Anticoagulation Solution Team

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Goal

- Implementation of an evidence-based process for anticoagulation administration.
- Project will encompass use of Heparin and Warfarin.

Six Critical Processes and Action Steps

- Selection and Procurement
- Storage/Availability (Initial Focus Area)
- Ordering/Transcribing
- Preparing/Dispensing
- Administration
- Monitoring (Initial Focus Area)

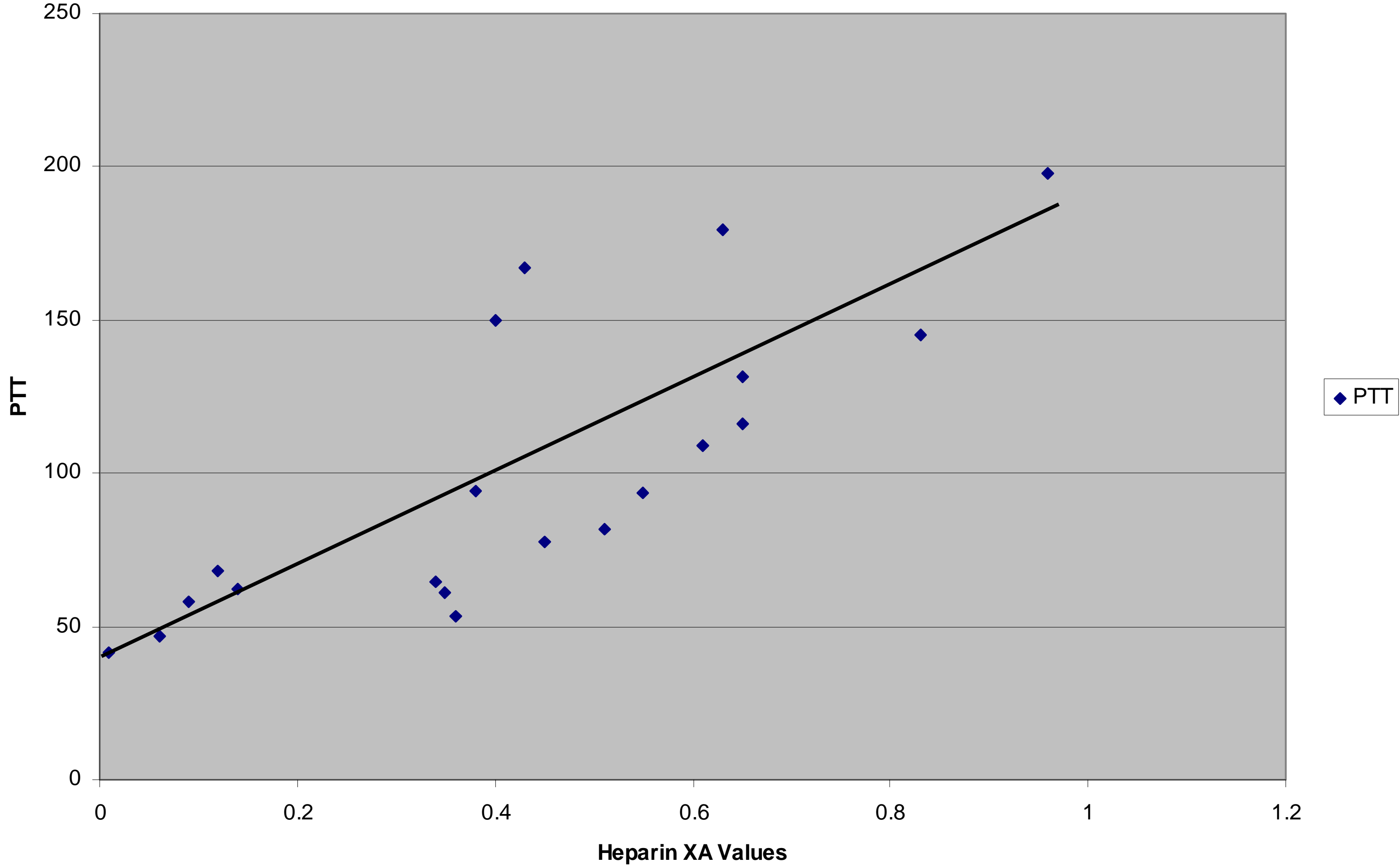
