</tr>
<tr>
<td>895153</td>
<td>B</td>
<td>Nurse, Registered</td>
<td>Transcribing/Documenting</td>
<td>OB services</td>
<td>A contributing factor not determined</td>
<td>Topical product, general</td>
</tr>
<tr>
<td>920232</td>
<td>B</td>
<td>Physician</td>
<td>Prescribing</td>
<td>OB services</td>
<td>Range orders: Workload Increase</td>
<td>Zolpidem</td>
</tr>
<tr>
<td>924627</td>
<td>D</td>
<td>Nurse, Registered</td>
<td>Administering</td>
<td>OB services</td>
<td>Staff, inexperienced</td>
<td>Promethazine</td>
</tr>
<tr>
<td>815623</td>
<td>C</td>
<td>Nurse, Registered</td>
<td>Dispensing</td>
<td>emergency dept</td>
<td>Distractions, No 24-hour pharmacy; Staffing, insufficient; Workload Increase</td>
<td>Cephalexin</td>
</tr>
<tr>
<td>819967</td>
<td>B</td>
<td>Nurse, Registered</td>
<td>Transcribing/Documenting</td>
<td>emergency dept</td>
<td>A contributing factor not determined</td>
<td>Cephalexin</td>
</tr>
<tr>
<td>820134</td>
<td>C</td>
<td>Nurse, Registered</td>
<td>Administering</td>
<td>emergency dept</td>
<td>No 24-hour pharmacy</td>
<td>Magnesium Hydroxide, Alumina, Magnesium Carbonate Co-Dried Gel, and Simethicone</td>
</tr>
<tr>
<td>820137</td>
<td>D</td>
<td>Pharmacist</td>
<td>Dispensing</td>
<td>emergency dept</td>
<td>Staff, inexperienced</td>
<td>Hepatitis B Vaccine, Recombinant</td>
</tr>
<tr>
<td>837621</td>
<td>B</td>
<td>Nurse, Registered</td>
<td>Transcribing/Documenting</td>
<td>emergency dept</td>
<td>A contributing factor not determined</td>
<td>Lorazepam</td>
</tr>
<tr>
<td>837640</td>
<td>C</td>
<td>Nurse, Registered</td>
<td>Administering</td>
<td>emergency dept</td>
<td>Distractions: No 24-hour pharmacy, Workload increase</td>
<td>Hydrocodone and Acetaminophen</td>
</tr>
<tr>
<td>845538</td>
<td>B</td>
<td>Nurse, Registered</td>
<td>Transcribing/Documenting</td>
<td>emergency dept</td>
<td>A contributing factor not determined</td>
<td>Cephalexin</td>
</tr>
<tr>
<td>845564</td>
<td>C</td>
<td>Physician</td>
<td>Prescribing</td>
<td>emergency dept</td>
<td>Distractions: Emergency situation</td>
<td>Enoxaparin</td>
</tr>
</tbody>
</table>
# Error Outcome Category Report

