



Haemolysis & Mislabelling in the Emergency Department

A quality improvement project
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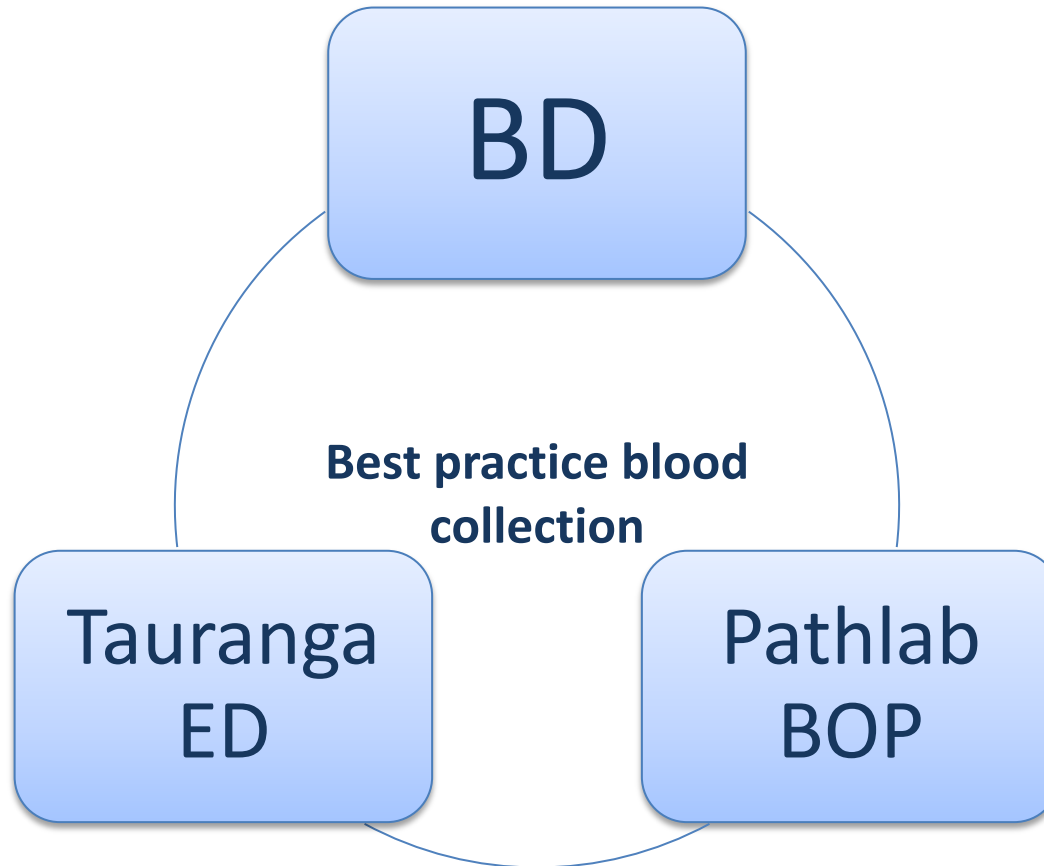


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healthy, thriving communities *Kia Momoho Te Hāpori Ōranga*



In the beginning...



