



The Nuts and Bolts of Hypotensive Joint Replacements at Ballarat Health Services

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2007

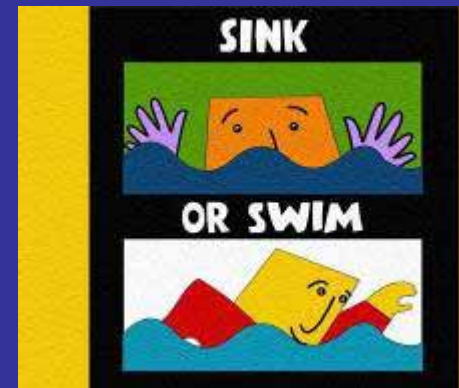


Ballarat & Ballarat Health Services



What is a ... MET/ICU Liaison Nurse?

- Increased demands for ICU beds
- Patients discharged from ICU “most fit” rather than ready for discharge
- ICU emergency re admissions
 - Dramatically higher mortality
 - Increased length of hospital stay



What is a ... MET/ICU Liaison Nurse?

“MET consists of a team of medical and critical care nursing staff who respond to emergency calls from set criteria to provide immediate assistance in the management of seriously ill patients in hospital”

- Huge increase in amount of calls since implemented
- 245 calls in 2005
- MET/ICU Liaison - data collection and review

Noting trends.....

- High number of orthopaedic calls
- Hypotension post TKR & THR appeared to occur commonly
- Need to look at data to assess – fact /fiction
- ? Common reasoning's as to why eg.
 - length of time in theatre
 - blood loss
 - IV fluids intra-op and post
 - Type of anaesthetic
 - Age



Audit over 12 months

9/3/05 – 9/3/06

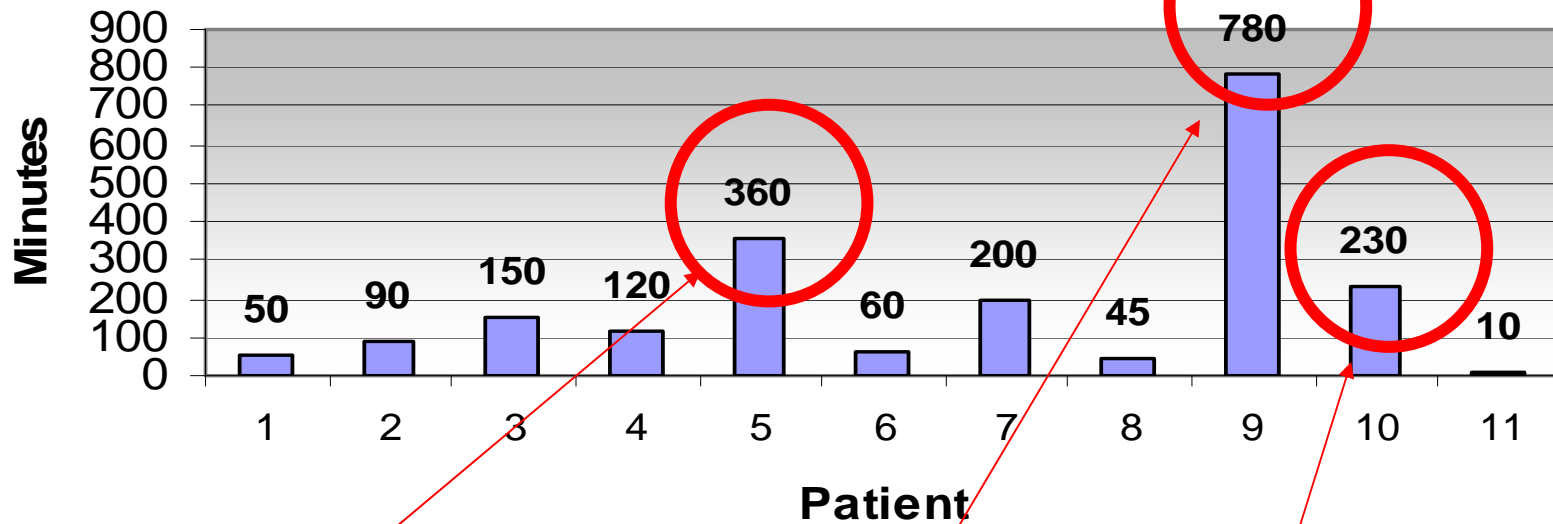
- Using the Respond Blue / MET database in combination with the hospital database system
 - Tracked all MET calls on Orthopaedic ward relating to hypotension post TKR & THR (revisions included)
 - 10
 - Tracked all emergency HDU/ICU admissions relating to hypotension post TKR & THR
 - 1
 - Looked at total numbers of TKR & THR for same time period
 - 110
- **10% chance of a MET call**

What we measured..

