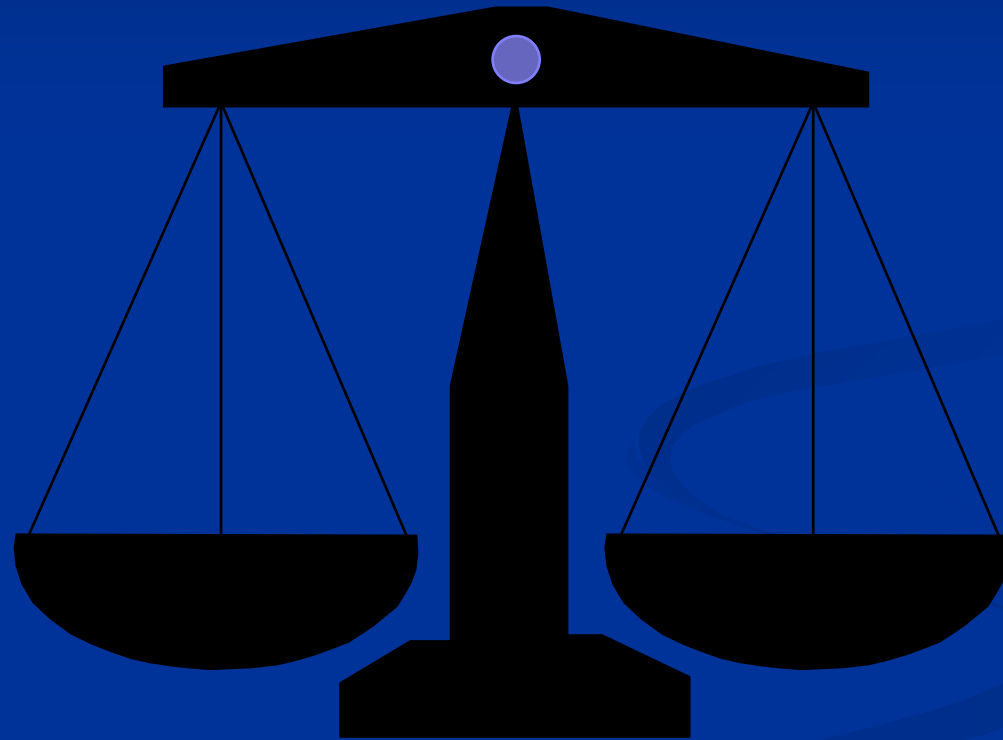


IV HEPARIN

Getting the Balance Right



Karen Flounders
Thrombosis Nurse
Royal Perth Hospital
June 2008

350 Pharmacists and Nurses
Interviewed by

The Institute for Safe Medical Practices

Question

Is Heparin A High Risk Medication?

Pharmacists 75%

Nurses 59%

Heparin

Heparin ranked 7th in medicines most frequently involved in incidents reported through AIMS in WA.

Anticoagulants are second only to cardiovascular drugs in relation to hospital Adverse Drug Events.

Burgess C. L. (2005) Medical Journal of Australia. 182 (6) 267-270

Causes of Anticoagulant Drug Errors and Drug Related Harm

Practice errors (failure to prescribe)

Dose errors

Dispensing errors

Monitoring (aPPT)

Patient information (weight, allergies, contraindications ect)

Drug information (limited information available)