APTT vs. Heparin Assay - Summary

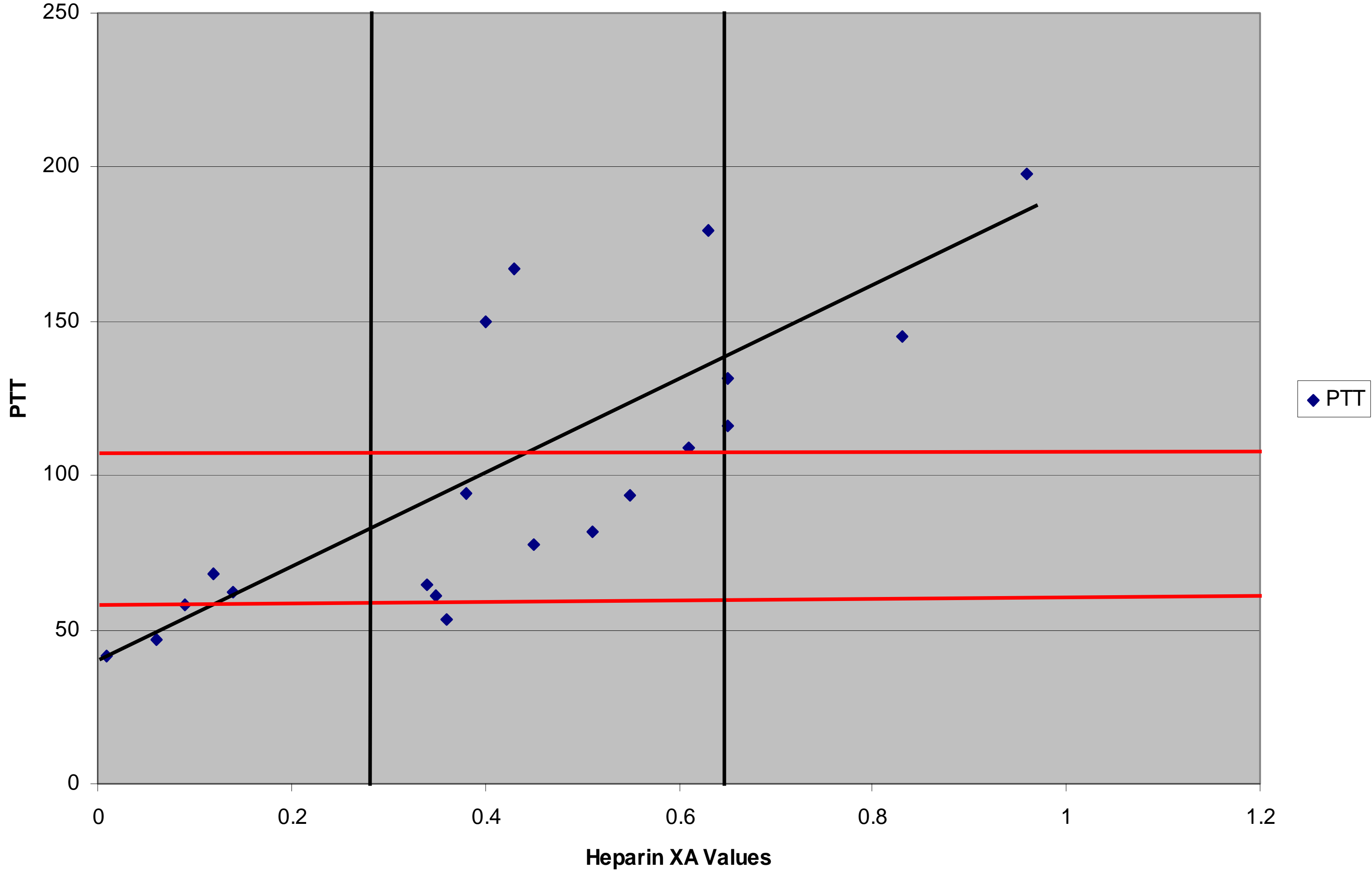
APTT

- More Testing
- More Pre-analytical interference
- More Pharmacy Involvement
- More Nursing Involvement
- More Lab Involvement
- Increased Potential for Error
- Potential Involvement by Radiology/Blood Bank
- Potential for Increased Length of Stay

Heparin Anti-XA

- Enhanced Patient Management
- Decreased Potential for Error
- Significant Reduction in Global Labor and Associated Costs
- Potential to Decrease Length of Stay