**06/01/2004 - 05/31/2005 (All Your Facility's Records)**

<table>
<thead>
<tr>
<th>Error Category</th>
<th>Result Of Error</th>
<th>Number Of Errors</th>
<th>% of Total</th>
<th>Number Of Errors</th>
<th>% of B-I</th>
<th>Number Of Errors</th>
<th>% of C-I</th>
<th>Number Of Errors</th>
<th>% of E-I</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Error</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Category A</td>
<td>Circumstances or events that have the capacity to cause error.</td>
<td>285</td>
<td>41.42%</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Error, No Harm</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Category B</td>
<td>An error occurred but the error did not reach the patient (An &quot;error of omission&quot; does reach the patient).</td>
<td>215</td>
<td>31.25%</td>
<td>215</td>
<td>53.35%</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
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</tr>
<tr>
<td>Category C</td>
<td>An error occurred that reached the patient but did not cause patient harm.</td>
<td>188</td>
<td>24.42%</td>
<td>188</td>
<td>41.66%</td>
<td>188</td>
<td>89.36%</td>
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</tr>
<tr>
<td>Category D</td>
<td>An error occurred that reached the patient and required monitoring to confirm that it resulted in no harm to the patient and/or required intervention to preclude harm.</td>
<td>20</td>
<td>2.91%</td>
<td>20</td>
<td>4.96%</td>
<td>20</td>
<td>10.64%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Error, Harm</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Category E</td>
<td>An error occurred that may have contributed to or resulted in temporary harm to the patient and required intervention.</td>
<td>0</td>
<td>0.0%</td>
<td>0</td>
<td>0.0%</td>
<td>0</td>
<td>0.0%</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Category F</td>
<td>An error occurred that may have contributed to or resulted in temporary harm to the patient and required initial or prolonged hospitalization.</td>
<td>0</td>
<td>0.0%</td>
<td>0</td>
<td>0.0%</td>
<td>0</td>
<td>0.0%</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Category G</td>
<td>An error occurred that may have contributed to or resulted in permanent patient harm.</td>
<td>0</td>
<td>0.0%</td>
<td>0</td>
<td>0.0%</td>
<td>0</td>
<td>0.0%</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Category H</td>
<td>An error occurred that required intervention necessary to sustain life.</td>
<td>0</td>
<td>0.0%</td>
<td>0</td>
<td>0.0%</td>
<td>0</td>
<td>0.0%</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Error, Death</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Category I</td>
<td>An error occurred that may have contributed to or resulted in the patient's death.</td>
<td>0</td>
<td>0.0%</td>
<td>0</td>
<td>0.0%</td>
<td>0</td>
<td>0.0%</td>
<td>0</td>
<td>0.0%</td>
</tr>
</tbody>
</table>
## Product Summary Report

**Category D Errors Product Summary Report**

**June 04 - May 05 (Saved Search)**

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Number of times product selected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enoxaparin</td>
<td>4</td>
</tr>
<tr>
<td>Amino Acids with Electrolytes</td>
<td>3</td>
</tr>
<tr>
<td>Carbinoxamine, Pseudoephedrine, and Dextromethorphan</td>
<td>1</td>
</tr>
<tr>
<td>Dextrose 5% in Water and Sodium Chloride 0.45%</td>
<td>1</td>
</tr>
<tr>
<td>Hepatitis B Vaccine, Recombinant</td>
<td>1</td>
</tr>
<tr>
<td>Ipratropium</td>
<td>1</td>
</tr>
<tr>
<td>Lorazepam</td>
<td>1</td>
</tr>
<tr>
<td>Methylprednisolone Sodium Succinate</td>
<td>1</td>
</tr>
<tr>
<td>Promethazine</td>
<td>1</td>
</tr>
<tr>
<td>Warfarin</td>
<td>1</td>
</tr>
<tr>
<td>Rosiglitazone</td>
<td>1</td>
</tr>
<tr>
<td>Morphine Sulfate</td>
<td>1</td>
</tr>
<tr>
<td>Metformin</td>
<td>1</td>
</tr>
<tr>
<td>Levalbuterol</td>
<td>1</td>
</tr>
<tr>
<td>Hydrocodone and Acetaminophen</td>
<td>1</td>
</tr>
<tr>
<td>Glyburde and Metformin</td>
<td>1</td>
</tr>
<tr>
<td>Diazepam</td>
<td>1</td>
</tr>
<tr>
<td>Digoxin</td>
<td>1</td>
</tr>
</tbody>
</table>
Searches

- Predefined Searches
  - Summary Report
    Spreadsheet shows severity, node, location of errors during specified time
  - Top Five Types of Error Drill Down (demo)
    Spreadsheet shows top five error types and their top three causes, contributing factors, level of staff making error, and products involved during specified time
  - Top Five Generic Names Drill Down
    Spreadsheet shows top five generic names and their top three causes, contributing factors, level of staff making error, and products involved during specified time
### Custom Search Data

