



# 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

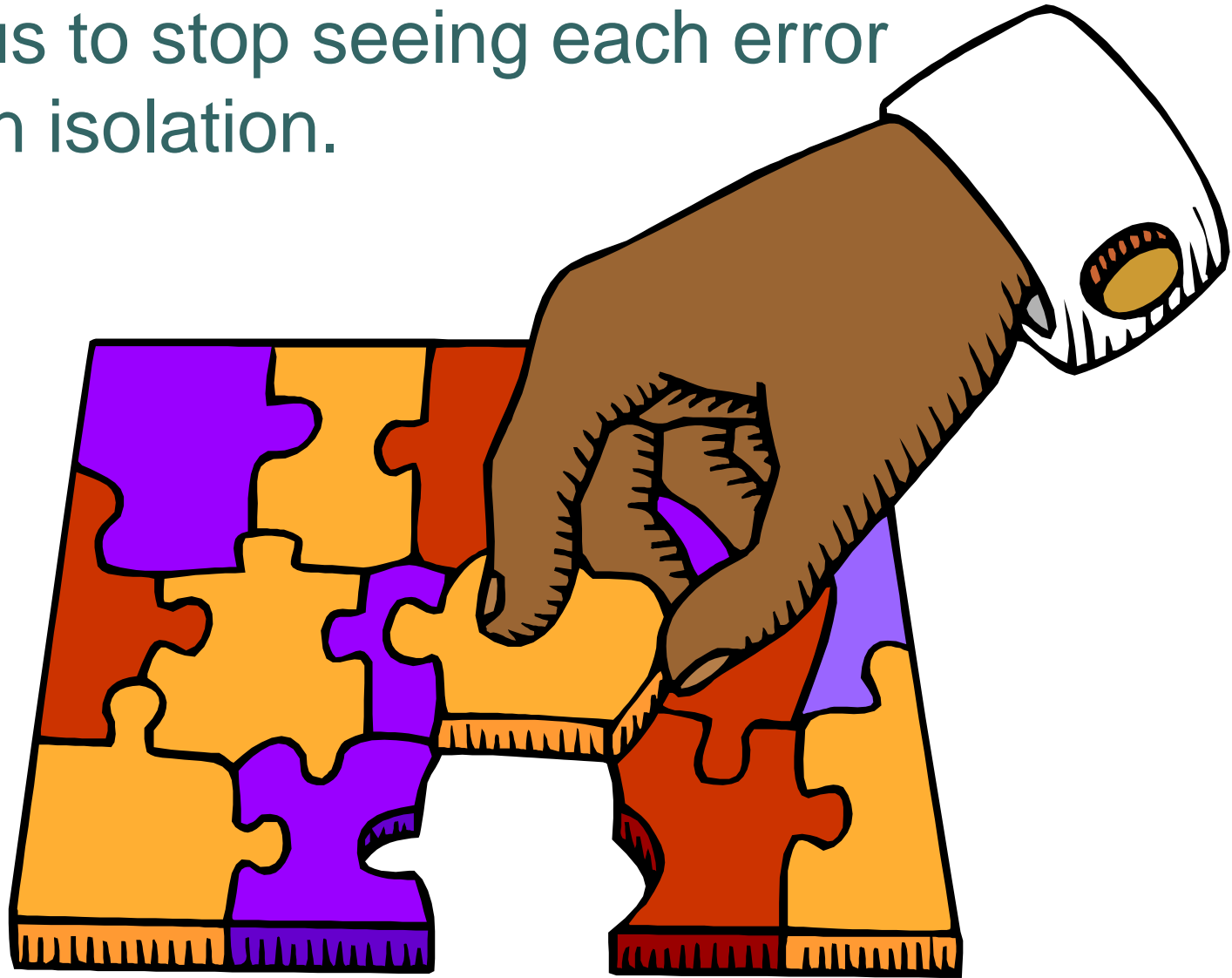


# Role of MEDMARX in the Project

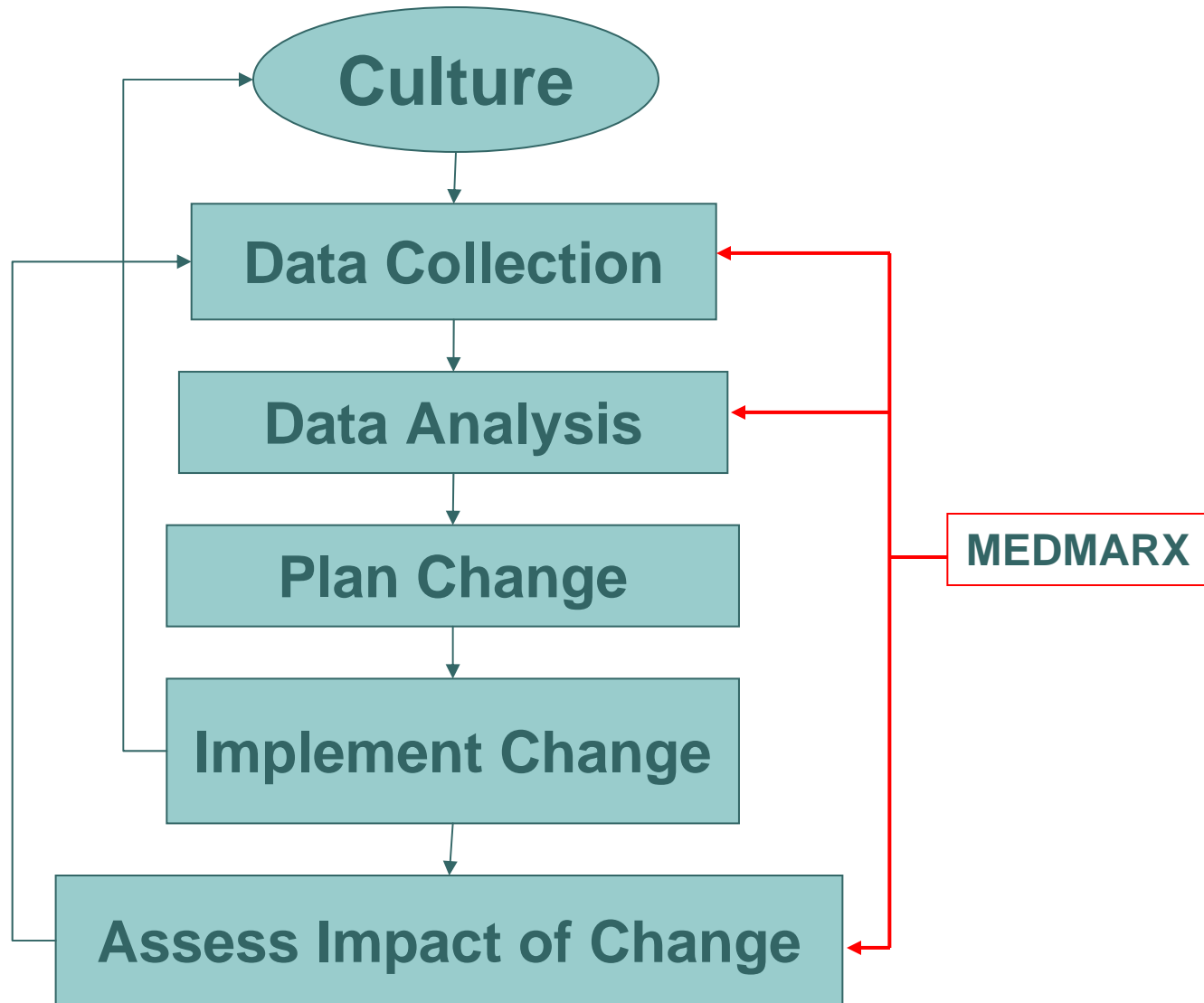
- Detective work
  - Has this error happened elsewhere?
  - How often?
  - In which size hospital?
  - What level of staff was involved?
  - What did they do about it?

- ● ●

MEDMARX is a tool to enable us to stop seeing each error in isolation.



# Patient Safety Model (USP, 2004)





# 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



# MEDMARX Administration

- 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

# MEDICATION SAFETY REPORTING FORM

MEDMARX Code

Medical Record

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

NO ERROR	NO HARM
Category A ERROR	Circumstances or events have the capacity to cause error
Category B	NO HARM
Category C	Error occurred but it did not reach patient
Category D*	Error occurred that reached the patient, but did not cause harm (includes errors of omission)
Category D*	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
ERROR	HARM
Category E*	Error occurred that may have contributed to, or resulted in, temporary harm to the patient and required intervention
Category F*	Error occurred that may have contributed to, or resulted in, temporary harm to the patient and required initial or prolonged hospitalization
Category G*	Error occurred that may have contributed to, or resulted in, permanent harm to patient
Category H*	Error occurred that required intervention necessary to sustain life
ERROR	DEATH
Category I*	Error occurred that may have contributed to, or resulted in, patient death

\*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

### 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 prescriber order entry
- Computer screen display unclear/confusing
- Computer software
- Contraindicated, drug allergy
- Contraindicated, drug/ drug
- Contraindicated, drug/ food
- Contraindicated in disease
- Contraindicated in pregnancy/breastfeeding
- Decimal point
- Diluent wrong
- Dispensing device involved
- Documentation inaccurate/lacking
- Dosage form confusion
- Drug distribution system
- Drug shortage
- Equipment design confusing/inadequate
- Equipment (not pumps) failure/ malfunction
- Fax/scanner involved
- Generic names look alike
- Generic names sound alike
- Handwriting illegible/ unclear
- Incorrect medication activation
- Information mgt. system
- Knowledge deficit/training
- Insufficient
- Label (manufacturer's) design

