MEDMARX
Data Entry Training

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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
Role of MEDMARX in the Project

- Provides standardized terminology for data collection and analysis
- A critical tool to achieve the gold standard in QI: TELL A STORY WITH YOUR DATA
  - Source of benchmarks
- Overcomes rural barriers to QI
  - Small numbers
  - Limited information management resources
  - Limited human resources
Role of MEDMARX in the Project

- Use MEDMARX for Benchmarking against
  - All MEDMARX records
  - Critical Access Hospitals
  - Similar bed count
- Use MEDMARX to compare
  - Error Severity
  - Types of errors
  - Causes of errors
  - Reporting by phase
Role of MEDMARX in the Project

- Detective work
  - Has this error happened elsewhere?
  - How often?
  - In which size hospital?
  - What level of staff was involved?
  - What did they do about it?
MEDMARX is a tool to enable us to stop seeing each error in isolation.
Patient Safety Model (USP, 2004)

- Culture
  - Data Collection
  - Data Analysis
  - Plan Change
  - Implement Change
  - Assess Impact of Change

MEDMARX
MEDMARX Program

- Internet accessible quality improvement tool that facilitates the anonymous collection of medication error information.
- Information is stored centrally in a data repository maintained by USP.
- Allows participating sites to report, track, and share medication error data in a standardized format.
MEDMARX Program

- Captures information about the error and steps taken in a facility to prevent recurrence.
- Participants can learn about causes and circumstances surrounding errors and prevent them from occurring in their facility.
- Sharing of knowledge and experience is a unique aspect of MEDMARX.
MEDMARX Anonymity

- Subscribing facilities are identified ONLY by a facility identification number randomly generated by MEDMARX.
- USP cannot identify facilities from which a record is submitted.
- Information and alerts are communicated through notices which maintains facility anonymity.
MEDMARX Anonymity

- Users must also play a role in protecting their anonymity.
- DO NOT include any identifiers in your records submitted to MEDMARX.
  - Facility ID, Facility Name, Abbreviation, or Acronym
  - City, State, National Region
  - Your name, Names of others in facility
  - Names of others involved in error
  - Social Security Numbers
  - Medical Record Numbers
MEDMARX Administration

- User Administration
  - Create a New User
  - Edit/Delete Users
  - Change Passwords
  - Assign appropriate level of access
Facility Profile
- Verify and update on regular basis
- Customize location of error detail for your facility on the profile
MEDMARX Data Entry Form

- Forms
  - MEDMARX Medication error data entry form vs. Medication Safety Reporting Form
  - Notification of updates through MEDMARX Notices
- Form Elements
  (See Error Record Fields Document)
  - Error Category
  - Required Fields
  - Product Information
  - Additional fields
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:
- Deteriorated product
- Drug prepared incorrectly
- Expired product
- Extra dose
- Improper dose/quantity
- Mislabeling
- Omission
- Prescribing error
- Unapproved/wrong drug
- Wrong admin technique
- Wrong route
- Wrong patient
- Wrong time

Check the cause(s) of the error:
- Abbreviations
- Barcode, medication mislabeled
- Barcode, override warning
- Barcode, failure to scan
- Blanket orders
- Brand names look alike
- Brand names sound alike
- Brand/generic names look alike
- Brand/generic names sound alike
- Calculation error
- Communication
- Computer entry
- Computer error
- Computer error
- Computer screen display unclear/confusing
- Communication
- Computer software
- Contraindicated, drug allergy
- Contraindicated, drug/dx
- Contraindicated, drug/food
- Contraindicated in disease
- Contraindicated in pregnancy/breastfeeding
- Decentral point
- Difluent wrong
- Dispensing device involved
- Documentation inaccurate/inadequate
- Dosage form confusion
- Drug distribution system
- Drug shortage
- Equipment design
- Equipment failure/malfunction
- Equipment (not pumps)
- Equipment mislabeling
- Equipment not labeled
- Equipment not used
- Error may have contributed to, or resulted in, temporary harm to the patient and required intervention

- label your facility’s design
- Labeling (your facility’s)
- MAR variance
- Measuring device inaccurate/inappropriate
- Monitoring inaccurate/inadequate
- Non-formulary drug
- Non-metric units used
- Oversed
-Packaging/container Design
- Patient identification failure
- Preprinted order form
- Performance (human) deficit
- Prefix/suffix misinterpretation
- Procedure/Protocol not followed
- Pump, failure/malfunction
- Pump, improper use
- Reconciliation-admission
- Reconciliation-discharge
- Reconciliation-transition
- Reference material
- Confusing/inaccurate
- Repackaging by your facility
- Repackaging by other facility
- Similar packaging labeling
- Similar products
- System safeguards inadequate
- Transcription inaccurate/omitted
- Unlabeled syringe/container
- Vertical order confusing/complete
Check factors that contributed to the error:

- A contributing factor not determined
- Barcode, missing
- Barcode, non-readable
- Barcode, system non-functional
- Code situation
- Computer system/network down
- Cross coverage
- Distractions
- Emergency situation
- Fatigue
- Imprint, identification failure
- Language, barrier
- No 24-hour pharmacy
- No access to patient info
- None
- Patient names similar/same
- Patient transfer
- Patient, floating
- Poor lighting
- Ranges orders
- Shift change
- Staff, agency/temporary
- Staff, inexperience
- Staff, insufficient
- Staffing, alternative 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 (Location Detail on Medmarx Data Entry Form—Required Field):

- 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></td>
</tr>
<tr>
<td>LPN</td>
<td></td>
</tr>
<tr>
<td>LPN-C</td>
<td></td>
</tr>
<tr>
<td>CNA/MA</td>
<td></td>
</tr>
<tr>
<td>Clerk</td>
<td></td>
</tr>
<tr>
<td>NP</td>
<td></td>
</tr>
<tr>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>PA</td>
<td></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**

- 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 Aug 2008)
MEDMARX Menu

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

- Record
  - New
  - Find and Update/Delete
  - Batch Release
MEDMARX Menu

- Search
  - By Record Number
  - Predefined Searches
  - Saved Searches
  - Custom Search
  - Graphs/Charts
Entering Records

- Interface Vocabulary
  - Picklists
    - Scrollable lists through which single or multiple items can be selected
  - Quick Picks
    - Used to quickly view and select items in a picklist.
  - Checkboxes
    - Select one or more choices.
  - Radio buttons
    - Allows only one choice.
  - Text boxes
    - Allows the typing of free text. Caution Maintain Anonymity
  - User-Defined Fields
    - Enter data specific to your facility. Ex. Location of Error Detail, Internal Control, Miscellaneous
Entering Records

- Select Error Category
- Enter Required Fields
  - Location of Error Detail is a required field
- Enter Product Information
- Enter Additional Fields
Record Administration

- Holding/Releasing Records
  - DO NOT release records to the general database
- Locating/Updating/Deleting Held Records
- New feature under Admin
  - Batch Update – both held and released records
    - Action taken
    - Location detail
Tips on Record Entry

- Continuous approach to data entry
- Description should cover what happened, when, why (if known), and outcome if applicable
- 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
Category A Example

- 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)
Feedback

- Suggested updates e-mailed monthly
  - UNMC will change severities
- Review each suggestion
- Agree?
  - Use Find and Update to make changes
- Disagree?
  - Don’t do anything – this is YOUR data
  OR
  - Call or email to discuss
MEDMARX Searches and Reports
Searches