Row(s) 1 to 42 of 42

42 records found matching your search criteria

**Summary Report of Prescribing Errors**

**June 04 - May 05**

<table>
<thead>
<tr>
<th>Preview</th>
<th>Record #</th>
<th>Error category</th>
<th>Medication process node</th>
<th>Generic name</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>819631</td>
<td>B</td>
<td>Prescribing</td>
<td>Albuterol</td>
</tr>
<tr>
<td></td>
<td>819931</td>
<td>B</td>
<td>Prescribing</td>
<td>Risperidone</td>
</tr>
<tr>
<td></td>
<td>819963</td>
<td>B</td>
<td>Prescribing</td>
<td>Albuterol</td>
</tr>
<tr>
<td></td>
<td>820063</td>
<td>B</td>
<td>Prescribing</td>
<td>Ipratropium</td>
</tr>
<tr>
<td></td>
<td>820084</td>
<td>B</td>
<td>Prescribing</td>
<td>Fluticasone</td>
</tr>
<tr>
<td></td>
<td>820085</td>
<td>B</td>
<td>Prescribing</td>
<td>Vitamin Combinations, Miscellaneous</td>
</tr>
<tr>
<td></td>
<td>820087</td>
<td>B</td>
<td>Prescribing</td>
<td>Enoxaparin</td>
</tr>
<tr>
<td></td>
<td>820115</td>
<td>B</td>
<td>Prescribing</td>
<td>Cephalexin</td>
</tr>
<tr>
<td></td>
<td>820117</td>
<td>B</td>
<td>Prescribing</td>
<td>Valdecoxib</td>
</tr>
<tr>
<td></td>
<td>820118</td>
<td>B</td>
<td>Prescribing</td>
<td>Promethazine</td>
</tr>
<tr>
<td></td>
<td>820122</td>
<td>B</td>
<td>Prescribing</td>
<td>Insulin, Isophane, Human and Insulin, Regular, Human</td>
</tr>
<tr>
<td></td>
<td>820371</td>
<td>B</td>
<td>Prescribing</td>
<td>Aspirin</td>
</tr>
<tr>
<td></td>
<td>820380</td>
<td>B</td>
<td>Prescribing</td>
<td>Albuterol</td>
</tr>
<tr>
<td></td>
<td>820382</td>
<td>B</td>
<td>Prescribing</td>
<td>Enoxaparin</td>
</tr>
<tr>
<td></td>
<td>820385</td>
<td>B</td>
<td>Prescribing</td>
<td>Acetaminophen</td>
</tr>
<tr>
<td></td>
<td>837600</td>
<td>B</td>
<td>Prescribing</td>
<td>Morphine Sulfate</td>
</tr>
<tr>
<td></td>
<td>845529</td>
<td>B</td>
<td>Prescribing</td>
<td>Insulin, Aspart</td>
</tr>
<tr>
<td></td>
<td>845546</td>
<td>B</td>
<td>Prescribing</td>
<td>Potassium Chloride</td>
</tr>
<tr>
<td></td>
<td>883343</td>
<td>B</td>
<td>Prescribing</td>
<td>Propoxyphene Napsylate and Acetaminophen</td>
</tr>
<tr>
<td></td>
<td>883360</td>
<td>B</td>
<td>Prescribing</td>
<td>Acetaminophen, Aspirin, and Caffeine</td>
</tr>
<tr>
<td></td>
<td>883367</td>
<td>B</td>
<td>Prescribing</td>
<td>Cyclobenzaprine</td>
</tr>
</tbody>
</table>
## Top Five Types of Error Drilldown