- Improper dose/quantity
- Mislabeling
- Omission
- Prescribing error
- Unauthorized/wrong drug
- Wrong admin technique
- Wrong dosage form
- Wrong route
- Wrong patient
- Wrong time
- Label (your facility's) design
- Labeling (your facility's)
- Leading zero missing
- MAR variance
- Measuring device inaccurate/inappropriate
- Monitoring inadequate/lacking
- Non-formulary drug
- Non-metric units used
- Override
- Packaging/container Design
- Patient identification failure
- Preprinted order form
- Performance (human) deficit
- Prefix/suffix misinterpreted
- 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
- Storage proximity inadequate
- System safeguards
- Trailing / terminal zero
- Transcription inaccurate /omitted
- Unlabeled syringe/container
- Verbal order confusing/ incomplete
- Weight missing/inaccurate
- Written order confusing/ incomplete
- Workflow disruption

**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
- Poor lighting
- Range orders
- Shift change
- Staff, agency/ temporary
- Staff, floating
- Staff, inexperienced
- Staffing, alternative hours
- Staffing, insufficient
- Workload increase

**Check the ONE PHASE where the error ORIGINATED**

- Prescribing
- Transcribing/Documenting
- Dispensing
- Administering
- Procurement
- 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**

	Reporting	Making	Reporting	Making
RN	<input type="checkbox"/>	<input type="checkbox"/>	MD	<input type="checkbox"/>
LPN	<input type="checkbox"/>	<input type="checkbox"/>	Patient Safety Off.	<input type="checkbox"/>
LPN-C	<input type="checkbox"/>	<input type="checkbox"/>	Pharmacist	<input type="checkbox"/>
CNA/MA	<input type="checkbox"/>	<input type="checkbox"/>	Pharm tech	<input type="checkbox"/>
Clerk	<input type="checkbox"/>	<input type="checkbox"/>	QA/AI	<input type="checkbox"/>
NP	<input type="checkbox"/>	<input type="checkbox"/>	RRT	<input type="checkbox"/>
NA	<input type="checkbox"/>	<input type="checkbox"/>	Student	<input type="checkbox"/>
PA	<input type="checkbox"/>	<input type="checkbox"/>	Patient/Family	<input type="checkbox"/>

**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
- Informed staff involved in initial error
- Informed patient/ caregiver of error
- Policy/ procedure changed
- Policy/ procedure instituted
- Staffing practice/ policy modified

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.**

*Quality Improvement: Not Part of the medical record. Not discoverable by Nebraska Rev. Stat. Section .*

*(Hospital Name: Revised Aug 2006)*



# 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

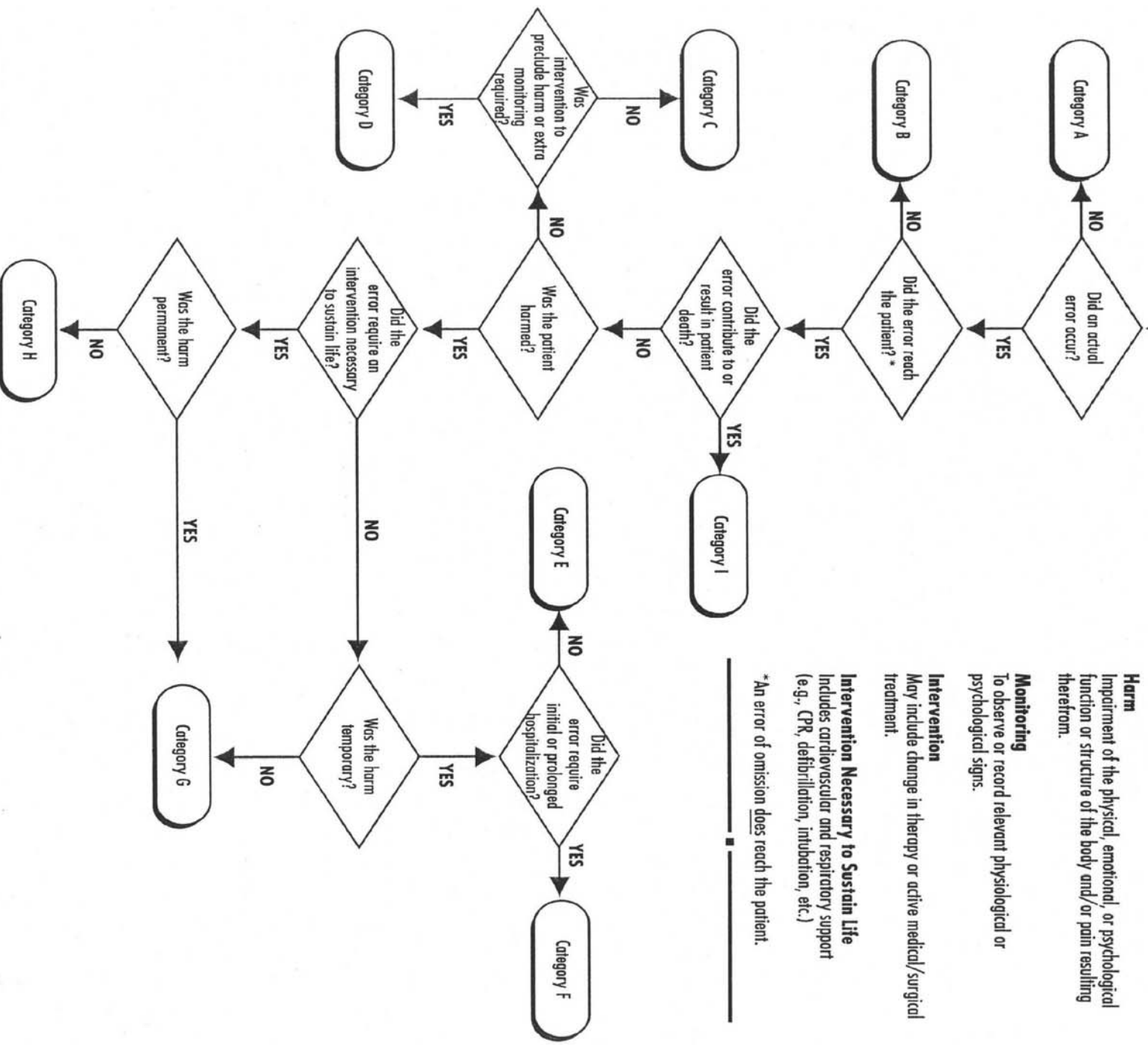


# Entering Records

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

# NCC MERP Index for Categorizing Medication Errors Algorithm

Circumstances or events that have the capacity to cause error



**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.



# 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

## Director's Report

Row(s) 1 to 50 of 2693

2693 records found matching your search criteria

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

Record #	Error Category	Staff type-initiated error	Medication process node	Location of error	Day of week	Time of error	Contributing factor	Generic name
1068660	C	Nurse, Registered	Administering	Nursing (Patient Care) Unit	Sunday	10:00	None	Pantoprazole
1068661	C	Nurse, Registered	Transcribing/Documenting	Nursing (Patient Care) Unit	Sunday	15:45	None	Warfarin
1068662	C	Laboratory Personnel	Administering	Nursing (Patient Care) Unit	Sunday	10:00	A contributing factor not determined	Digoxin
1068716	B	Unit Secretary/Clerk	Transcribing/Documenting	Nursing (Patient Care) Unit	Sunday	18:45	Workload increase	Levalbuterol
1069145	B	Nurse, Registered	Transcribing/Documenting	Nursing (Patient Care) Unit	Monday	10:00	Distractions	Calcium Carbonate
1069167	C	Nurse, Registered	Administering	Nursing (Patient Care) Unit	Monday	10:30	Distractions	Phytonadione
1069463	C	Nurse, Registered	Dispensing	Long-term care facility	Sunday	14:00	A contributing factor not determined	Isosorbide Mononitrate
1069490	D	Nurse, Registered	Administering	Nursing (Patient Care) Unit	Tuesday	10:00	Shift change	Levofloxacin
1069499	C	Nurse, Registered	Administering	Nursing (Patient Care) Unit	Monday	23:35	None	Levofloxacin
1069523	C	Nurse, Registered	Dispensing	Pharmacy, inpatient	Sunday	08:00	A contributing factor not determined	Metoprolol Succinate
1070612	C	Nurse, Registered	Administering	Nursing (Patient Care) Unit	Sunday	01:00	Staffing, alternative hours	Metronidazole
1070804	B	Nurse, Travel	Transcribing/Documenting	Nursing (Patient Care) Unit	Tuesday	19:00	Staff, agency/temporary	Insulin, Regular, Human
1070902	E	Nurse, Registered	Administering	Nursing (Patient Care) Unit	Tuesday	07:30	Distractions; Workload increase	Insulin Aspart Protamine and Insulin Aspart
1072192	C	Nurse, Registered	Administering	Nursing (Patient Care) Unit	Thursday	06:00	A contributing factor not determined	Ampicillin and Sulbactam
1072546	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/L

## Error Outcome Category Report

01/01/2006 - 09/30/2006 (All Facilities' Records)