Six Sigma Methodology

Define

- Define the problem goal and scope of the project or improvement

Measure

- Gather the information on the current state

Analyse

- Identify potential root causes and validate with data

Improve

- Identify test and proof solutions to address the root cause

Control

- Standardise processes and document improvement



The issues

Haemolysis

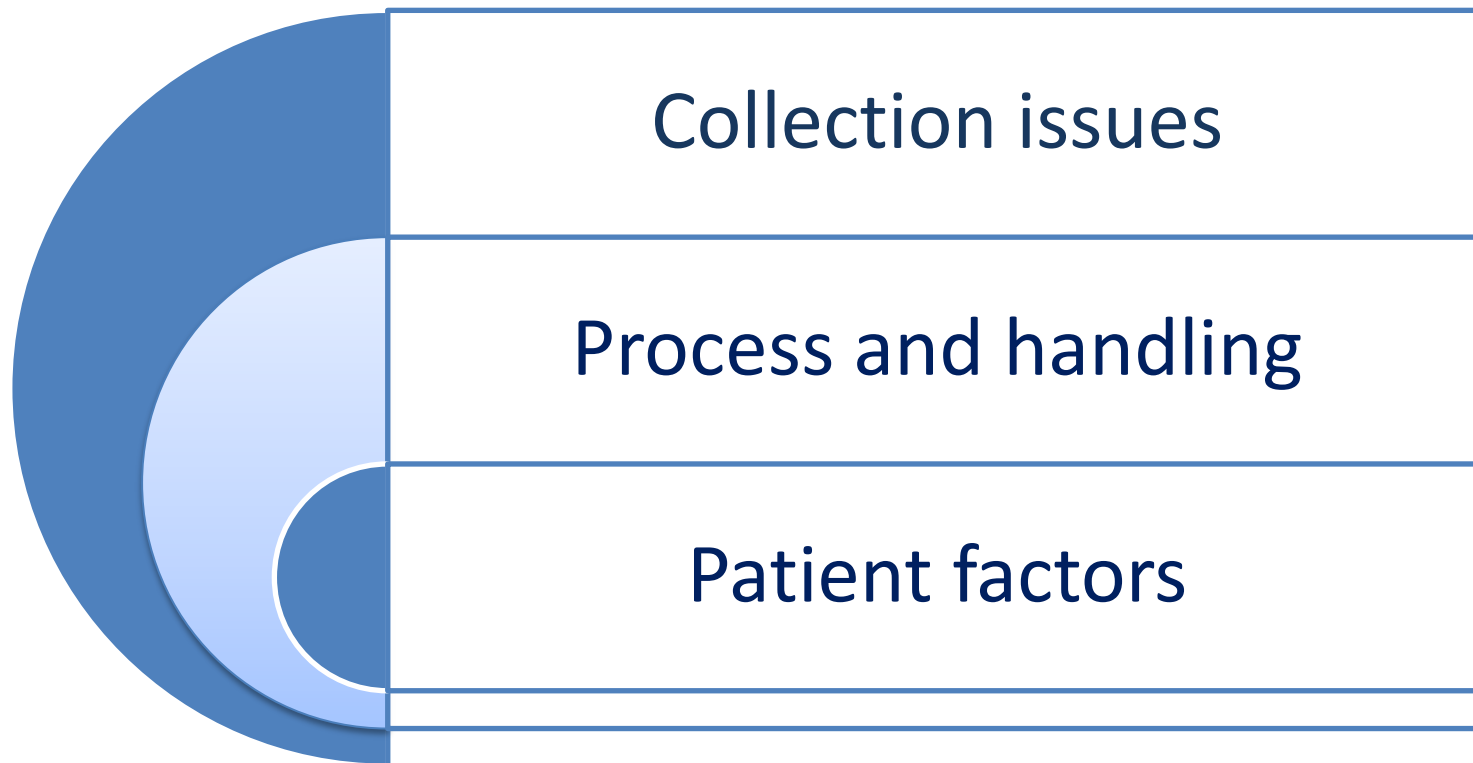
- Gross and Moderate

Mislabelling

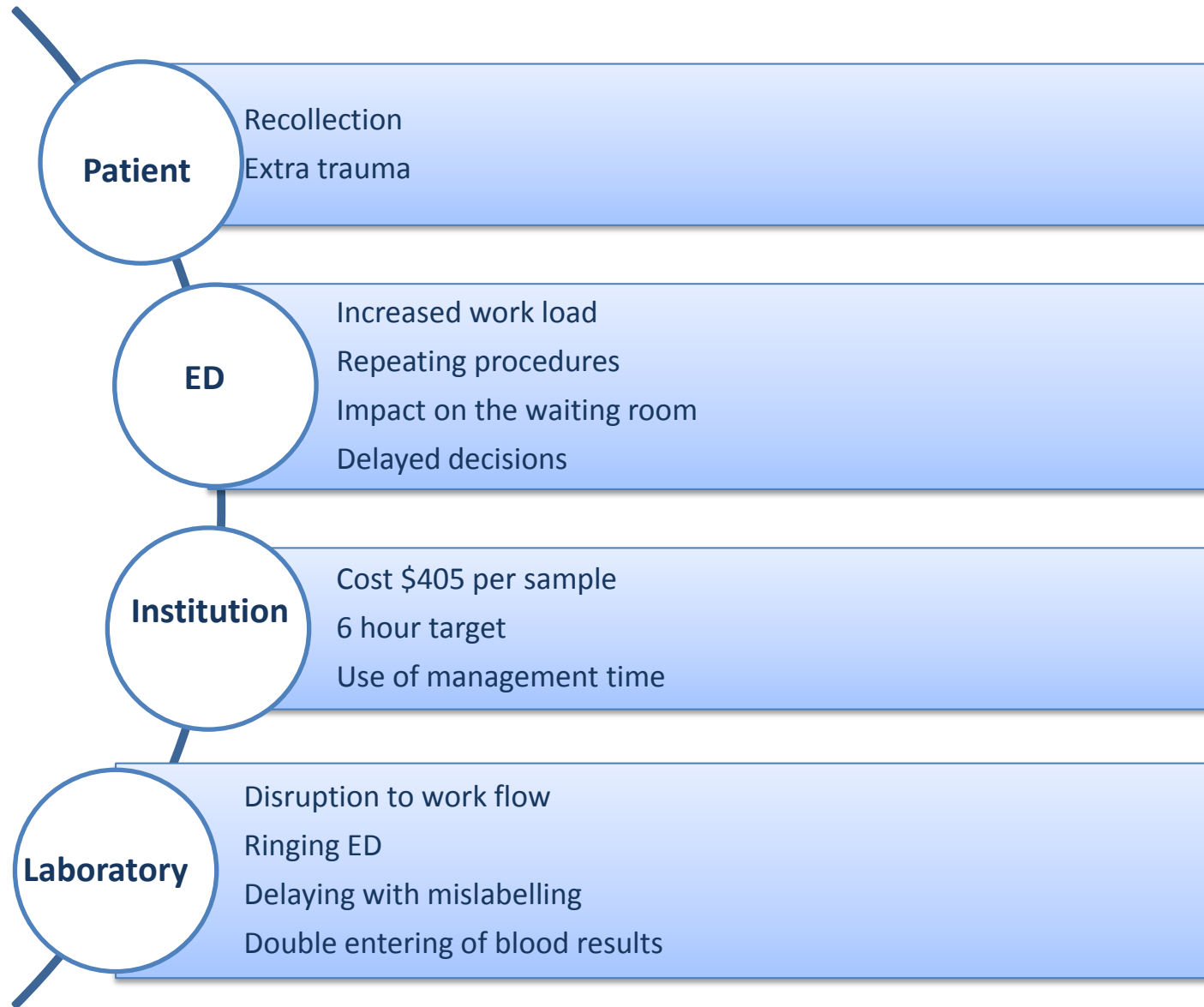
- Human error



Why does haemolysis occur ?



Impact of haemolysis and mislabelling



Best practice recommendations