PTT vs Heparin XA Values
250
200
150
100
50
0
PTT
0
0.2
0.4
0.6
0.8
1
1.2
Heparin XA Values
PTT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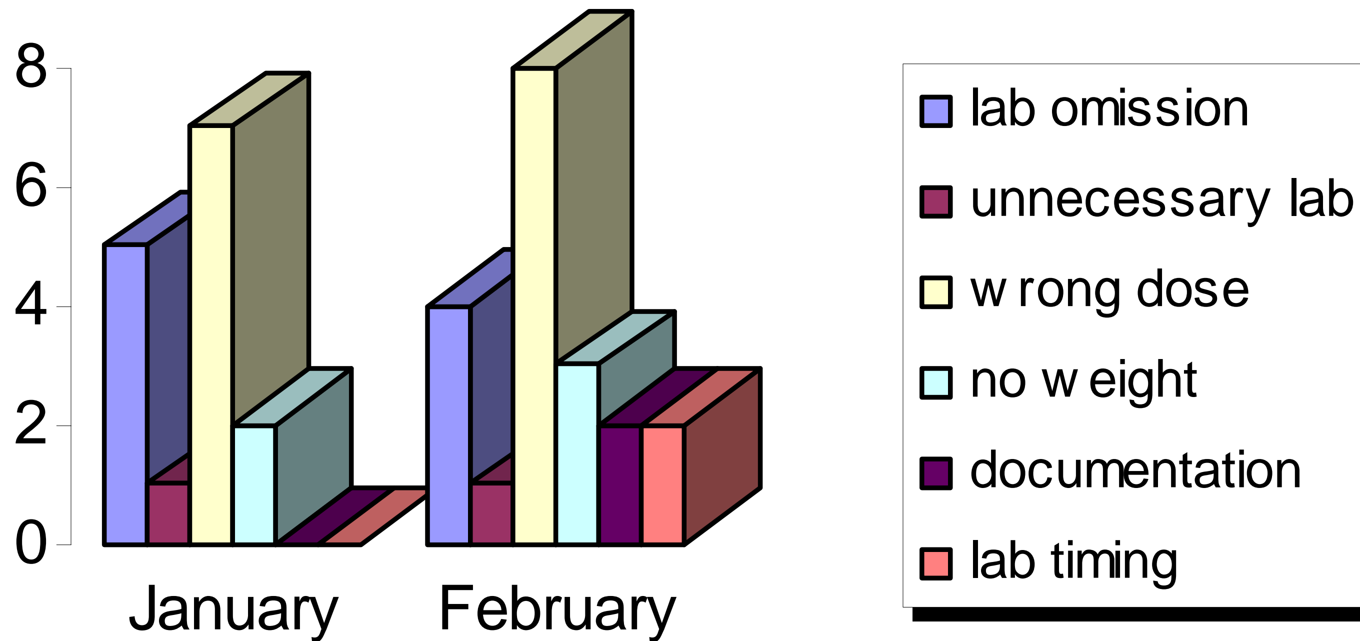
Heparin Medication Errors



Heparin Medication Errors

- January Med Errors Attributed to Heparin 15/42 = 35.7%
- Types of Errors:
  - Two consecutive labs missed n=5
  - Unnecessary Lab Work n=1
  - Wrong dose or rate due to calculations n=7
  - Patient not weighed n=2

February Med Errors Attributed to Heparin

21/42 = 50%

Types of Errors:

- Baseline Labs Were Being Missed n=4
- Labs Not Being Drawn at Correct Time n=2
- Unnecessary Lab Work n=1
- Discovered ECU Nurses Did Not Know How to Complete the Med Sheet n=2
- Wrong Dose or Rate Due to Calculations n=8
- Patient Not Weighed n=3
- Wrong Patient Name Stamped on Sheet n=1