- Name
- Surgeon
- UR
- Age
- ASA
- Anaesthetist
- Public / private
- Type of anaesthesia
- Epidural?
- BP – intraop, recovery, ward – (worst)
- ? Remains on ward
- Indwelling Catheter?
- Length of time between RTW and MET call
- Estimated blood loss
- Length of operation
- IV fluids – intra op / recovery
- IV fluid rate on RTW
- Time in recovery
- Other comments
- Length of stay
- Day of surgery
- Time of return to ward
- Temperature



LENGTH OF TIME RETURN TO WARD TO MET 9/3/05 - 9/3/06



Blood loss intra op – fluids ++

? Pain relief

Parameters given – Fluid bolus given earlier on RTW

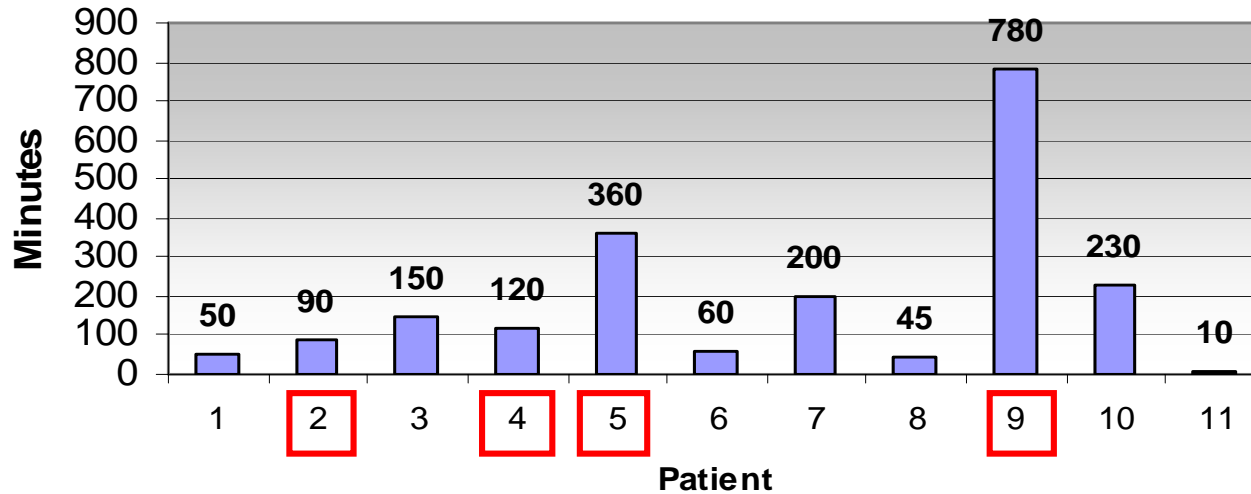
Average time = **190** minutes

Average time minus 3 outliers = **90** minutes

Time in recovery vs Time on ward prior to MET

| Recovery | | | Time on ward prior to MET | | |
|---------------|---|----------|---------------------------|---|----------|
| • Patient 1 | - | 70 mins | • Patient 1 | - | 50mins |
| • Patient 2 | - | 30 mins | • Patient 2 | - | 90 mins |
| • Patient 3 | - | 55 mins | • Patient 3 | - | 150mins |
| • Patient 4 | - | 40 mins | • Patient 4 | - | 120 mins |
| • Patient 5 | - | 40 mins | • Patient 5 | - | 360 mins |
| • Patient 6 – | | 35 mins | • Patient 6 – | | 60 mins |
| • Patient 7 – | | 25 mins | • Patient 7 – | | 200mins |
| • Patient 8 - | | 100 mins | • Patient 8 - | | 45 mins |
| • Patient 9- | | 40 mins | • Patient 9- | | 780 mins |
| • Patient 10- | | 55 mins | • Patient 10- | | 220 mins |
| • Patient 11- | | 120 mins | • Patient 11- | | 10mins |

LENGTH OF TIME RETURN TO WARD TO MET 9/3/05 - 9/3/06



Blood loss??