		All Errors Category A-I n=3347 (100%)		Actual Errors Category B-I n=2693 (80%)		Errors that reached the patient Category C-I n=1968 (59%)		Errors that reached the patient and caused Harm or Fatality Category E-I n=31 (1%)	
Error Category	Result Of Error	Number Of Errors	% of Total	Number Of Errors	% of B- I	Number Of Errors	% of C- I	Number Of Errors	% of E-I
<b>No Error</b>									
<b>Category A</b>	Circumstances or events that have the capacity to cause error.	654	19.54%	N/A		N/A		N/A	
<b>Error, No Harm</b>									
<b>Category B</b>	An error occurred but the error did not reach the patient (An "error of omission" does reach the patient).	725	21.66%	725	26.92%	N/A		N/A	
<b>Category C</b>	An error occurred that reached the patient but did not cause patient harm.	1831	54.71%	1831	67.99%	1831	93.04%	N/A	
<b>Category D</b>	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.	106	3.17%	106	3.94%	106	5.39%	N/A	
<b>Error, Harm</b>									
<b>Category E</b>	An error occurred that may have contributed to or resulted in temporary harm to the patient and required intervention.	28	0.84%	28	1.04%	28	1.42%	28	90.32%
<b>Category F</b>	An error occurred that may have contributed to or resulted in temporary harm to the patient and required initial or prolonged hospitalization.	2	0.06%	2	0.07%	2	0.1%	2	6.45%
<b>Category G</b>	An error occurred that may have contributed to or resulted in permanent patient harm.	1	0.03%	1	0.04%	1	0.05%	1	3.23%
<b>Category H</b>	An error occurred that required intervention necessary to sustain life.	0	0.0%	0	0.0%	0	0.0%	0	0.0%
<b>Error, Death</b>									
<b>Category I</b>	An error occurred that may have contributed to or resulted in the patient's death.	0	0.0%	0	0.0%	0	0.0%	0	0.0%

## Product Summary Report

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

Product Name	Number of times product selected
Data Not Provided	226
Potassium Chloride	87
Furosemide	81
Warfarin	78
Acetaminophen	73
Hydrocodone and Acetaminophen	73
Ipratropium and Albuterol	70
Ceftriaxone	66
Enoxaparin	65
Levofloxacin	57
Morphine Sulfate	56
Insulin, Regular, Human	54
Cefazolin	52
Lorazepam	45
Albuterol	44
Oxycodone and Acetaminophen	44
Docusate Sodium	42
Levothyroxine	32
Metoprolol Tartrate	31
Sodium Chloride 0.9%	30
Vancomycin	30
Metoclopramide	30
Aspirin	29
Ketorolac	29
Oxycodone	28
Metoprolol Succinate	28
Methylprednisolone Sodium Succinate	28
Prednisone	27
Pantoprazole	27
Promethazine	27
Alprazolam	26
Sucralfate	26
Ciprofloxacin	25
Dioxin	25



# 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

## 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

[Click here to see the selected criteria for this report](#)

Preview	Record #	Error category	Medication process node	Location of error	Description of error	Generic name
<input type="checkbox"/>	<a href="#">1069490</a>	D	Administering	Nursing (Patient Care) Unit	LEVOFLOXACIN 250MG IV GIVEN WHEN DOSE WAS LEFT HANGING ON IV POLE IN PATIENT'S ROOM- AT APPROX 12 HOURS AFTER PREVIOUS DOSE- PAT CRCL 20ML/MIN	Levofloxacin
<input type="checkbox"/>	<a href="#">1075295</a>	D	Administering	Emergency Department	Levaquin was given IV instead of PO and very fast	Levofloxacin
<input type="checkbox"/>	<a href="#">1078383</a>	D	Administering	Nursing (Patient Care) Unit	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 pyxis activity report checked. Accuchecks done every 2 hrs until 4:00 glucose level remained stable	Metformin
<input type="checkbox"/>	<a href="#">1081411</a>	D	Administering	Nursing (Patient Care) Unit	Lopressor 50 mg. given instead of 12.5 mg.	Metoprolol Tartrate
<input type="checkbox"/>	<a href="#">1082964</a>	D	Administering	Nursing (Patient Care) Unit	olumedrol ordered IV Depomedrol 80 mg given medication verified with Dr but given by wrong route. Dr did not realize Nurse was holding methelprednesilone acetate. Depomedrol is not to be given IV. Dr. ordered 80 mg to be given and the depo-medrol was 80 mg/cc.	Methylprednisolone Acetate
<input type="checkbox"/>	<a href="#">1086594</a>	D	Administering	Nursing (Patient Care) Unit	VISTARIL WAS GIVEN IV INSTEAD OF IM.	Hydroxyzine Pamoate
<input type="checkbox"/>	<a href="#">1090430</a>	D	Administering	Nursing (Patient Care) Unit	Carbidopa/levadopa CR 50/200 was not given at 0200/ Pharmacy found medication in drawer. In am pt unable to stand up straight shuffles when walking 2max assist and walker used to ambulate. Leans to right side difficulty using right arm	Carbidopa and Levodopa
<input type="checkbox"/>	<a href="#">1093896</a>	D	Administering	Nursing (Patient Care) Unit	Dr ordered Lovenox 1mg/kg Q 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	Enoxaparin
<input type="checkbox"/>	<a href="#">1095115</a>	D	Administering	Nursing (Patient Care) Unit	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 SVN treatment connection. The design of the bedside equipment is very similar.	Oxygen
<input type="checkbox"/>	<a href="#">1100135</a>	D	Administering	Long-term care facility	med changed, dc'd med card not returned to pharmacy, also was not marked as d/c'd on MAR. Pt was given both old and new meds ( beta blockers) on that day	Metoprolol Succinate
<input type="checkbox"/>	<a href="#">1103402</a>	D	Administering	Nursing (Patient Care) Unit	Roxinol ordered, given by RN, allergy to Morphine discovered approximately 30 minutes after administration	Morphine Sulfate

Search Category: Error Categories D-I, Sorted by Medication Process Node and Error Category

## Top Five Types of Error Drilldown

[Click here to see the selected criteria for this report](#)

Type Of Error	Top 3 Causes	Top 3 Contributing Factors	Top 3 Level of Staff, Made	Top 3 Generic Names
Omission error (875) *	Performance (human) deficit (257) Procedure/protocol not followed (250) Transcription inaccurate/omitted (170)	A contributing factor not determined (354) Distractions (137) None (119)	Nurse, Registered (496) Nurse, Licensed Practical/Vocational (176) Pharmacist (49)	Potassium Chloride (33) Ipratropium and Albuterol (32) Warfarin (27)
Improper dose/quantity (808)	Performance (human) deficit (202) Transcription inaccurate/omitted (153) Procedure/protocol not followed (152)	A contributing factor not determined (301) Does not apply (180) None (95)	Nurse, Registered (292) Does Not Apply (180) Pharmacist (80)	Data Not Provided (113) Acetaminophen (21) Morphine Sulfate (21)
Extra dose (555)	Documentation (321) Procedure/protocol not followed (80) Performance (human) deficit (69)	Does not apply (331) A contributing factor not determined (105) Distractions (30)	Does Not Apply (331) Nurse, Registered (122) Nurse, Licensed Practical/Vocational (33)	Data Not Provided (45) Ipratropium and Albuterol (37) Furosemide (19)
Unauthorized/wrong drug (521)	Performance (human) deficit (143) Procedure/protocol not followed (121) Documentation (68)	A contributing factor not determined (225) None (61) Workload increase (55)	Nurse, Registered (243) Does Not Apply (54) Nurse, Licensed Practical/Vocational (50)	Data Not Provided (28) Ipratropium and Albuterol (23) Hydrocodone and Acetaminophen (23)
Wrong time (351)	Performance (human) deficit (105) Transcription inaccurate/omitted (79) Procedure/protocol not followed (66)	A contributing factor not determined (110) Does not apply (55) None (51)	Nurse, Registered (180) Nurse, Licensed Practical/Vocational (56) Does Not Apply (55)	Data Not Provided (25) Levofloxacin (15) Furosemide (12)

Note: \* denotes number of selections

## Top Five Generic Names Drilldown

[Click here to see the selected criteria for this report](#)

Generic Name	Top 3 Causes	Top 3 Contributing Factors	Top 3 Level of Staff, Made	Top 3 Types
Data Not Provided (226) *	Documentation (71) Transcription inaccurate/omitted (45) Procedure/protocol not followed (41)	Does not apply (226)	Does Not Apply (226)	Improper dose/quantity (113) Extra dose (45) Unauthorized/wrong drug (28)
Potassium Chloride (86)	Performance (human) deficit (21) Procedure/protocol not followed (20) Transcription inaccurate/omitted (15)	A contributing factor not determined (27) No 24-hour pharmacy (13) Distractions (10)	Nurse, Registered (46) Nurse, Licensed Practical/Vocational (11) Does Not Apply (7)	Omission error (33) Improper dose/quantity (20) Unauthorized/wrong drug (8)
Furosemide (80)	Procedure/protocol not followed (15) Transcription inaccurate/omitted (13) Performance (human) deficit (12)	A contributing factor not determined (23) Distractions (12) Does not apply (10)	Nurse, Registered (49) Nurse, Licensed Practical/Vocational (12) Does Not Apply (10)	Omission error (26) Extra dose (19) Wrong time (12)
Warfarin (76)	Procedure/protocol not followed (28) Documentation (15) Transcription inaccurate/omitted (13)	A contributing factor not determined (33) Workload increase (8) Distractions (8)	Nurse, Registered (33) Nurse, Licensed Practical/Vocational (12) Pharmacist (7)	Omission error (27) Improper dose/quantity (18) Extra dose (13)
Acetaminophen (73)	Documentation (21) Procedure/protocol not followed (18) Performance (human) deficit (18)	A contributing factor not determined (26) Workload increase (11) Does not apply (10)	Nurse, Registered (33) Does Not Apply (10) Nurse, Licensed Practical/Vocational (8)	Improper dose/quantity (21) Extra dose (14) Omission error (12)