Communication

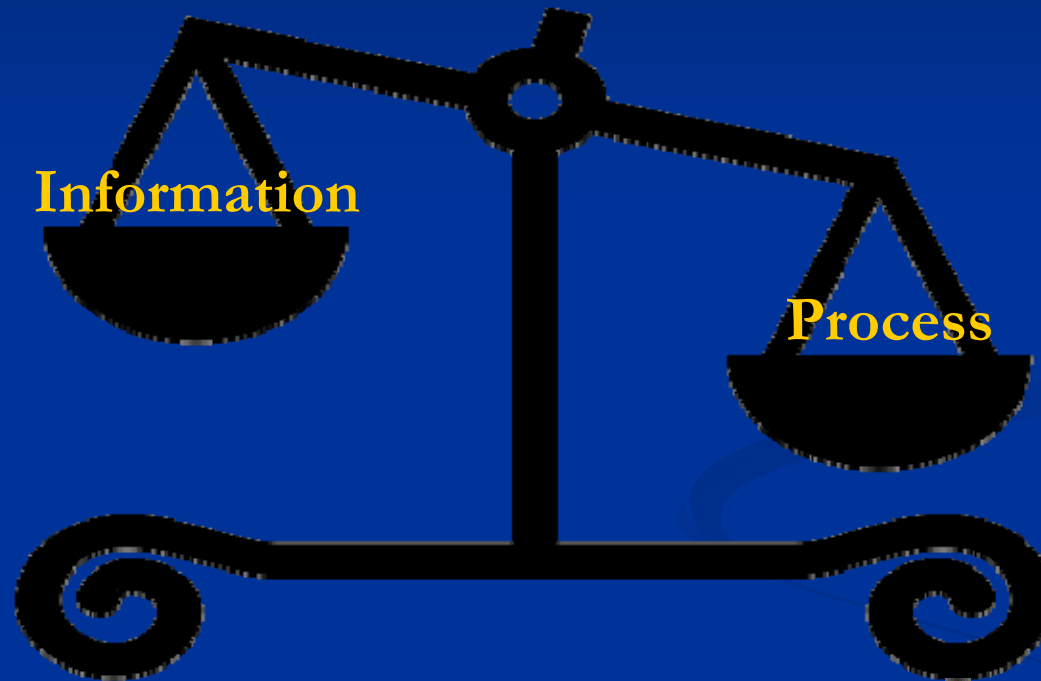
Staff competency (junior staff, ect)

Patient knowledge deficits

Environmental factors (staffing, lighting, interruptions)

The West Australian Medication Safety Group appointed a sub committee working group to look at promoting and facilitating anticoagulation safety. The committee identified that there was no uniform anticoagulation medication chart across public and private hospitals within WA and this could be a source of anticoagulant medication adverse events. The end result was a new single anticoagulation medication chart for use in WA hospitals. The aim was to improve anticoagulation safety.

Original Anticoagulant Chart in use at RPH

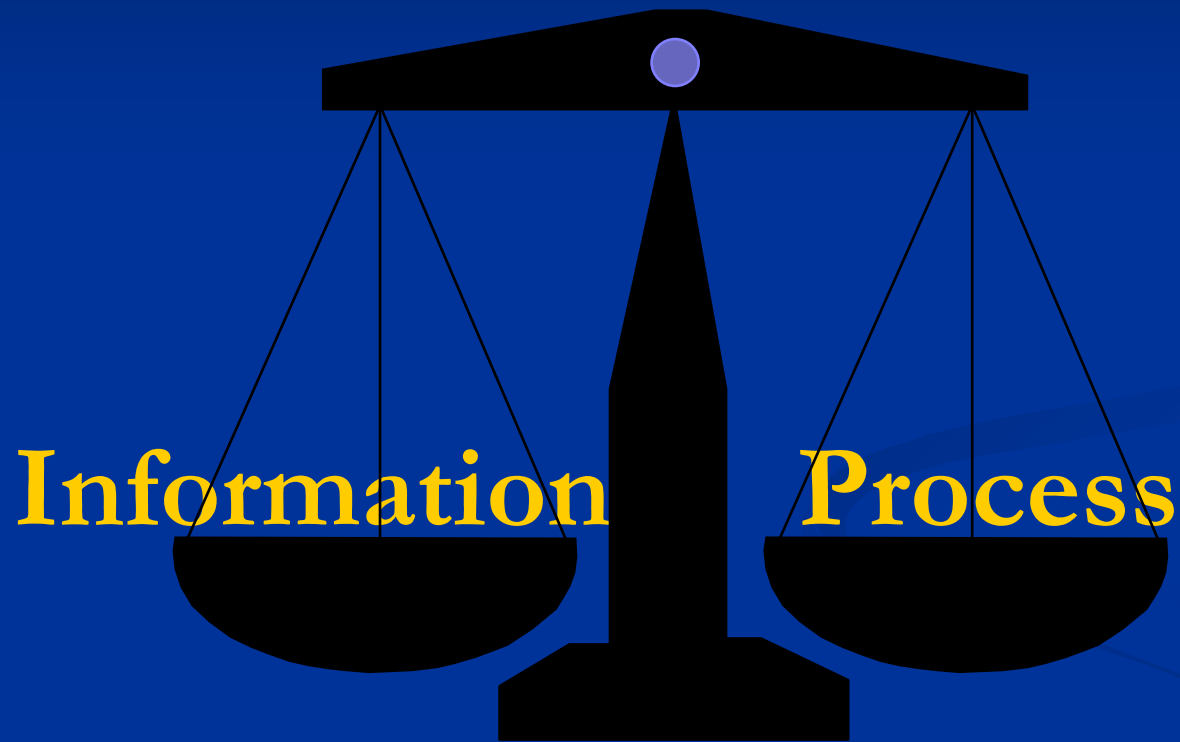


Newly Developed Anticoagulant Chart

introduced at RPH in Dec 2006

- Prescription for Warfarin
- Prescription for Low Molecular Weight Heparin
- Weight Based IV Heparin Nomograms
- VTE & ACS Nomograms
- Decision Support Information
- New aPPT ranges