- By Record Number
- Predefined Searches - Spreadsheets
  - Director’s Report
    Spreadsheet for trending level of staff making
  - Error Outcome Category
    Spreadsheet shows number and %age of errors by severity
  - Product Summary Report
    Spreadsheet shows products involved in errors during specified time
<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</th>
<th>Day of week</th>
<th>Time of error</th>
<th>Contributing factor</th>
<th>Generic name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1066663</td>
<td>C</td>
<td>Nurse, Registered</td>
<td>Administering</td>
<td>Nursing (Patient Care Unit)</td>
<td>Sunday</td>
<td>10:00</td>
<td>None</td>
<td>Pantoprazole</td>
</tr>
<tr>
<td>1066661</td>
<td>C</td>
<td>Nurse, Registered</td>
<td>Transcribing/Documenting</td>
<td>Nursing (Patient Care Unit)</td>
<td>Sunday</td>
<td>16:45</td>
<td>None</td>
<td>Warfarin</td>
</tr>
<tr>
<td>1066662</td>
<td>C</td>
<td>Laboratory Personnel</td>
<td>Administering</td>
<td>Nursing (Patient Care Unit)</td>
<td>Sunday</td>
<td>10:00</td>
<td>A contributing factor not determined</td>
<td>Dipexin</td>
</tr>
<tr>
<td>1066716</td>
<td>E</td>
<td>Unit Secretary/Clark</td>
<td>Transcribing/Documenting</td>
<td>Nursing (Patient Care Unit)</td>
<td>Sunday</td>
<td>18:45</td>
<td>Workload increase</td>
<td>Levalbuterol</td>
</tr>
<tr>
<td>1069145</td>
<td>E</td>
<td>Nurse, Registered</td>
<td>Transcribing/Documenting</td>
<td>Nursing (Patient Care Unit)</td>
<td>Monday</td>
<td>10:00</td>
<td>Distractions</td>
<td>Calcium Carbonate</td>
</tr>
<tr>
<td>1069167</td>
<td>C</td>
<td>Nurse, Registered</td>
<td>Administering</td>
<td>Nursing (Patient Care Unit)</td>
<td>Monday</td>
<td>10:30</td>
<td>Distractions</td>
<td>Phytomadione</td>
</tr>
<tr>
<td>1069463</td>
<td>C</td>
<td>Nurse, Registered</td>
<td>Dispensing</td>
<td>Long-term care facility</td>
<td>Sunday</td>
<td>14:00</td>
<td>A contributing factor not determined</td>
<td>Isosorbide Mononitrate</td>
</tr>
<tr>
<td>1069490</td>
<td>D</td>
<td>Nurse, Registered</td>
<td>Administering</td>
<td>Nursing (Patient Care Unit)</td>
<td>Tuesday</td>
<td>10:00</td>
<td>Shift change</td>
<td>Levofloxacin</td>
</tr>
<tr>
<td>1069499</td>
<td>C</td>
<td>Nurse, Registered</td>
<td>Administering</td>
<td>Nursing (Patient Care Unit)</td>
<td>Monday</td>
<td>23:35</td>
<td>None</td>
<td>Levofloxacin</td>
</tr>
<tr>
<td>1069523</td>
<td>C</td>
<td>Nurse, Registered</td>
<td>Dispensing</td>
<td>Pharmacy, inpatient</td>
<td>Sunday</td>
<td>08:00</td>
<td>A contributing factor not determined</td>
<td>Metoprolol Succinate</td>
</tr>
<tr>
<td>1070612</td>
<td>C</td>
<td>Nurse, Registered</td>
<td>Administering</td>
<td>Nursing (Patient Care Unit)</td>
<td>Sunday</td>
<td>01:00</td>
<td>Staffing, alternative hours</td>
<td>Metronidazole</td>
</tr>
<tr>
<td>1070604</td>
<td>E</td>
<td>Nurse, Travel</td>
<td>Transcribing/Documenting</td>
<td>Nursing (Patient Care Unit)</td>
<td>Tuesday</td>
<td>19:00</td>
<td>Staff, agency/temporary</td>
<td>Insulin, Regular, Human</td>
</tr>
<tr>
<td>1070602</td>
<td>E</td>
<td>Nurse, Registered</td>
<td>Administering</td>
<td>Nursing (Patient Care Unit)</td>
<td>Tuesday</td>
<td>07:30</td>
<td>Distractions; Workload increase</td>
<td>Insulin Aspart Protamine and Insulin Aspart</td>
</tr>
<tr>
<td>1072192</td>
<td>C</td>
<td>Nurse, Registered</td>
<td>Administering</td>
<td>Nursing (Patient Care Unit)</td>
<td>Thursday</td>
<td>09:00</td>
<td>A contributing factor not determined</td>
<td>Ampicillin and Sulbactam</td>
</tr>
</tbody>
</table>
| 1072545  | B              | Pharmacist                | Dispensing               | Pharmacy, inpatient       | Sunday      | 13:00        | Distractions; Workload increase | Dextrose 5% in Water and Sodium Chloride 0.45% and Potassium Chloride 20 mEq/
## Error Outcome Category Report

01/01/2006 - 09/30/2006 (All Facilities' 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>Circumstances or events that have the capacity to cause error.</td>
<td>654</td>
<td>19.54%</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>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<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>725</td>
<td>21.66%</td>
<td>725</td>
<td>26.92%</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Category C</td>
<td>An error occurred that reached the patient but did not cause patient harm.</td>
<td>1831</td>
<td>54.71%</td>
<td>1831</td>
<td>67.99%</td>
<td>1831</td>
<td>63.04%</td>
<td>N/A</td>
<td></td>
</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>106</td>
<td>3.17%</td>
<td>106</td>
<td>3.94%</td>
<td>106</td>
<td>5.30%</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Error, Harm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<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>28</td>
<td>0.84%</td>
<td>28</td>
<td>1.04%</td>
<td>28</td>
<td>1.42%</td>
<td>28</td>
<td>90.32%</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>2</td>
<td>0.06%</td>
<td>2</td>
<td>0.07%</td>
<td>2</td>
<td>0.1%</td>
<td>2</td>
<td>6.45%</td>
</tr>
<tr>
<td>Category G</td>
<td>An error occurred that may have contributed to or resulted in permanent patient harm.</td>
<td>1</td>
<td>0.03%</td>
<td>1</td>
<td>0.04%</td>
<td>1</td>
<td>0.05%</td>
<td>1</td>
<td>3.23%</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

1/1/2006 - 9/30/2006 (All Facilities' Records)