**Top Five Errors Categories C-J**  
June 04 - May 05

<table>
<thead>
<tr>
<th>Type Of Error</th>
<th>Top 3 Causes</th>
<th>Top 3 Contributing Factors</th>
<th>Top 3 Level of Staff, Made</th>
<th>Top 3 Generic Names</th>
</tr>
</thead>
<tbody>
<tr>
<td>Omission error</td>
<td>Performance (human) deficit (28)</td>
<td>A contributing factor not determined (25)</td>
<td>Nurse, Registered (54)</td>
<td>Cefazolin (4)</td>
</tr>
<tr>
<td>(37)</td>
<td>Procedure/protocol not followed (21)</td>
<td>Distractions (10)</td>
<td>Nurse, Licensed Practical/Vocational (6)</td>
<td>Furosemide (4)</td>
</tr>
<tr>
<td></td>
<td>Documentation (14)</td>
<td>Staff, inexperienced (9)</td>
<td>Unit Secretary/Clerk (5)</td>
<td>Pneumococcal Vaccine</td>
</tr>
<tr>
<td>Improper dose/quantity</td>
<td>Performance (human) deficit (11)</td>
<td>A contributing factor not determined (25)</td>
<td>Nurse, Registered (28)</td>
<td>Hydrocodone and</td>
</tr>
<tr>
<td>(35)</td>
<td>Procedure/protocol not followed (8)</td>
<td>Distractions (7)</td>
<td>Nurse, Licensed Practical/Vocational (2)</td>
<td>Acetaminophen (7)</td>
</tr>
<tr>
<td></td>
<td>Communication (7)</td>
<td>No 24-hour pharmacy (3)</td>
<td>Nurse, Licensed</td>
<td>Enoxaparin (4)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Practical/Vocational (2)</td>
<td>Acetaminophen (2)</td>
</tr>
<tr>
<td>Unauthorized/wrong drug</td>
<td>Performance (human) deficit (5)</td>
<td>A contributing factor not determined (14)</td>
<td>Nurse, Registered (27)</td>
<td>Sodium Chloride 0.45% and</td>
</tr>
<tr>
<td>(32)</td>
<td>Procedure/protocol not followed (4)</td>
<td>No 24-hour pharmacy (7)</td>
<td>Nurse, Licensed</td>
<td>Potassium Chloride 20 mEq (3)</td>
</tr>
<tr>
<td></td>
<td>Communication (9)</td>
<td>Distractions (5)</td>
<td>Practical/Vocational (3)</td>
<td>Oxycodeine (2)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Pharmacist (2)</td>
<td>Promethazine (2)</td>
</tr>
<tr>
<td>Wrong time</td>
<td>Procedure/protocol not followed (10)</td>
<td>A contributing factor not determined (12)</td>
<td>Nurse, Registered (17)</td>
<td>Enoxaparin (7)</td>
</tr>
<tr>
<td>(23)</td>
<td>Performance (human) deficit (9)</td>
<td>Staff, inexperienced (5)</td>
<td>Nurse, Licensed</td>
<td>Cefazolin (3)</td>
</tr>
<tr>
<td></td>
<td>Communication (3)</td>
<td>Distractions (4)</td>
<td>Practical/Vocational (2)</td>
<td>Ampicillin and Sulbactam (2)</td>
</tr>
<tr>
<td>Extra dose</td>
<td>Performance (human) deficit (7)</td>
<td>A contributing factor not determined (7)</td>
<td>Nurse, Registered (10)</td>
<td>Tolterodine (1)</td>
</tr>
<tr>
<td>(16)</td>
<td>Communication (4)</td>
<td>Staff, inexperienced (4)</td>
<td>Pharmacist (3)</td>
<td>Methylprednisolone Sodium</td>
</tr>
<tr>
<td></td>
<td>Procedure/protocol not followed (3)</td>
<td>Patient transfer (2)</td>
<td>Unit Secretary/Clerk (2)</td>
<td>Succinate (1)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Furosemide (1)</td>
</tr>
</tbody>
</table>

*Note: * denotes number of selections
Predefined Graphs

- Top Generic Names
- Top Therapeutic Classes
- Top Types of Error
- Top Causes of Error
<table>
<thead>
<tr>
<th>Class</th>
<th># of Errors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blood Coagulation Modifiers</td>
<td>13</td>
</tr>
<tr>
<td>Opioid Analgesics</td>
<td>12</td>
</tr>
<tr>
<td>Beta-Lactam Antimicrobials</td>
<td>12</td>
</tr>
<tr>
<td>Non-Opioid Analgesics</td>
<td>7</td>
</tr>
<tr>
<td>Oral Antidiabetic Agents</td>
<td>6</td>
</tr>
<tr>
<td>Vaccines</td>
<td>5</td>
</tr>
<tr>
<td>Electrolytes/Minerals</td>
<td>5</td>
</tr>
<tr>
<td>Antiulcer Agents</td>
<td>4</td>
</tr>
<tr>
<td>Laxatives/Antidiarrheal Agents</td>
<td>4</td>
</tr>
<tr>
<td>Amino Acids/Proteins/Parenteral</td>
<td>4</td>
</tr>
</tbody>
</table>
Your Facility Top Error Cause All Error Categories

from 6/1/2004 to 5/31/2005

- Documentation: 219 errors
- Performance (human) deficit: 166 errors
- Computer entry: 134 errors
- Procedure/protocol not followed: 121 errors
- Transcription inaccurate/omitted: 49 errors
- Communication: 111 errors
- Written order: 49 errors
- Knowledge deficit: 18 errors
- Blanket orders: 15 errors
- Reconciliation/admission: 14 errors
- Other: 11 errors
Improper Dose Quantity Error Reports from 6/1/2004 to 5/31/2005 (your facility)