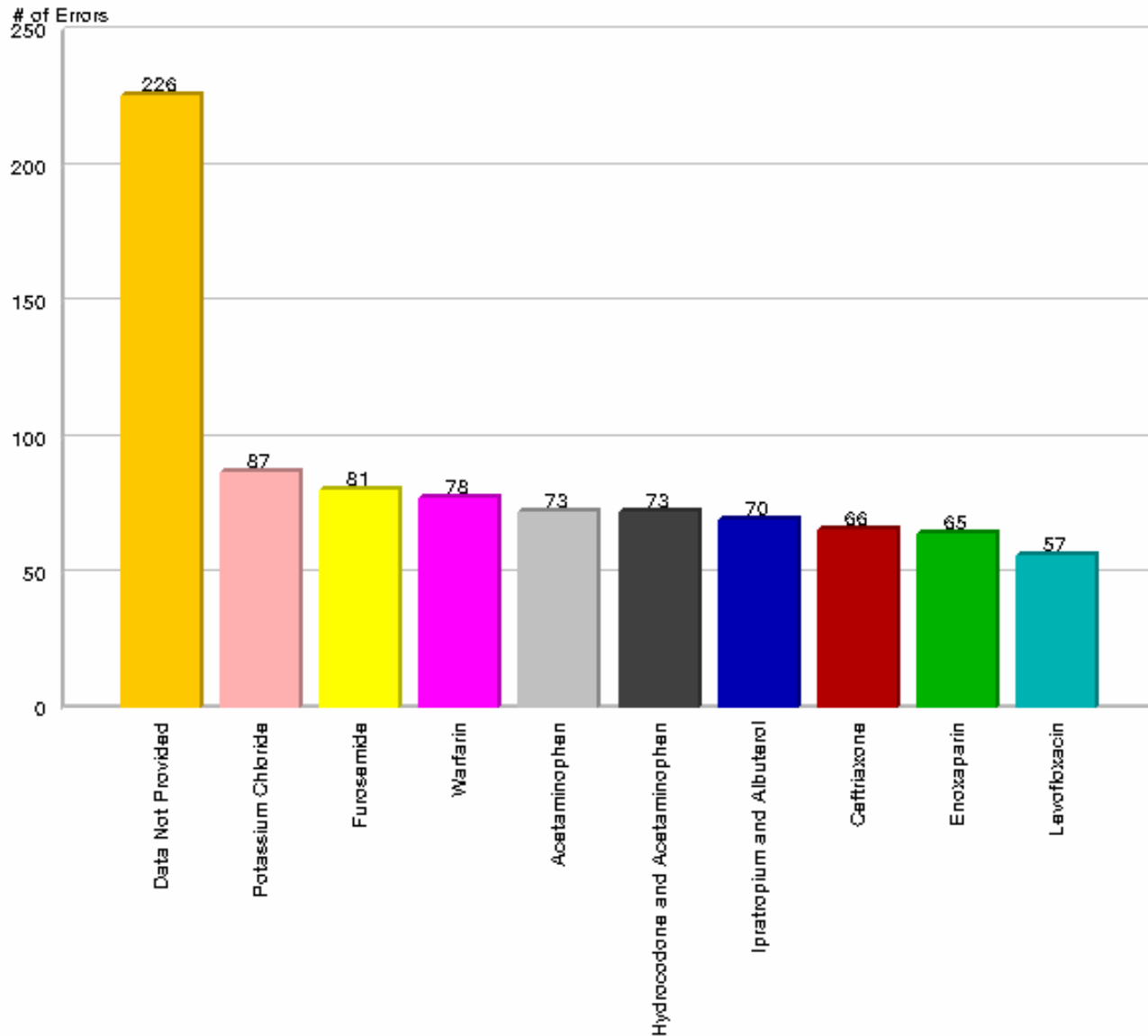
Note: \* denotes number of selections



# Searches

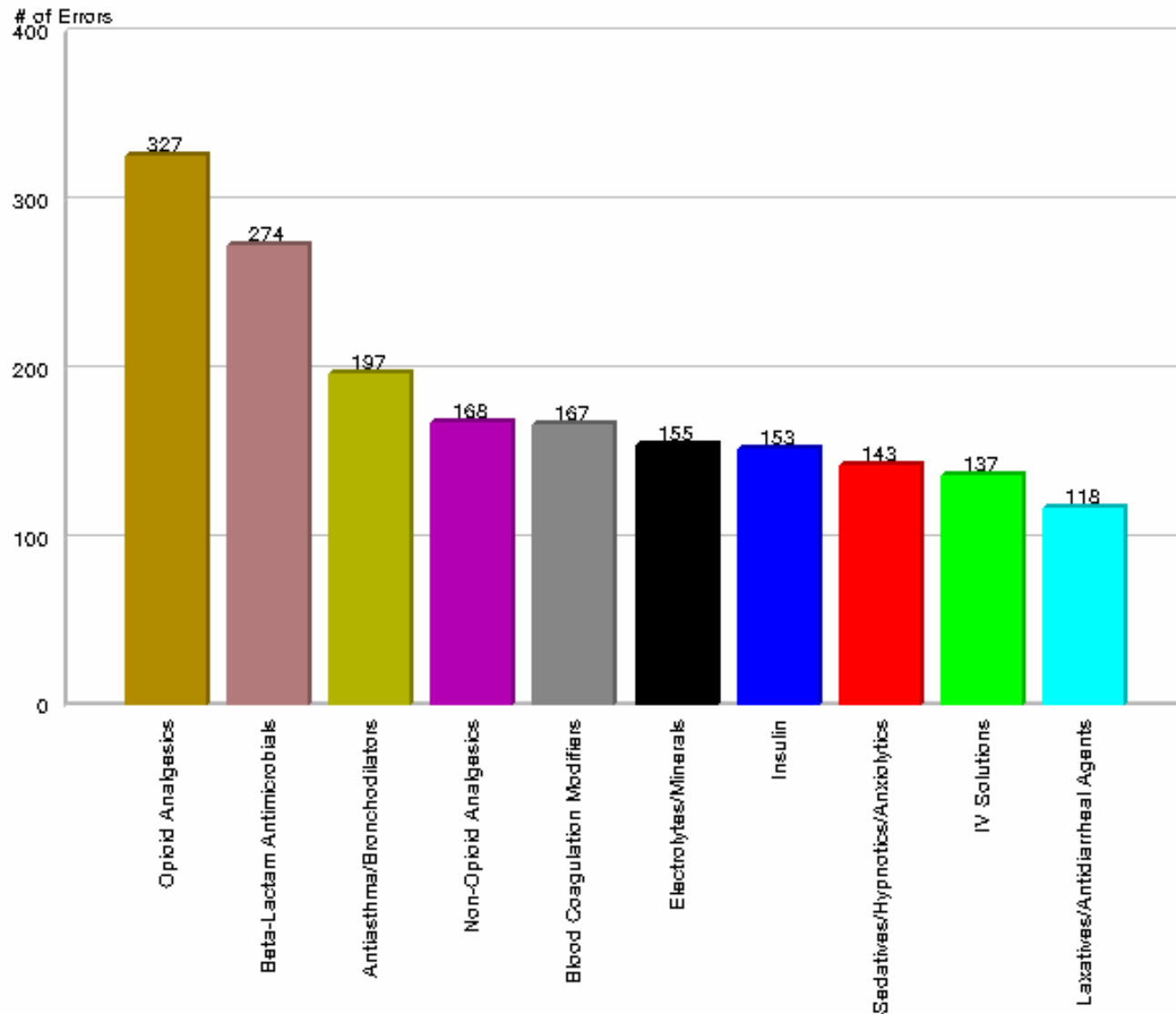
- Predefined Searches - Graphs
  - Top Generic Names
  - Top Therapeutic Classes
  - Top Types of Error
  - Top Causes of Error\*