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Number of times product selected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Not Provided</td>
<td>226</td>
</tr>
<tr>
<td>Potassium Chloride</td>
<td>87</td>
</tr>
<tr>
<td>Furosemide</td>
<td>81</td>
</tr>
<tr>
<td>Warfarin</td>
<td>78</td>
</tr>
<tr>
<td>Acetaminophen</td>
<td>73</td>
</tr>
<tr>
<td>Hydrocodone and Acetaminophen</td>
<td>73</td>
</tr>
<tr>
<td>Ipratropium and Albuterol</td>
<td>70</td>
</tr>
<tr>
<td>Ceftriaxone</td>
<td>88</td>
</tr>
<tr>
<td>Enoxaparin</td>
<td>85</td>
</tr>
<tr>
<td>Lysoloxacin</td>
<td>57</td>
</tr>
<tr>
<td>Morphine Sulfate</td>
<td>56</td>
</tr>
<tr>
<td>Insulin, Regular, Human</td>
<td>54</td>
</tr>
<tr>
<td>Cefazolin</td>
<td>52</td>
</tr>
<tr>
<td>Lorazepam</td>
<td>45</td>
</tr>
<tr>
<td>Albuterol</td>
<td>44</td>
</tr>
<tr>
<td>Oxycodone and Acetaminophen</td>
<td>44</td>
</tr>
<tr>
<td>Docetaxel Sodium</td>
<td>42</td>
</tr>
<tr>
<td>Liothyronine</td>
<td>32</td>
</tr>
<tr>
<td>Metoprolol Tartrate</td>
<td>31</td>
</tr>
<tr>
<td>Sodium Chloride 0.9%</td>
<td>30</td>
</tr>
<tr>
<td>Vancomycin</td>
<td>30</td>
</tr>
<tr>
<td>Metoclopramide</td>
<td>30</td>
</tr>
<tr>
<td>Aspirin</td>
<td>29</td>
</tr>
<tr>
<td>Ketorolac</td>
<td>29</td>
</tr>
<tr>
<td>Oxycodone</td>
<td>28</td>
</tr>
<tr>
<td>Metoprolol Succinate</td>
<td>28</td>
</tr>
<tr>
<td>Motrin/prednisolone Sodium Succinate</td>
<td>28</td>
</tr>
<tr>
<td>Prednisone</td>
<td>27</td>
</tr>
<tr>
<td>Pantoprazole</td>
<td>27</td>
</tr>
<tr>
<td>Promethazine</td>
<td>27</td>
</tr>
<tr>
<td>Alprazolam</td>
<td>26</td>
</tr>
<tr>
<td>Sucralfate</td>
<td>26</td>
</tr>
<tr>
<td>Ciprofloxacin</td>
<td>25</td>
</tr>
<tr>
<td>Dinosin</td>
<td>25</td>
</tr>
</tbody>
</table>
Searches

- **Predefined Searches - Spreadsheets**
  - **Summary Report**
    - Spreadsheet shows severity, node, location of errors during specified time
  - **Top Five Types of Error Drill Down***
    - Spreadsheet shows top five error types and their top three causes, contributing factors, level of staff making error, and products involved during specified time
    - *(Hint: Split by Severity Category for a more informative report)*
  - **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

*Included in quarterly report*
### Summary Report

**Row(s) 1 to 50 of 137**

137 records found matching your search criteria

Dates of error searched: 01/01/2006 - 09/30/2006

<table>
<thead>
<tr>
<th>Preview</th>
<th>Record #</th>
<th>Error category</th>
<th>Medication process node</th>
<th>Location of error</th>
<th>Description of error</th>
<th>Generic name</th>
</tr>
</thead>
<tbody>
<tr>
<td>□</td>
<td>1069430</td>
<td>D</td>
<td>Administering</td>
<td>Nursing (Patient Care Unit)</td>
<td>LEVOFLOXACIN 250MG/IV GIVEN WHEN DOSE WAS LEFT HANGING ON IV POLE IN PATIENTS ROOM. AT APPROX 12 HOURS AFTER PREVIOUS DOSE, PAT CRCL 20ML/MIN</td>
<td>Levofoxacin</td>
</tr>
<tr>
<td>□</td>
<td>1076325</td>
<td>D</td>
<td>Administering</td>
<td>Emergency Department</td>
<td>Levofloxin was given IV instead of PO very fast</td>
<td>Levofoxacin</td>
</tr>
<tr>
<td>□</td>
<td>1078553</td>
<td>D</td>
<td>Administering</td>
<td>Nursing (Patient Care Unit)</td>
<td>Metformin 500mg was given QID instead of TID due to time being crossed out instead of rewritten on MAR. Error discovered when discovered at 0100 when nurses activity report checked. Accuchecks done every 2 hrs until 4:00 glucose level remained stable.</td>
<td>Metformin</td>
</tr>
<tr>
<td>□</td>
<td>1061411</td>
<td>D</td>
<td>Administering</td>
<td>Nursing (Patient Care Unit)</td>
<td>Lopressor 50 mg. given instead of 12.5 mg</td>
<td>Metoprolol Tartrate</td>
</tr>
<tr>
<td>□</td>
<td>1062984</td>
<td>D</td>
<td>Administering</td>
<td>Nursing (Patient Care Unit)</td>
<td>Aumedrod ordered IV Depomedrol 80 mg given medication verified with Dr but given by wrong route. Dr did not realize Nurse was holding methylprednisolone acetate. Depomedrol is not to be given IV. Dr. ordered 80 mg to be given and the depomedrol was 80 mg.</td>
<td>Methylprednisolone Acetate</td>
</tr>
<tr>
<td>□</td>
<td>1066594</td>
<td>D</td>
<td>Administering</td>
<td>Nursing (Patient Care Unit)</td>
<td>VISTARIL WAS GIVEN IV INSTEAD OF IM.</td>
<td>Hydroxyzine Pamoate</td>
</tr>
<tr>
<td>□</td>
<td>1060430</td>
<td>D</td>
<td>Administering</td>
<td>Nursing (Patient Care Unit)</td>
<td>Carbidopa/Levodopa CR 50/200 was not given at 0200. Pharmacy found medication in drawer. In am pt unable to stand up straight shuffles when walking 2 max assist and walker used to ambulate. Leans to right side difficulty using right arm</td>
<td>Carbidopa and Levodopa</td>
</tr>
<tr>
<td>□</td>
<td>1063969</td>
<td>D</td>
<td>Administering</td>
<td>Nursing (Patient Care Unit)</td>
<td>Dr ordered Lovenox 1mg 0.12 hrs - Pt weighed 60 kg - Nursing gave pt 80mg dose - discovered error when checking orders the next morning - calculated new dose (60mg) and a new timing via Kinetics</td>
<td>Enoxaparin</td>
</tr>
<tr>
<td>□</td>
<td>1065115</td>
<td>D</td>
<td>Administering</td>
<td>Nursing (Patient Care Unit)</td>
<td>The patient’s O2 sat was noted to be 79%. The O2 extension tubing was connected to the O2 regulator but was not on the patient. The patient’s nasal cannula was connected to the SyN treatment connection. The design of the bedside equipment is very similar</td>
<td>Oxygen</td>
</tr>
<tr>
<td>□</td>
<td>1166135</td>
<td>D</td>
<td>Administering</td>
<td>Long-term care facility</td>
<td>Med changed, dic med card not returned to pharmacy, also was not marked as dic on MAR. Pt was given both old and new meds (beta blockers) on that day</td>
<td>Metoprolol Succinate</td>
</tr>
<tr>
<td>□</td>
<td>1163402</td>
<td>D</td>
<td>Administering</td>
<td>Nursing (Patient Care Unit)</td>
<td>Roxanol ordered, given by RN, allergy to Morphine discovered approximately 30 minutes after administration</td>
<td>Morphine Sulfate</td>
</tr>
</tbody>
</table>
## Top Five Types of Error Drilldown