Newly Developed Anticoagulant Chart



Anticoagulant Chart Audit

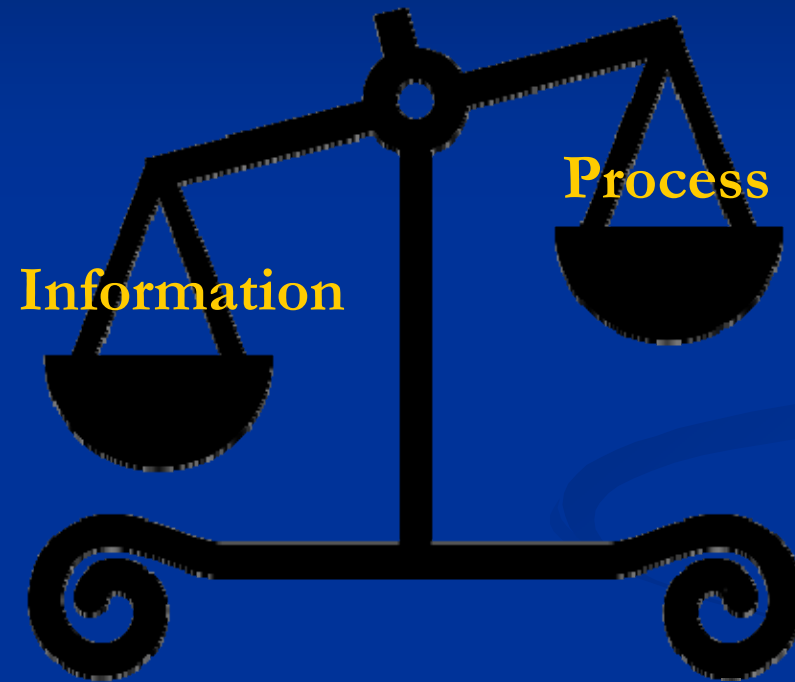
Thirty Four IV Heparin Charts

- Nine aPPT samples took longer than 3 hours to get to the labs.
- Seven aPPT samples took longer than 5 hours to be actioned.
- 6 aPPT samples were taken 3 hours too early.

Continued

- Lack of confidence in converting heparin units to mls (60% nurses not confident with mathematical conversions)
- Heparin infusions disconnected for showers xrays, ect
- Variation in who accessed aPTT results
- Variation in who is responsible for new heparin rate and bolus doses
- Telephone Orders/Transcribing Errors

Newly Developed Anticoagulant Chart



The new Anticoagulant Chart was weighted towards information as the chart was based on assumptions that processes and responsibilities for the prescription and monitoring of IV Heparin were clearly defined.

IV Heaprin

70 Steps

from prescription to first 24 hours

Ten People

Doctors, Nurses, Phlebotomist, Porters, Lab Staff

Assumption

All Clinical Areas had clearly defined processes in place.



Reality
No they didn't



Lessons for Practice

KISS is Best

- Clearly define **WHO** is responsible for what action all of the time ie Dr accesses results, Nurse rings Dr ect
- Timely aPPT results (1-2 hours)
- Simple heparin nomograms (less nomograms the better)
- Readily convertible heparin bolus doses
- Provide units to mls conversion charts
- Consider whether you should use IV heparin in all areas of practice?
- Consider LMWH as an alternative or
- Switch to LMWH as soon as possible

LMWH a Safer Alternative?

- 5 Steps
- 3 People
- Less Baton Dropping

Nursing Practice Standard

Developed at RPH in May 2008

Currently with the Nursing Practice Committee.

Hopefully it will assist nurses improve the delivery of IV heparin by defining responsibility for

- Documentation of patients weight
- Accessing aPPT results on Isoft
- When to contact the doctor
- Changing heparin infusion rates
- Subsequent aPPT blood sample collection