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

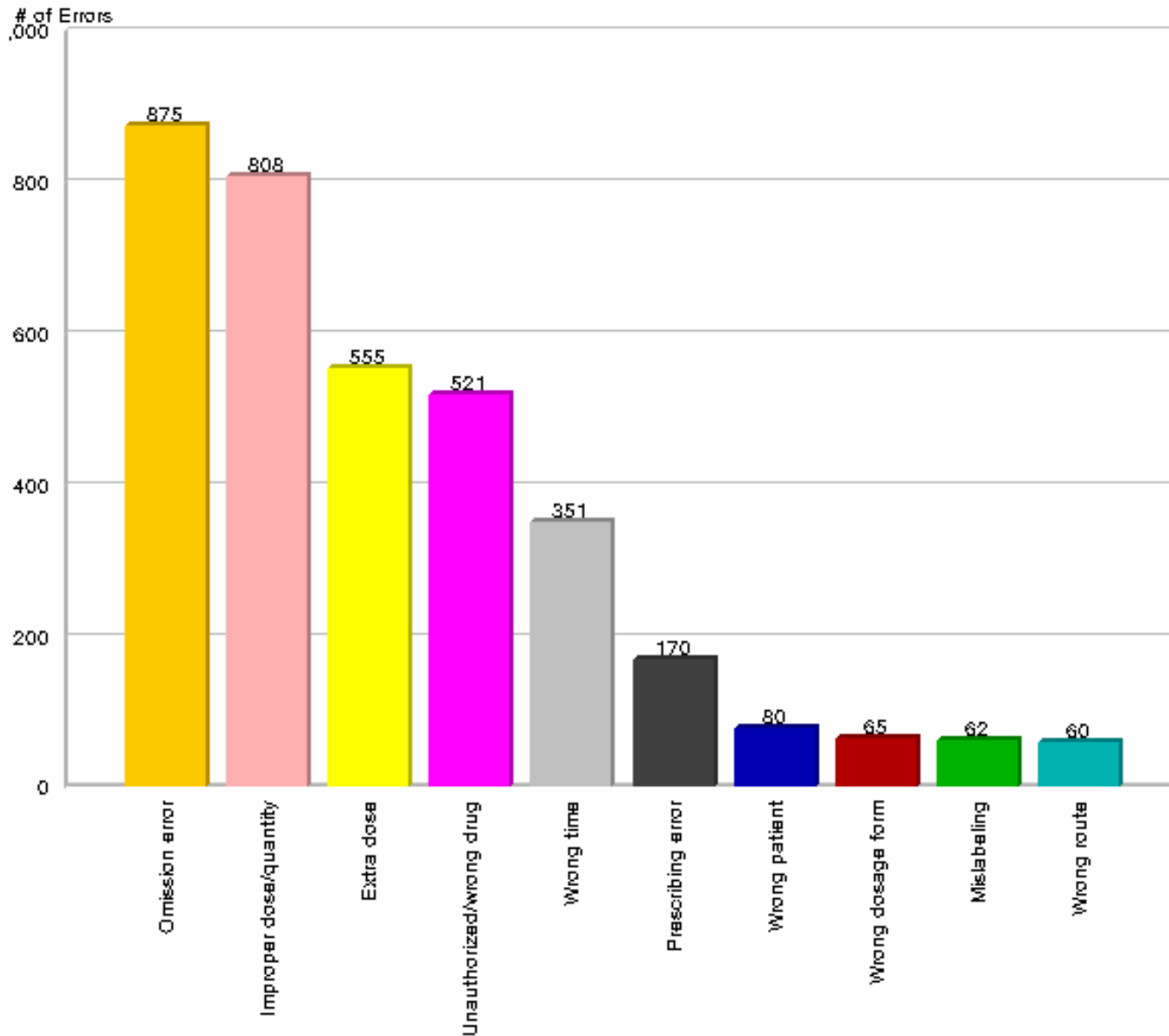


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MEDMARX version 6.5 is to be used solely as part of Licensee's internal quality improvement process.

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

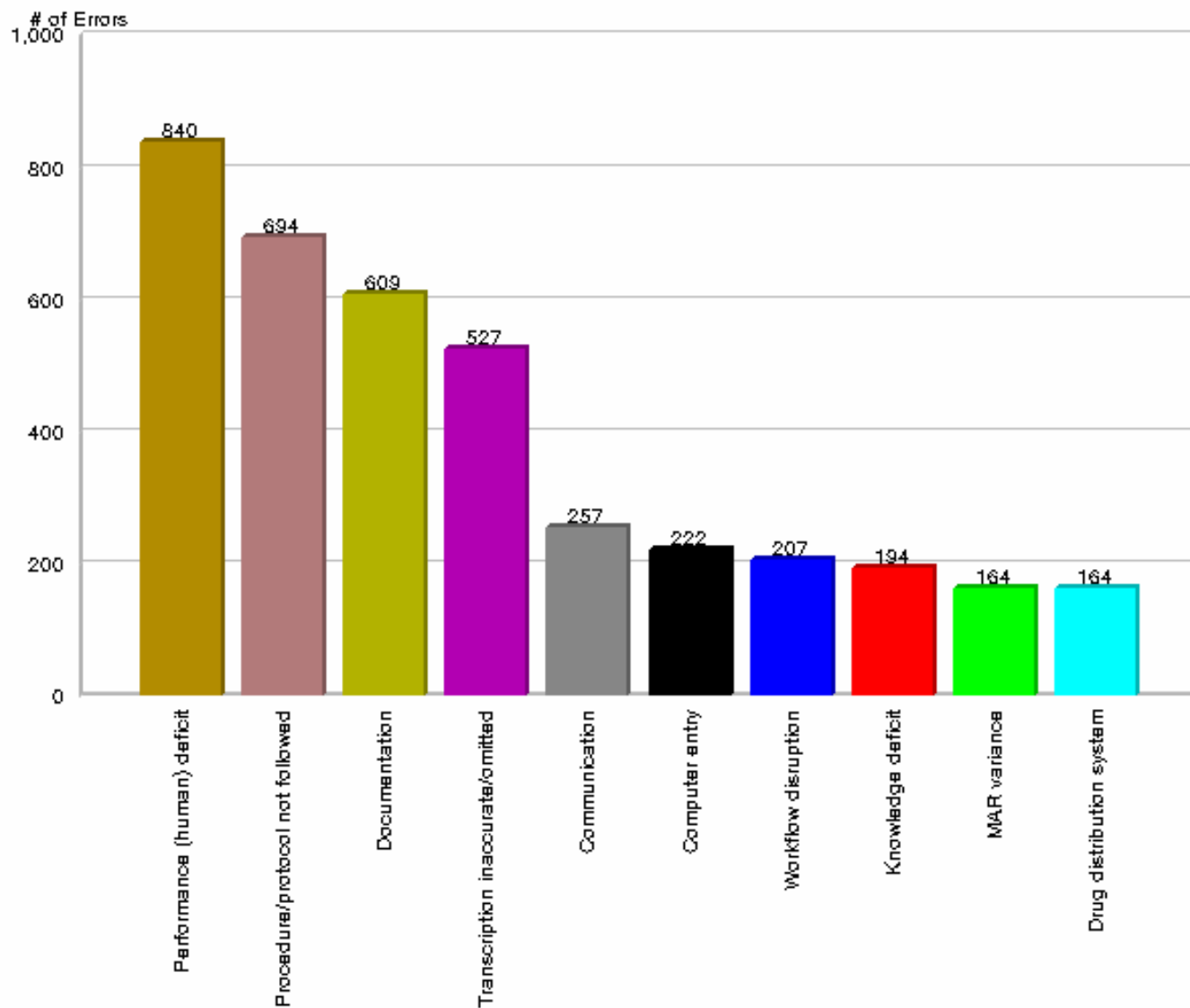


**MEDMARX Top Error Type chart**  
from 1/1/2006 to 9/30/2006 (all facilities) (Number of Facilities = 40)



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



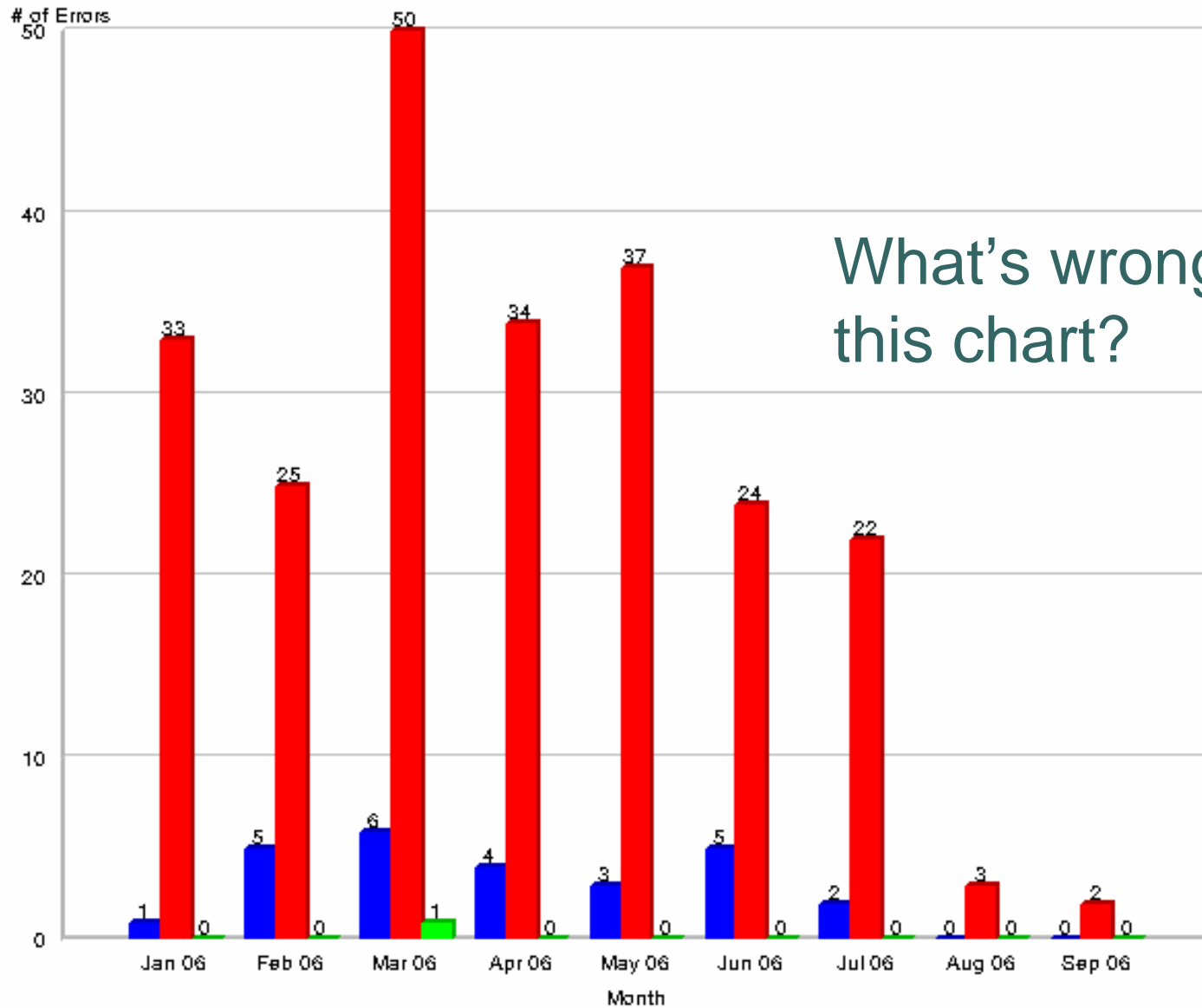


# Searches

- 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!**

**MEDMARX Graphic Trending chart based on Cause of Error  
from 1/1/2006 to 9/30/2006 (all facilities)**



What's wrong with this chart?