<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 (257)</td>
<td>A contributing factor not determined (364)</td>
<td>Nurse, Registered (496)</td>
<td>Potassium Chloride (33)</td>
</tr>
<tr>
<td></td>
<td>Procedure/protocol not followed (251)</td>
<td>Distractions (137)</td>
<td>Nurse, Licensed Practical/Vocational (175)</td>
<td>Ipratropium and Albuterol (32)</td>
</tr>
<tr>
<td></td>
<td>Transcription inaccurate/omitted (170)</td>
<td>None (119)</td>
<td>Pharmacist (49)</td>
<td>Wartsin (27)</td>
</tr>
<tr>
<td>Improper dose/quantity</td>
<td>Performance (human) deficit (202)</td>
<td>A contributing factor not determined (301)</td>
<td>Nurse, Registered (252)</td>
<td>Data Not Provided (113)</td>
</tr>
<tr>
<td></td>
<td>Transcription inaccurate/omitted (153)</td>
<td>Does not apply (180)</td>
<td>Does Not Apply (180)</td>
<td>Acetaminophen (21)</td>
</tr>
<tr>
<td></td>
<td>Procedure/protocol not followed (152)</td>
<td>None (95)</td>
<td>Pharmacist (60)</td>
<td>Morphine Sulfate (21)</td>
</tr>
<tr>
<td>Extra dose</td>
<td>Documentation (321)</td>
<td>Does not apply (331)</td>
<td>Does Not Apply (331)</td>
<td>Data Not Provided (45)</td>
</tr>
<tr>
<td></td>
<td>Procedure/protocol not followed (30)</td>
<td>A contributing factor not determined (105)</td>
<td>Nurse, Registered (122)</td>
<td>Ipratropium and Albuterol (37)</td>
</tr>
<tr>
<td></td>
<td>Performance (human) deficit (69)</td>
<td>Distractions (30)</td>
<td>Nurse, Licensed Practical/Vocational (33)</td>
<td>Furosemide (19)</td>
</tr>
<tr>
<td>Unauthorized/wrong drug</td>
<td>Performance (human) deficit (143)</td>
<td>A contributing factor not determined (225)</td>
<td>Nurse, Registered (243)</td>
<td>Data Not Provided (28)</td>
</tr>
<tr>
<td></td>
<td>Procedure/protocol not followed (121)</td>
<td>None (61)</td>
<td>Does Not Apply (54)</td>
<td>Ipratropium and Albuterol (23)</td>
</tr>
<tr>
<td></td>
<td>Documentation (68)</td>
<td>Workload increase (55)</td>
<td>Nurse, Licensed Practical/Vocational (50)</td>
<td>Hydrocodone and Acetaminophen (25)</td>
</tr>
<tr>
<td>Wrong time</td>
<td>Performance (human) deficit (105)</td>
<td>A contributing factor not determined (110)</td>
<td>Data Not Provided (25)</td>
<td>Data Not Provided (25)</td>
</tr>
<tr>
<td></td>
<td>Transcription inaccurate/omitted (79)</td>
<td>Does not apply (55)</td>
<td>Nurse, Registered (130)</td>
<td>Levofloxacin (15)</td>
</tr>
<tr>
<td></td>
<td>Procedure/protocol not followed (66)</td>
<td>None (61)</td>
<td>Nurse, Licensed Practical/Vocational (56)</td>
<td>Furosemide (12)</td>
</tr>
</tbody>
</table>