- **No Error**
- **Error, No Harm**

<table>
<thead>
<tr>
<th>Quarter</th>
<th># of Errors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qtr 2 2004</td>
<td>16</td>
</tr>
<tr>
<td>Qtr 3 2004</td>
<td>73</td>
</tr>
<tr>
<td>Qtr 4 2004</td>
<td>28</td>
</tr>
<tr>
<td>Qtr 1 2005</td>
<td>3</td>
</tr>
<tr>
<td>Qtr 2 2005</td>
<td>13</td>
</tr>
</tbody>
</table>
Predefined Spreadsheet Totals

- Spreadsheet Tally by Month, Quarter, Year
  - Date of Error
  - Error Category
  - Desired Field (Type, Cause, Node, Location)
- Total Number of Reports over time
### Spreadsheet Tally

**Medication process node**

*Spreadsheet Tally for Nodes For All Severity Categories*

*June 04 - May 05*

<table>
<thead>
<tr>
<th>Medication process node</th>
<th>Jun 04</th>
<th>Jul 04</th>
<th>Aug 04</th>
<th>Sep 04</th>
<th>Oct 04</th>
<th>Nov 04</th>
<th>Dec 04</th>
<th>Jan 05</th>
<th>Feb 05</th>
<th>Mar 05</th>
<th>Apr 05</th>
<th>May 05</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administering</td>
<td>10</td>
<td>17</td>
<td>19</td>
<td>9</td>
<td>10</td>
<td>13</td>
<td>8</td>
<td>13</td>
<td>8</td>
<td>17</td>
<td>11</td>
<td>4</td>
<td>139</td>
</tr>
<tr>
<td>Data not provided</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Dispensing</td>
<td>7</td>
<td>6</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>4</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>31</td>
</tr>
<tr>
<td>Does not apply</td>
<td>26</td>
<td>51</td>
<td>44</td>
<td>25</td>
<td>14</td>
<td>5</td>
<td>14</td>
<td>10</td>
<td>24</td>
<td>41</td>
<td>24</td>
<td>7</td>
<td>285</td>
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<tr>
<td>Monitoring</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Prescribing</td>
<td>1</td>
<td>3</td>
<td>8</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>4</td>
<td>4</td>
<td>1</td>
<td>3</td>
<td>8</td>
<td>1</td>
<td>42</td>
</tr>
<tr>
<td>Procurement</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Transcribing/Documenting</td>
<td>13</td>
<td>15</td>
<td>15</td>
<td>14</td>
<td>15</td>
<td>11</td>
<td>11</td>
<td>23</td>
<td>16</td>
<td>30</td>
<td>13</td>
<td>13</td>
<td>189</td>
</tr>
</tbody>
</table>

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Custom Search

Please indicate the fields below you want searched or displayed in your custom report table. Each field that you check will appear on the next page and you will be able to search this field and indicate whether you want this field to be displayed.

Required Fields

- Error category
- Date of error
- Description of error
- Cause of error
- Medication process node
- Location of error
- Error result on level of care
- Source of records
- Date record was entered
- Type of error
- Contributing factor
- Staff type-initiated error
- Generic Name
- Patient age

Additional Fields

- Brand name
- Therapeutic classification
- Strength-Concentration
- Dosage form
- Size of container
- Time of error
- Source of order
- Manufacturer
- Route of administration
- Labeler
- Type of container
- Number Of Occurrences
- Day of week
- Root cause analysis summary
- Staff type-discovered error
- Action taken
- Action taken detail
- Gender
- Historical Other

User Defined Fields

- Compounded ingredients
- Investigational drug name
- Location of error detail
- Internal control
Suggested Quarterly Graphs

- Track Your Shared Organizational Goal: Maximize Reporting of Potential & Near Miss Errors (A & B Error Reports)
  - Error Severity by Month
  - Severity Pie Chart