■ No Error    ■ Error, No Harm    ■ Error, Harm



# Searches

- 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

01/01/2006 to 09/30/2006 (Quarterly)

[Click here to see the selected criteria for this report](#)

Medication process node	Qtr 1 2006	Qtr 2 2006	Qtr 3 2006	Total
Administering	591	505	125	1221
Data not provided	0	0	0	0
Dispensing	119	89	25	233
Does not apply	0	0	0	0
Monitoring	4	10	1	15
Prescribing	33	43	26	102
Procurement	5	3	0	8
Transcribing/Documenting	184	179	26	389

Criteria: Severity Categories C-I



# Custom Searches

## Custom Search

HELP ?

Search --> [Custom Search](#) --> Select Facility Type --> Search Criteria Select

▲ TOP  
▼ BOTTOM

### 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

- |  |   |
|--|---|
| <input type="checkbox"/> Error category                | <input type="checkbox"/> Source of records          |
| <input type="checkbox"/> Date of error                 | <input type="checkbox"/> Date record was entered    |
| <input type="checkbox"/> Description of error          | <input type="checkbox"/> Type of error              |
| <input type="checkbox"/> Cause of error                | <input type="checkbox"/> Contributing factor        |
| <input type="checkbox"/> Medication process node       | <input type="checkbox"/> Staff type-initiated error |
| <input type="checkbox"/> Location of error             | <input type="checkbox"/> Generic Name               |
| <input type="checkbox"/> Error result on level of care | <input type="checkbox"/> Patient age                |

#### Additional Fields

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

#### Facility Profile

- |   |                                   |
|---|-----------------------------------|
| <input type="checkbox"/> Type of facility | <input type="checkbox"/> 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			
Record #	Source of records	Location of error	Location of error detail
1194929	Outpatient	Emergency Department	
1165671	Inpatient	Nursing (Patient Care) Unit	
1165983	Inpatient	Nursing (Patient Care) Unit	
1167976	Inpatient	Labor/Delivery	
1167979	Inpatient	Labor/Delivery	
1166578	Outpatient	Nursing (Patient Care) Unit	surgical services
1166629	Outpatient	Nursing (Patient Care) Unit	skilled nursing
1193343	Outpatient	Nursing (Patient Care) Unit	skilled nursing
1193373	Outpatient	Nursing (Patient Care) Unit	skilled nursing
1205319	Outpatient	Nursing (Patient Care) Unit	skilled nursing