Note: * denotes number of selections
## Top Five Generic Names Drilldown

<table>
<thead>
<tr>
<th>Generic Name</th>
<th>Top 3 Causes</th>
<th>Top 3 Contributing Factors</th>
<th>Top 3 Level of Staff, Made</th>
<th>Top 3 Types</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Not Provided</td>
<td>Documentation (71)</td>
<td>Does not apply (226)</td>
<td>Does Not Apply (226)</td>
<td>Improper dose/quantity (13)</td>
</tr>
<tr>
<td>(225)*</td>
<td>Transcription inaccurate/omitted (65)</td>
<td></td>
<td></td>
<td>Extra dose (45)</td>
</tr>
<tr>
<td></td>
<td>Procedure/protocol not followed (41)</td>
<td></td>
<td></td>
<td>Unauthorized/Wrong drug (22)</td>
</tr>
<tr>
<td>Potassium Chloride</td>
<td>Performance (human) deficit (21)</td>
<td>A contributing factor not determined (27)</td>
<td>Nurse, Registered (46)</td>
<td>Omission error (33)</td>
</tr>
<tr>
<td>(30)</td>
<td>Procedure/protocol not followed (20)</td>
<td>No 24-hour pharmacy (13)</td>
<td>Nurse, Licensed Practical/Vocational (11)</td>
<td>Improper dose/quantity (20)</td>
</tr>
<tr>
<td></td>
<td>Transcription inaccurate/omitted (15)</td>
<td>Distractions (10)</td>
<td>Does Not Apply (7)</td>
<td>Unauthorized/Wrong drug (8)</td>
</tr>
<tr>
<td>Furosemide</td>
<td>Procedure/protocol not followed (15)</td>
<td>A contributing factor not determined (23)</td>
<td>Nurse, Registered (49)</td>
<td>Omission error (26)</td>
</tr>
<tr>
<td>(30)</td>
<td>Transcription inaccurate/omitted (13)</td>
<td>Distractions (12)</td>
<td>Nurse, Licensed Practical/Vocational (12)</td>
<td>Extra dose (19)</td>
</tr>
<tr>
<td></td>
<td>Performance (human) deficit (12)</td>
<td>Does not apply (10)</td>
<td>Does Not Apply (10)</td>
<td>Wrong time (12)</td>
</tr>
<tr>
<td>Warfarin</td>
<td>Procedure/protocol not followed (26)</td>
<td>A contributing factor not determined (33)</td>
<td>Nurse, Registered (33)</td>
<td>Omission error (27)</td>
</tr>
<tr>
<td>(76)</td>
<td>Documentation (15)</td>
<td>Workload increase (33)</td>
<td>Nurse, Licensed Practical/Vocational (12)</td>
<td>Improper dose/quantity (18)</td>
</tr>
<tr>
<td></td>
<td>Transcription inaccurate/omitted (13)</td>
<td>Distractions (8)</td>
<td>Pharmacist (7)</td>
<td>Extra dose (13)</td>
</tr>
<tr>
<td>Acetaminophen</td>
<td>Procedure/protocol not followed (16)</td>
<td>A contributing factor not determined (25)</td>
<td>Nurse, Registered (33)</td>
<td>Improper dose/quantity (21)</td>
</tr>
<tr>
<td>(73)</td>
<td>Performance (human) deficit (18)</td>
<td>Workload increase (11)</td>
<td>Does Not Apply (10)</td>
<td>Extra dose (14)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Does not apply (10)</td>
<td>Nurse, Licensed Practical/Vocational (8)</td>
<td>Omission error (12)</td>
</tr>
</tbody>
</table>

*Note: * denotes number of selections
Searches

○ Predefined Searches - Graphs
  ● Top Generic Names
  ● Top Therapeutic Classes
  ● Top Types of Error
  ● Top Causes of Error*

*Included in quarterly report
MEDMARX Top Generic Names chart
from 1/1/2006 to 9/30/2006 (all facilities) (Number of Facilities = 40)

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MEDMARX Top Therapeutic Classes chart from 1/1/2006 to 9/30/2006 (all facilities) (Number of Facilities = 40)

# of Errors

- Opioid Analgesics: 327
- Beta-Lactam Antimicrobials: 274
- Antidiasthmatic/Bronchodilators: 197
- Non-Opioid Analgesics: 168
- Blood Coagulation Modifiers: 155
- Electrolytes/Minerals: 153
- Sedatives/Hypnotics/Anxiolytics: 143
- IV Solutions: 137
- Laxatives/Antidiarrheal Agents: 118

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MEDMARX Top Error Type chart
from 1/1/2006 to 9/30/2006 (all facilities) (Number of Facilities = 40)

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Predefined Searches – Graphic Trending

- Cause of error
- Day of week
- Medication process node
- Staff-type initiated error
- Type of error
- Generic name

Caution: May not be useful!