- Process Node Pie Chart
Facility X Error Severity by Month June 2004 - May 2005

Error Severity Over Time
Severity Pie Chart

Error Severity from 6/1/2004 to 5/31/2005 (your facility)

- A, 265, 42%
- B, 190, 31%
- C, 148, 24%
- D, 17, 3%
Node Pie Chart

Medication Process Node from 6/1/2004 to 5/31/2005 (your facility)

- Transcribing/Documenting, 189, 48%
- Administering, 139, 34%
- Prescribing, 42, 10%
- Dispensing, 31, 8%
- Monitoring, 2, 0%
Suggested Quarterly Graphs:

- Stacked columns to slice your data by severity
  - Nodes by Severity
  - Types by Severity
  - Causes by Severity
  - Location by Severity
Nodes by Severity

Medication Nodes by Severity from 6/1/2004 to 5/31/2005

- Administering: 118
- Dispensing: 7
- Monitoring: 2
- Prescribing: 33
- Transcribing/Documenting: 152

Legend:
- B
- C
- D
### Type By Severity

#### Type of Error by Severity from 6/1/2004 to 5/31/2005 (your facility)

<table>
<thead>
<tr>
<th>Error Type</th>
<th>Low (A)</th>
<th>Medium (B)</th>
<th>High (C)</th>
<th>Very High (D)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drug prepared incorrectly</td>
<td>1</td>
<td>8</td>
<td>15</td>
<td>3</td>
</tr>
<tr>
<td>Extra dose</td>
<td>15</td>
<td>63</td>
<td>141</td>
<td>11</td>
</tr>
<tr>
<td>Improper dose/quantity</td>
<td>8</td>
<td>27</td>
<td>88</td>
<td>2</td>
</tr>
<tr>
<td>Mislabeling</td>
<td>3</td>
<td>18</td>
<td>18</td>
<td>27</td>
</tr>
<tr>
<td>Omission error</td>
<td>67</td>
<td>27</td>
<td>37</td>
<td>40</td>
</tr>
<tr>
<td>Prescribing error</td>
<td>5</td>
<td>27</td>
<td>37</td>
<td>40</td>
</tr>
<tr>
<td>Unauthorize d/wrong drug</td>
<td>27</td>
<td>5</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Wrong administration</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Wrong dosage form</td>
<td>1</td>
<td>3</td>
<td>4</td>
<td>22</td>
</tr>
<tr>
<td>Wrong patient</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>12</td>
</tr>
<tr>
<td>Wrong route</td>
<td>1</td>
<td>1</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Wrong time</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

### Notes
- The chart above shows the distribution of different types of errors by severity level from 6/1/2004 to 5/31/2005 for a specific facility.
- The severity levels are categorized as low (A), medium (B), high (C), and very high (D).
- Each bar represents the number of errors for each type and severity level.
- The legend at the bottom of the chart indicates the severity levels and their corresponding colors.
Benchmarks – definition??

- Error Severity by size
- Reporting by phase
- Harmful error types
- How common is my error?
- What did others do about it?
  - In hospitals my size reporting to MEDMARX
  - In all hospitals reporting to MEDMARX
Severity Benchmark 1-10 Beds

Aggregate Error Severity of 19 Critical Access Hospitals (Average Occupancy 1 - 10 Beds) 2004

- A, 510, 25%
- B, 263, 13%
- C, 1194, 58%
- D, 64, 3%
- E, 11, 1%
- F, 5, 0%
- I, 1, 0%
Severity Benchmark 11-25 Beds


- A, 537, 28%
- B, 562, 29%
- C, 749, 38%
- D, 80, 4%
- E, 12, 1%
- F, 6, 0%
Aggregate Causes of Error in 32 Critical Access Hospitals Reporting to Medmarx in 2004

- Performance (human) deficit: 26%
- Documentation: 17%
- Procedure/protocol not followed: 16%
- Transcription inaccurate/omitted: 11%
- Communication: 4%
- Knowledge deficit: 4%
- Written order: 3%
- Computer entry: 3%
- Abbreviations: 2%
- Other: 14%
Detective Work…

- Are we really different?
  - Severity
  - Phase
  - Types
- Has this error happened elsewhere?
- How often?
- In which size hospital?
- What level of staff was involved?
- What did they do about it?
Questions

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