# 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!

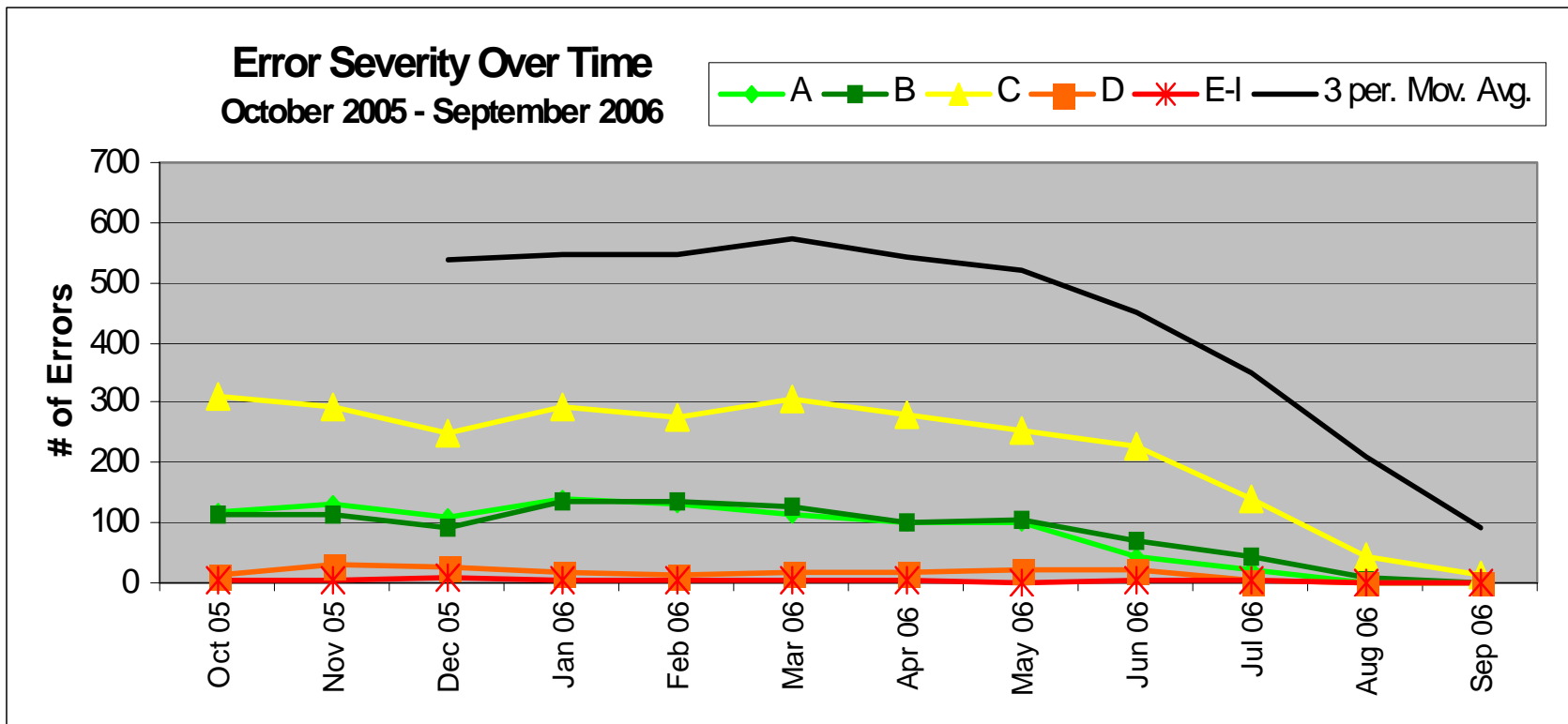


# Quarterly Reports

- 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

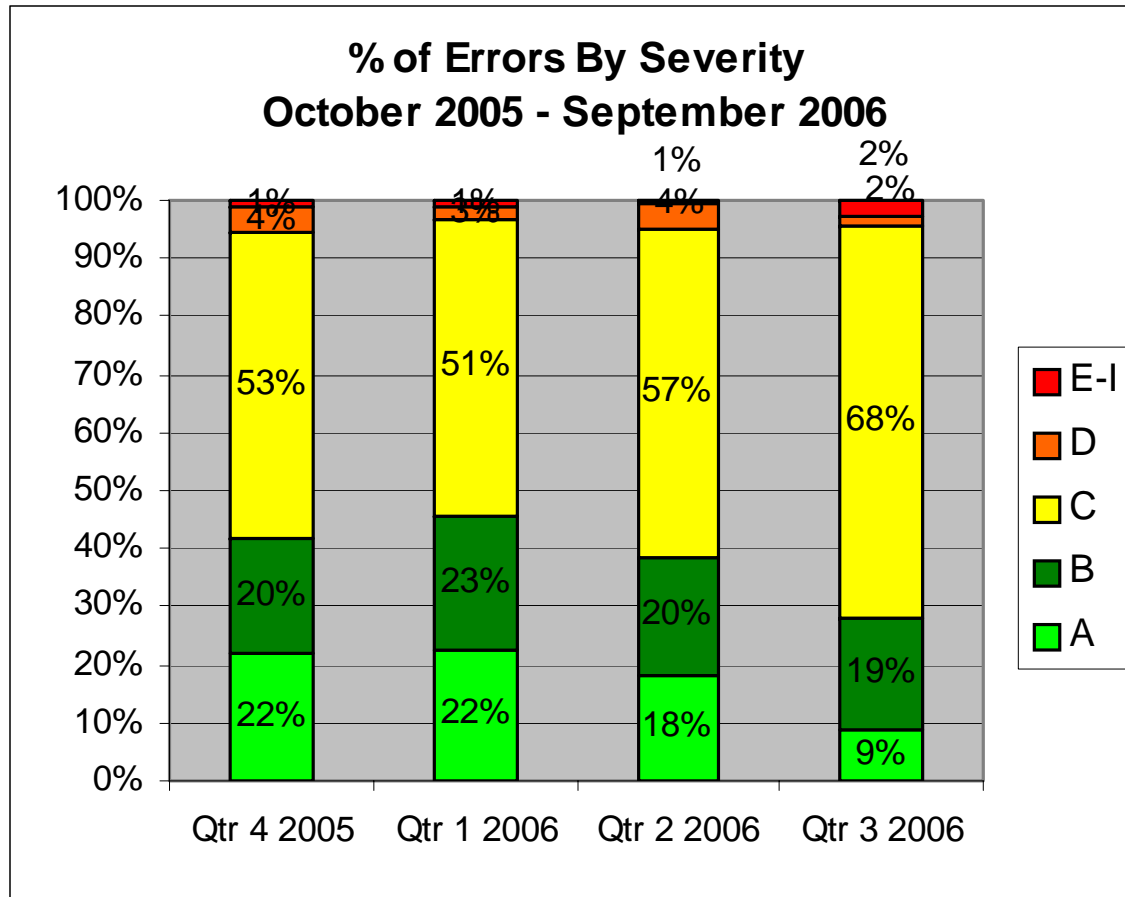


# Error Severity Over Time

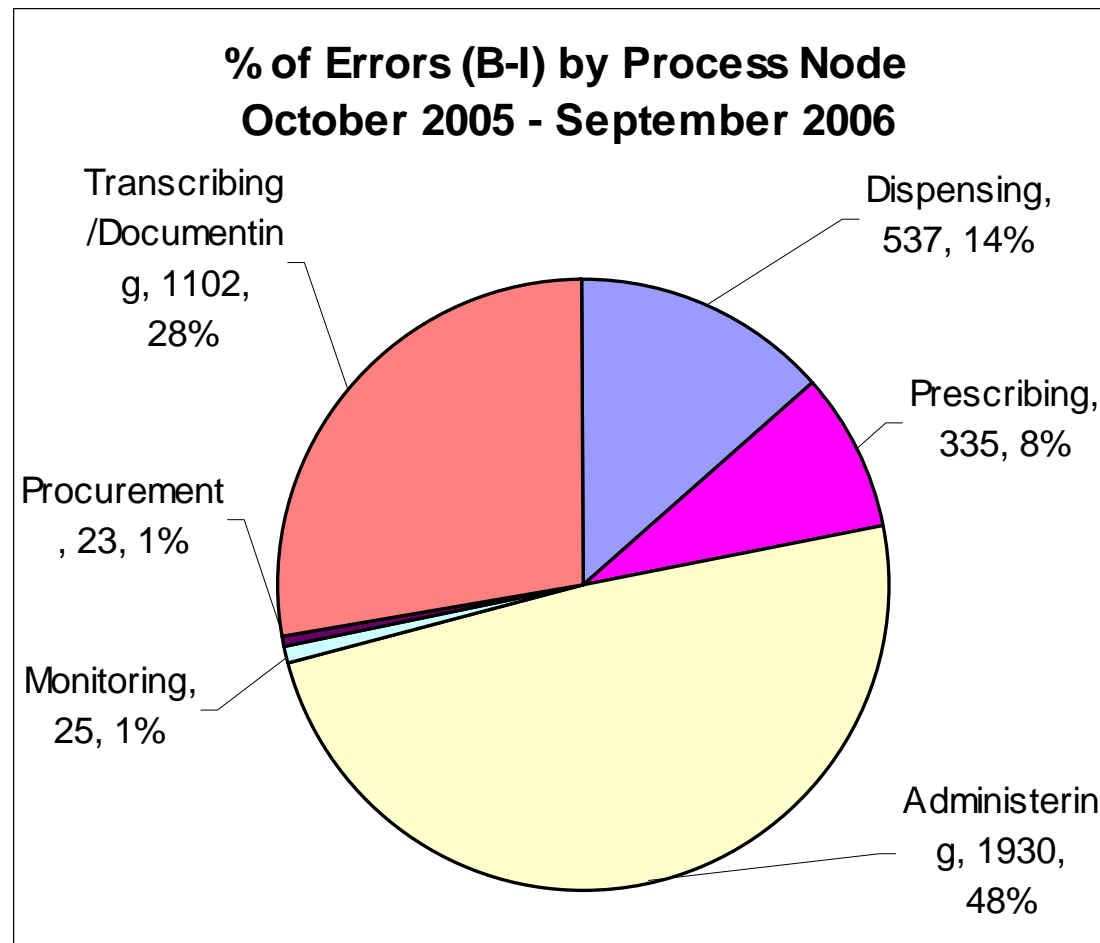




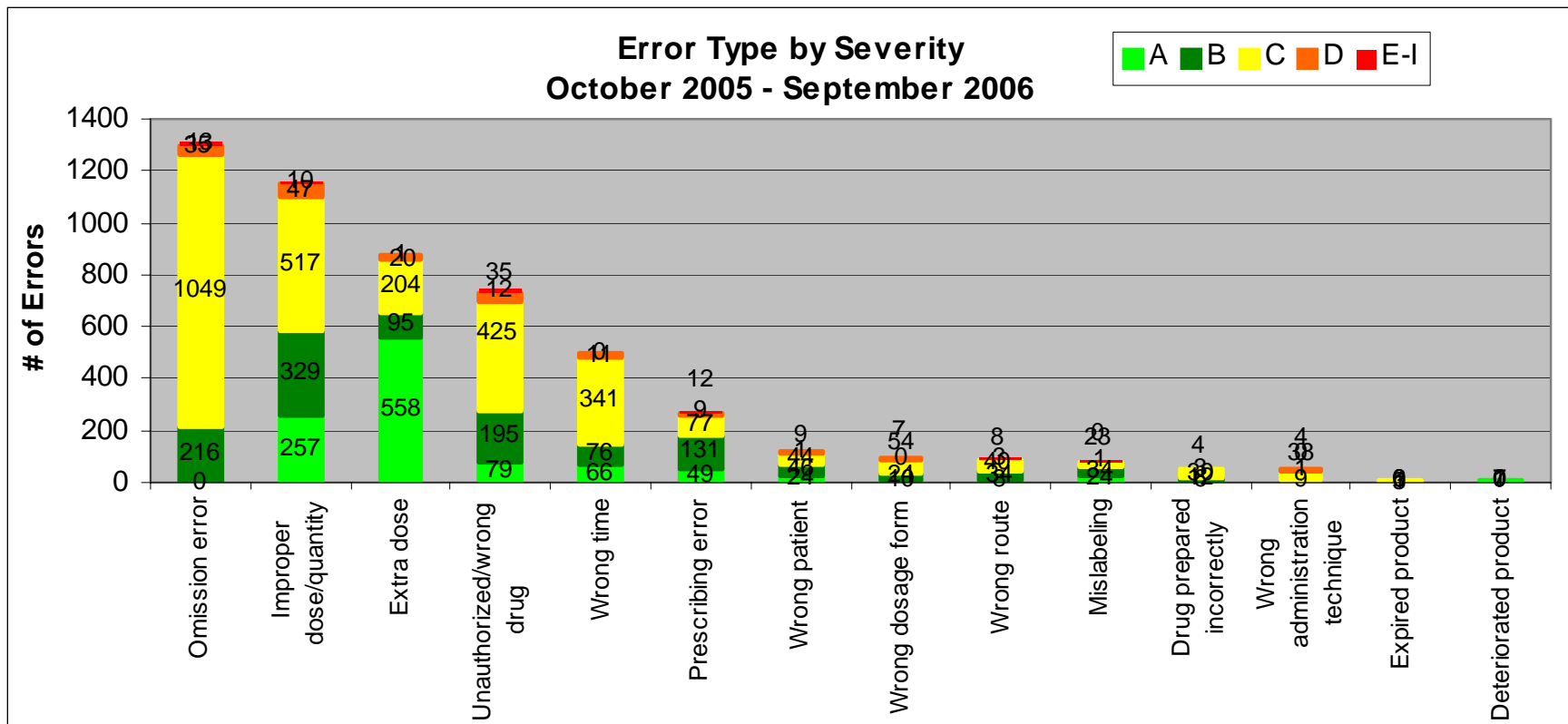
# Percent of Errors by Severity



# Percent of Errors by Process Node



# Error Type by Severity





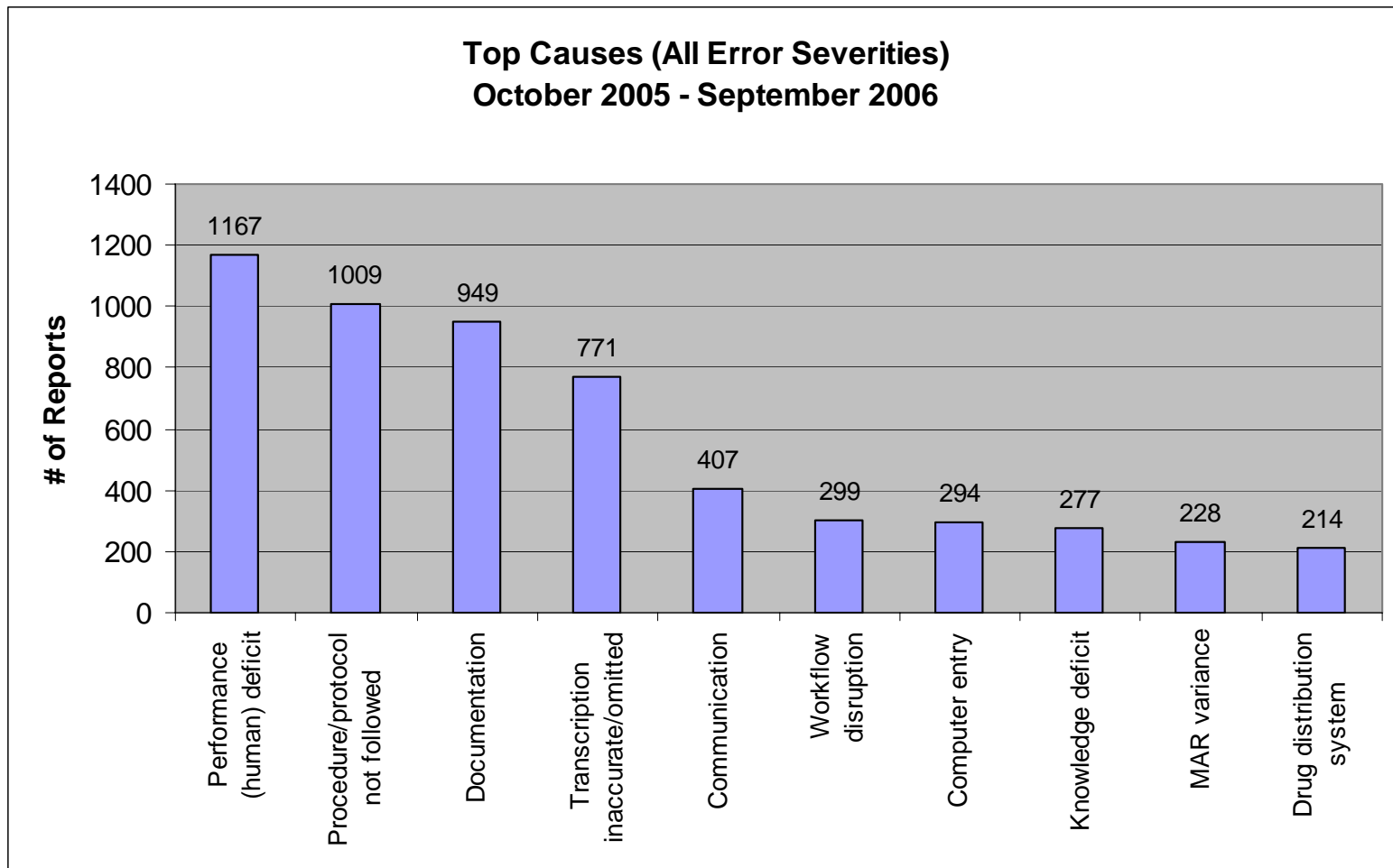
# Top Five Types of Error Drilldown

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

Type Of Error	Top 3 Causes	Top 3 Contributing Factors	Top 3 Level of Staff, Made	Top 3 Generic Names
Extra dose (653) *	Documentation (493) Procedure/protocol not followed (73) Transcription inaccurate/omitted (45)	Does not apply (558) A contributing factor not determined (42) Workload increase (16)	Does Not Apply (558) Nurse, Registered (36) Nursing Personnel, non-specific (13)	Data Not Provided (75) Ipratropium and Albuterol (39) Acetaminophen (22)
Improper dose/quantity (586)	Documentation (169) Transcription inaccurate/omitted (158) Procedure/protocol not followed (85)	Does not apply (257) A contributing factor not determined (161) None (49)	Does Not Apply (257) Nurse, Registered (106) Pharmacist (66)	Data Not Provided (149) Acetaminophen (24) Ipratropium and Albuterol (20)
Unauthorized/wrong drug (274)	Documentation (69) Transcription inaccurate/omitted (59) Procedure/protocol not followed (52)	A contributing factor not determined (90) Does not apply (79) Workload increase (42)	Does Not Apply (79) Nurse, Registered (78) Pharmacist (34)	Data Not Provided (41) Ipratropium and Albuterol (17) Hydrocodone and Acetaminophen (9)
Omission error (216)	Transcription inaccurate/omitted (60) Drug distribution system (47) Documentation (42)	A contributing factor not determined (83) No 24-hour pharmacy (43) None (32)	Nurse, Registered (97) Pharmacist (33) Nurse, Licensed Practical/Vocational (20)	Ipratropium and Albuterol (20) Potassium Chloride (12) Ceftriaxone (12)