*Included in quarterly report*
What’s wrong with this chart?
Searches

- Spreadsheet Tally by Month, Quarter, Year
  - Date of Error
  - Error Category
  - Desired Field (Type, Cause, Node, Location)
- Total Number of Reports over time
Criteria: Severity Categories C-I
# Custom Searches

## 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 mode
- Location of error
- Error result on level of care
- Patient age

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

### Facility Profile
- Type of facility
- Bed size

[Continue] [Reset Above Fields]
Custom Search

Example: Location of Error Detail not selected

Custom Search Results

Row(s) 1 to 50 of 101

101 records found matching your search criteria

Dates of error searched: 07/01/2006 - 09/30/2006

<table>
<thead>
<tr>
<th>Record #</th>
<th>Source of records</th>
<th>Location of error</th>
<th>Location of error detail</th>
</tr>
</thead>
<tbody>
<tr>
<td>1194929</td>
<td>Outpatient</td>
<td>Emergency Department</td>
<td></td>
</tr>
<tr>
<td>1165671</td>
<td>Inpatient</td>
<td>Nursing (Patient Care) Unit</td>
<td></td>
</tr>
<tr>
<td>1165983</td>
<td>Inpatient</td>
<td>Nursing (Patient Care) Unit</td>
<td></td>
</tr>
<tr>
<td>1167976</td>
<td>Inpatient</td>
<td>Labor/Delivery</td>
<td></td>
</tr>
<tr>
<td>1167979</td>
<td>Inpatient</td>
<td>Labor/Delivery</td>
<td></td>
</tr>
<tr>
<td>1166678</td>
<td>Outpatient</td>
<td>Nursing (Patient Care) Unit</td>
<td>surgical services</td>
</tr>
<tr>
<td>1166629</td>
<td>Outpatient</td>
<td>Nursing (Patient Care) Unit</td>
<td>skilled nursing</td>
</tr>
<tr>
<td>1193343</td>
<td>Outpatient</td>
<td>Nursing (Patient Care) Unit</td>
<td>skilled nursing</td>
</tr>
<tr>
<td>1193373</td>
<td>Outpatient</td>
<td>Nursing (Patient Care) Unit</td>
<td>skilled nursing</td>
</tr>
<tr>
<td>1205319</td>
<td>Outpatient</td>
<td>Nursing (Patient Care) Unit</td>
<td>skilled nursing</td>
</tr>
</tbody>
</table>
Custom Search

- Results from custom searches can be used for Batch Updates – Location Detail and Actions Taken

- Save your custom search for next time

- Try it now!
Quarterly Reports

- Error Severity Over Time – Line Chart
- Percent of Errors by Severity – Stacked Bar
- Percent of Errors by Process Node – Pie Chart
- Error Type by Severity – Stacked Bar
- Top Five Types of Error Drilldown - Spreadsheet
- Actions Taken Worksheet
- Actions Taken by Severity*
- Top Causes of Error
Error Severity Over Time

Error Severity Over Time
October 2005 - September 2006

# of Errors

A  B  C  D  E-I  3 per. Mov. Avg.
Percent of Errors by Severity

% of Errors By Severity
October 2005 - September 2006

Qtr 4 2005  |  Qtr 1 2006  |  Qtr 2 2006  |  Qtr 3 2006

- E-I: 1%  |  3%  |  1%  |  2%
- D: 20%  |  23%  |  20%  |  19%
- C: 53%  |  51%  |  57%  |  68%
- B: 22%  |  22%  |  18%  |  9%
- A: 0%  |  10%  |  20%  |  30%  |  40%  |  50%  |  60%  |  70%  |  80%  |  90%  |  100%

Legend:
- E-I
- D
- C
- B
- A
Percent of Errors by Process Node

% of Errors (B-I) by Process Node  
October 2005 - September 2006

- Transcribing/Documenting, 1102, 28%
- Dispensing, 537, 14%
- Prescribing, 335, 8%
- Procurement, 23, 1%
- Monitoring, 25, 1%
- Administration, 1930, 48%
## Top Five Types of Error Drilldown