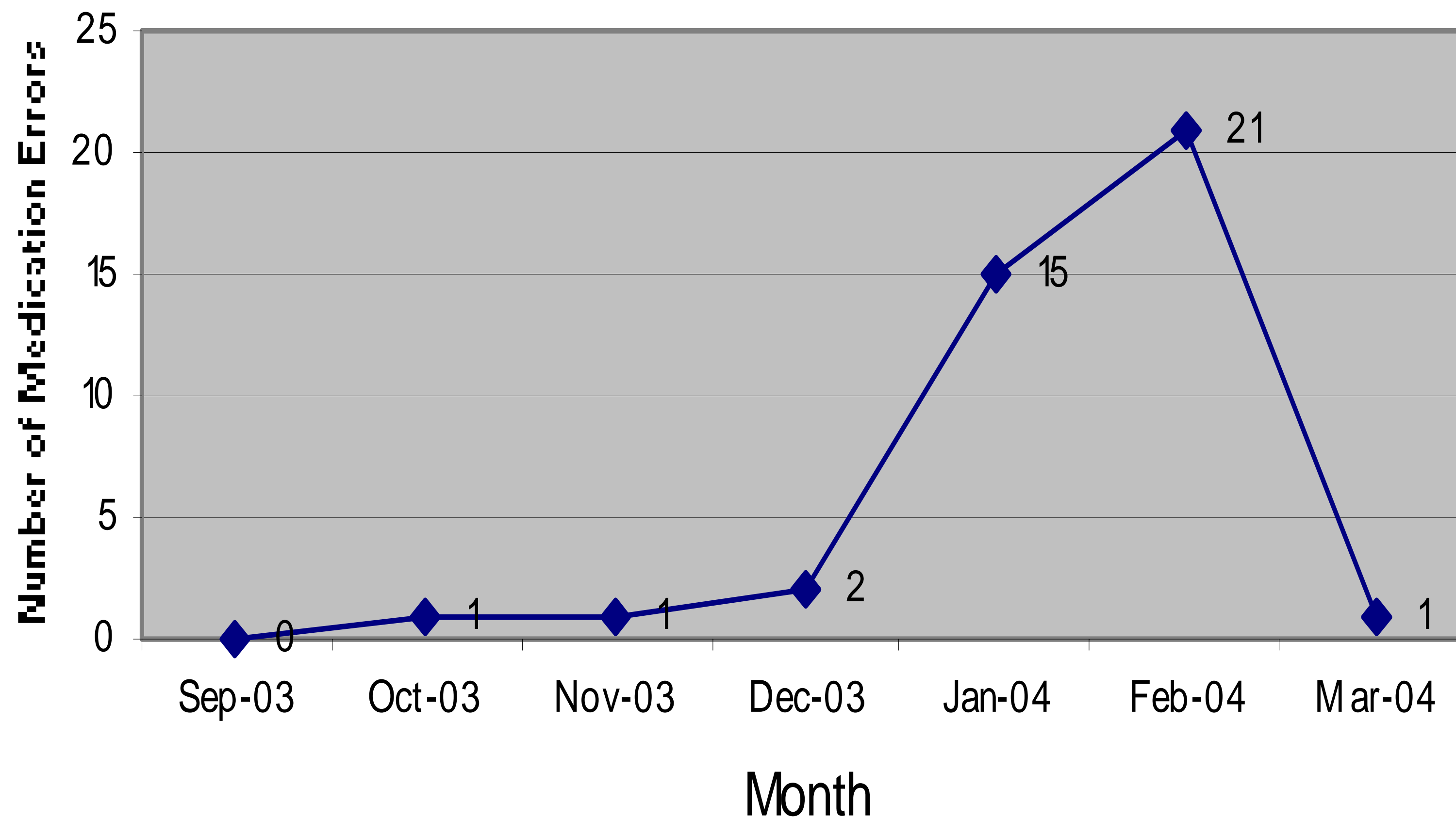
Implementation to Date

- 1/6/04 Heparin Assay Initiated
- 1/27/04 Preprinted Orders Revised
- 3/4/03 Deleted Rounding of Doses and Began Using "Dose Mode" pump setting
- 3/19/04 Relocation of Heparin Drip Storage to Prevent Inadvertent Mix Ups.
- 3/22/04 Evaluation and Verification of Storage of Heparin Vials
- 3/22/04 Verify Floor Stock of Heparin Was Appropriate and in Keeping With Policy
- 4/19/04 Evaluation of Hematology Calibration System
- 4/19/04 Evaluation of Fall Risk Assessment

Lab Pharmacy Data Link to Improve Communication of Lab Work to Pharmacist.

ED Begins Using Heparin Flow Sheet

Heparin Reported Medication Errors September 2003 – March 2004



Outcome Comparisons

PTT Weight Based	Heparin XA Values
77% of patient weighed	100%
10.94 hours to verified anticoagulation	7.76 hours to verified anticoagulation
2.77 (mean) adjustments to achieve therapeutic range	2.33 (mean) adjustments to achieve therapeutic range
N=35	N=114

“To err is human, to improve is divine.”

ISMP 3/7/2001