Prescribing error (180)	Documentation (32) Written order (32) Transcription inaccurate/omitted (23)	A contributing factor not determined (65) Does not apply (49) Workload increase (27)	Physician (96) Does Not Apply (49) Nurse, Registered (19)	Data Not Provided (23) Acetaminophen (10) Hydrocodone and Acetaminophen (10)



# Top Causes of Error





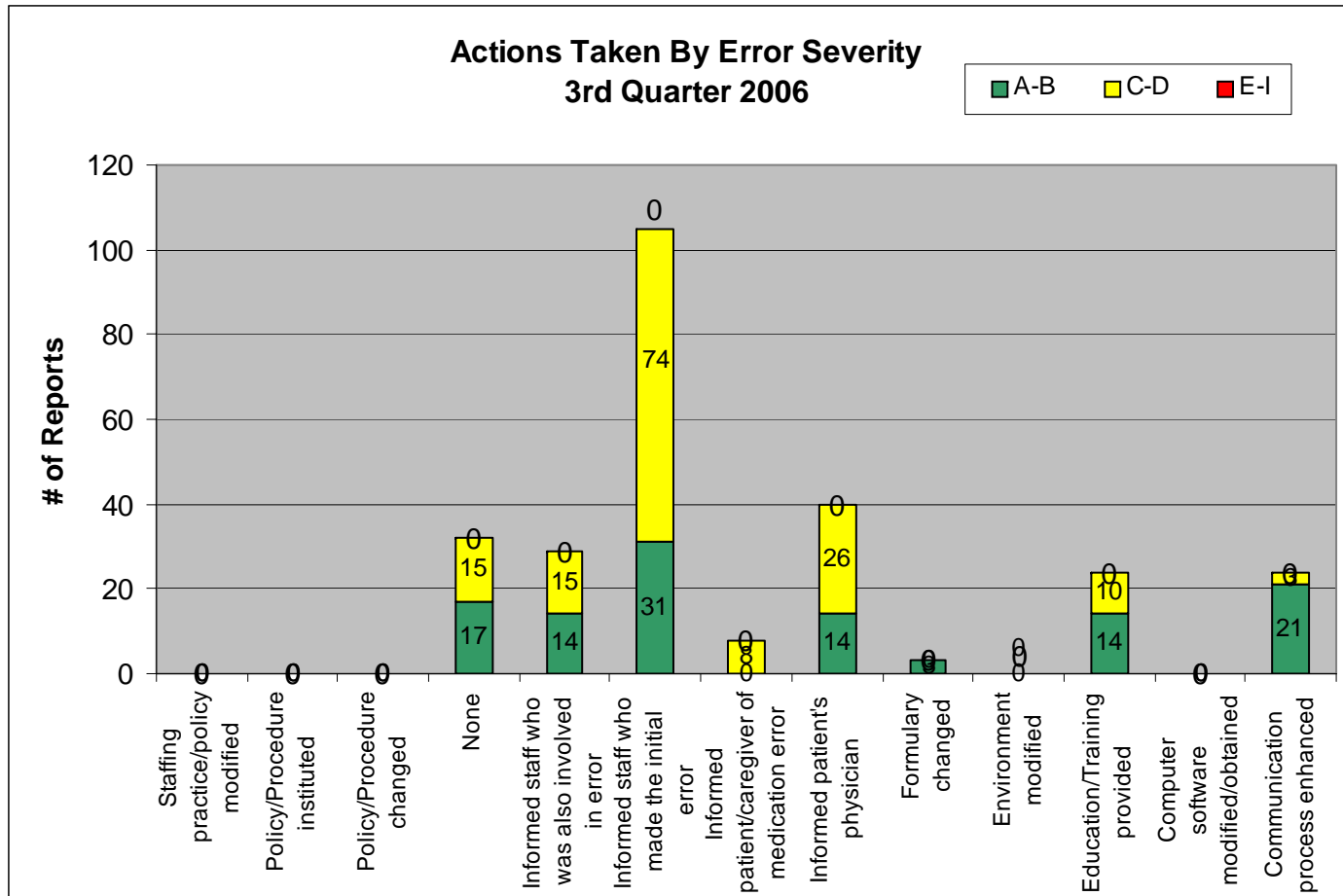
# Actions Taken Worksheet

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

Record #	Error category	Date	Description of error	Type of error	Cause of error	Action taken	Action taken detail
1162941	D	07/03/2006	order given for dobutamine stress test which was not done due to being unable to view cardiac images on echo. test was changed to nuclear stress test by physician. Meanwhile patient was take bac to ICU and returned after nuclear trace dose obtained. physician order was added to existing signed order and subsequently missed. dobutamine nuclear stree test performed insted of adenosine stress test.	Unauthorized/ wrong drug	Communication; Preprinted medication order form; Written order	Policy/Procedure changed	
1163659	G	07/06/2006	pyxis malfunction, RN did not call in pharmacist to correct problem, did not gove 0600 med.	Omission error	Dispensing device involved	Education/Training provided	RN will be counseled
1171237	F	07/13/2006	Doctor ordered Hydroxyzine 100mg IV , nurse gave med as ordered, med error route 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.	Wrong route	Knowledge deficit	Communication process enhanced; Education/Training provided; 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	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.



# Actions Taken by Severity





# Questions

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