### Top five types of error drilldown A-B

<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>Extra dose (653) *</td>
<td>Documentation (493) Procedure/protocol not followed (73)</td>
<td>Does not apply (558) A contributing factor not determined (42) Workload increase (16)</td>
<td>Does Not Apply (558) Nurse, Registered (36) Nursing Personnel, non-specific (13)</td>
<td>Data Not Provided (75) Ipratropium and Albuterol (39) Acetaminophen (22)</td>
</tr>
<tr>
<td>Improper dose/quantity (586)</td>
<td>Documentation (169) Procedure/protocol not followed (85)</td>
<td>Does not apply (257) A contributing factor not determined (161) None (49)</td>
<td>Does Not Apply (257) Nurse, Registered (106) Pharmacist (66)</td>
<td>Data Not Provided (149) Acetaminophen (24) Ipratropium and Albuterol (20)</td>
</tr>
<tr>
<td>Unauthorized/wrong drug (274)</td>
<td>Documentation (69) Procedure/protocol not followed (52)</td>
<td>A contributing factor not determined (90) Does not apply (79) Workload increase (42)</td>
<td>Does Not Apply (79) Nurse, Registered (78) Pharmacist (34)</td>
<td>Data Not Provided (41) Ipratropium and Albuterol (17) Hydrocodone and Acetaminophen (9)</td>
</tr>
<tr>
<td>Omission error (216)</td>
<td>Transcription inaccurate/omitted (60) Drug distribution system (47) Documentation (42)</td>
<td>A contributing factor not determined (83) No 24-hour pharmacy (43) None (32)</td>
<td>Nurse, Registered (97) Pharmacist (33) Nurse, Licensed Practical/Vocational (20)</td>
<td>Ipratropium and Albuterol (20) Potassium Chloride (12) Ceftriaxone (12)</td>
</tr>
<tr>
<td>Prescribing error (180)</td>
<td>Documentation (32) Written order (32) Transcription inaccurate/omitted (23)</td>
<td>A contributing factor not determined (65) Does not apply (49) Workload increase (27)</td>
<td>Physician (96) Does Not Apply (49) Nurse, Registered (19)</td>
<td>Data Not Provided (23) Acetaminophen (10) Hydrocodone and Acetaminophen (10)</td>
</tr>
</tbody>
</table>
Top Causes of Error

Top Causes (All Error Severities)
October 2005 - September 2006

- Performance (human) deficit
- Procedure/protocol not followed
- Documentation
- Transcription inaccurate/omitted
- Communication
- Workflow disruption
- Computer entry
- Knowledge deficit
- MAR variance
- Drug distribution system

Number of Reports

- 1167
- 1009
- 949
- 771
- 407
- 299
- 294
- 277
- 228
- 214
## Actions Taken Worksheet

### Action Taken Spreadsheet

**All CAHs, 07/01/2006 - 09/30/2006, Error categories D-I**

<table>
<thead>
<tr>
<th>Record #</th>
<th>Error category</th>
<th>Date</th>
<th>Description of error</th>
<th>Type of error</th>
<th>Cause of error</th>
<th>Action taken</th>
<th>Action taken detail</th>
</tr>
</thead>
<tbody>
<tr>
<td>1162941</td>
<td>D</td>
<td>07/03/2006</td>
<td>order given for dobutamine stress test which was not done due to being unable to</td>
<td>Unauthorized/</td>
<td>Communication; Preprinted medication order form; Written</td>
<td>Policy/Procedure changed</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>view cardiac images on echo, test was changed to nuclear stress test by physician.</td>
<td>wrong drug</td>
<td>order</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Meanwhile patient was take bac to ICU and returnened after nuclear trace dose</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>obtained. physician order was added to existing signed order and subsequently missed.</td>
<td></td>
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<td>dobutamine nuclear stree test performed insted of adenosine stress test.</td>
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<tr>
<td>1163659</td>
<td>G</td>
<td>07/06/2006</td>
<td>pyxis malfunction, RN did not call in pharmacist to correct problem, did not</td>
<td>Omission error</td>
<td>Dispensing device involved</td>
<td>Education/Training provided</td>
<td>RN will be counseled</td>
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<td>give 0600 med.</td>
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<tr>
<td>1171237</td>
<td>F</td>
<td>07/13/2006</td>
<td>Doctor ordered Hydroxyzine 100mg IV , nurse gave med as ordered, med error route</td>
<td>Wrong route</td>
<td>Knowledge deficit</td>
<td>Communication process enhanced; Education/Training provided; Inform</td>
<td>Discussed with MD, Nurse, Patient and patient family. Will discuss at NDMD. Procedure in place to check med as it states on vial for IM use only. Reinforce following procedure.</td>
</tr>
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<td>error. Explained to patient after med given, used to be given IV years ago. Explained to patient what side effects could occur. IV NS 1000ml given at Poison Control recommendation.</td>
<td></td>
<td></td>
<td>Informed patient's physician; Informed patient/caregiver of medication error; Informed staff who made the initial error; Informed staff who was also involved in error</td>
<td></td>
</tr>
</tbody>
</table>
Actions Taken by Severity

Actions Taken By Error Severity
3rd Quarter 2006
Questions

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