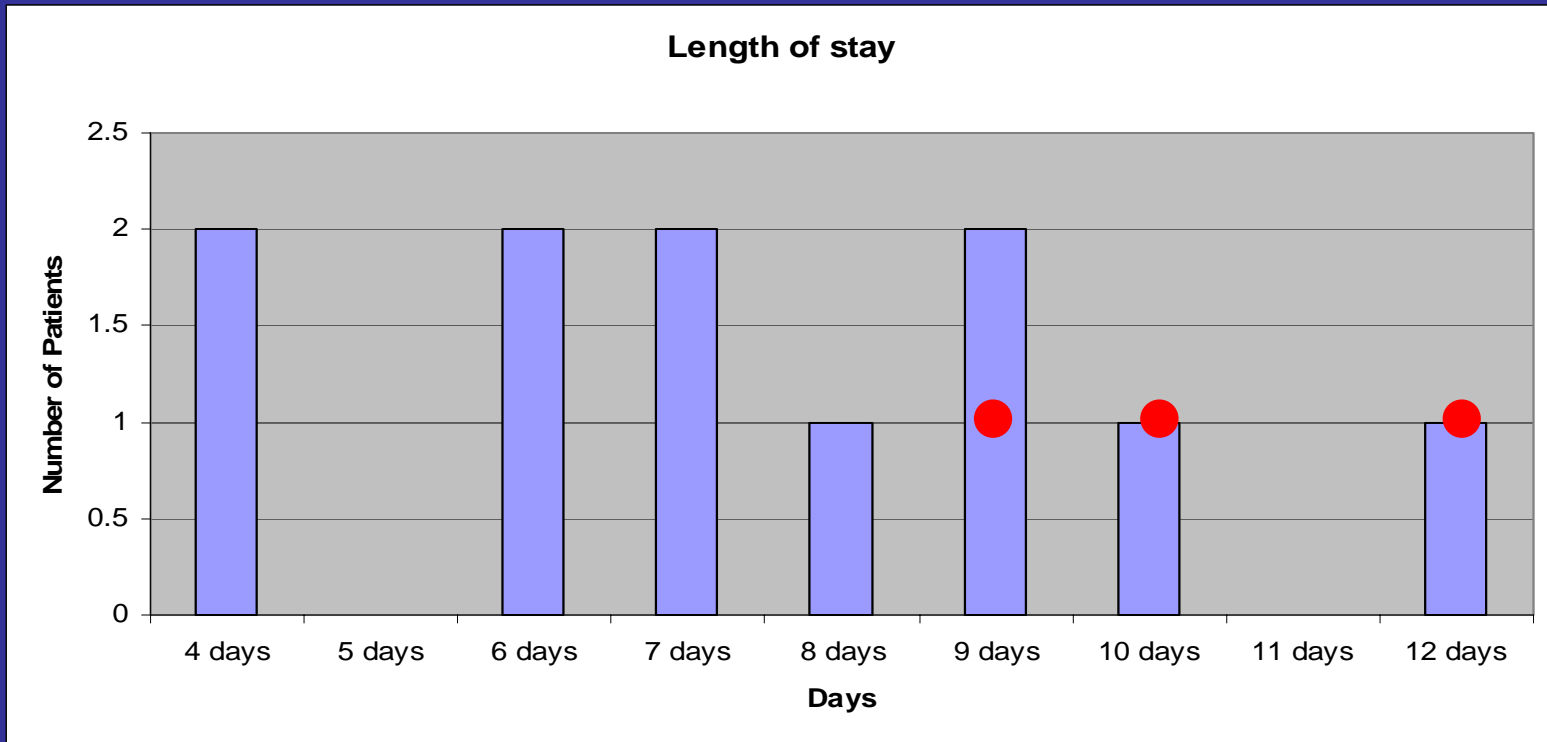
2 - 80mls

4 - 250mls

5 - 800mls, 600 in bello

9 - 730mls

How long did they stay?



- Average stay of 7.45 days
- 4 days – shortest
- 12 – longest
- 3 patients for further rehab
- Average Length Of Stay (ALOS)
 - BHS – 8.07
 - State – 9.28

In summary...

- 10% of all elective joint replacements – MET call for hypotension
- No obvious cause
- Average time for MET calls on return to ward = 3 hours
- The longer the stay in recovery related to the shorter time to MET call

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What to do with the data?

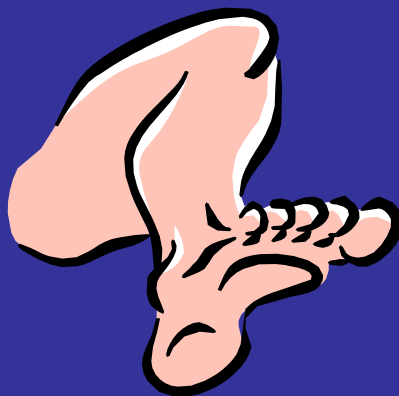
- Intensive Care Morbidity and Mortality meeting
- Invitation to the orthopaedic surgeons to attend
- Interesting discussion
- Change of practice

- Nursing

- More frequent BP measurements in the first 2/24
- Room allocation
- Fluid bolus

- Medical

- Fluid bolus
- ICU medical review in recovery if > 2/24 stay or periods of hypotension



Commitment by

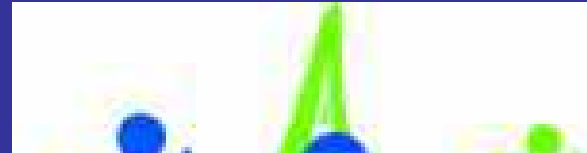
**Nursing / Orthopaedics / Anaesthetists
to participate in a prospective**

“Joint Audit”

In conclusion...

- Data collection can be an effective tool to alter clinical outcomes
- Nursing staff more empowered
 - Fluid bolus orders
 - More frequent observations
- Medical staff
 - More aware of their patients
 - Discussing the ongoing management of fluid orders etc.

Conflict of interest.....



References

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