Clinical practice was reviewed with the Best practice guidelines Clinical Laboratory Standards Institute, 2007

- Technique
- Cleansing of the site
- Tourniquet
- Order of draw
- Inversion of the tubes
- Syringe draw
- Identity of the patient
- Labelling of samples



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Observational study

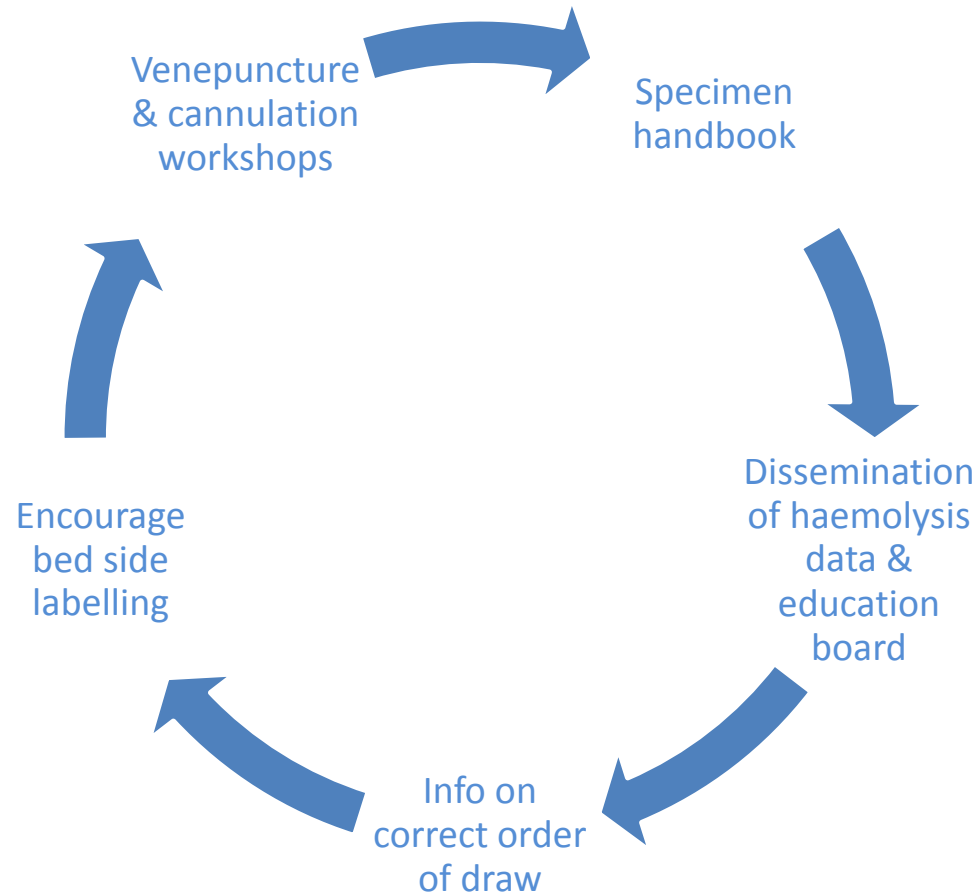
- Phlebotomy process, from identity of the patient to specimen transportation
- 5 days 72 collections
- Data capturing: BD audit tool using a standardised checklist
- Included all aspects of the phlebotomy process, devices and infection control issues
- Excluded: Paediatrics & transportation to the laboratory process

Findings of the study

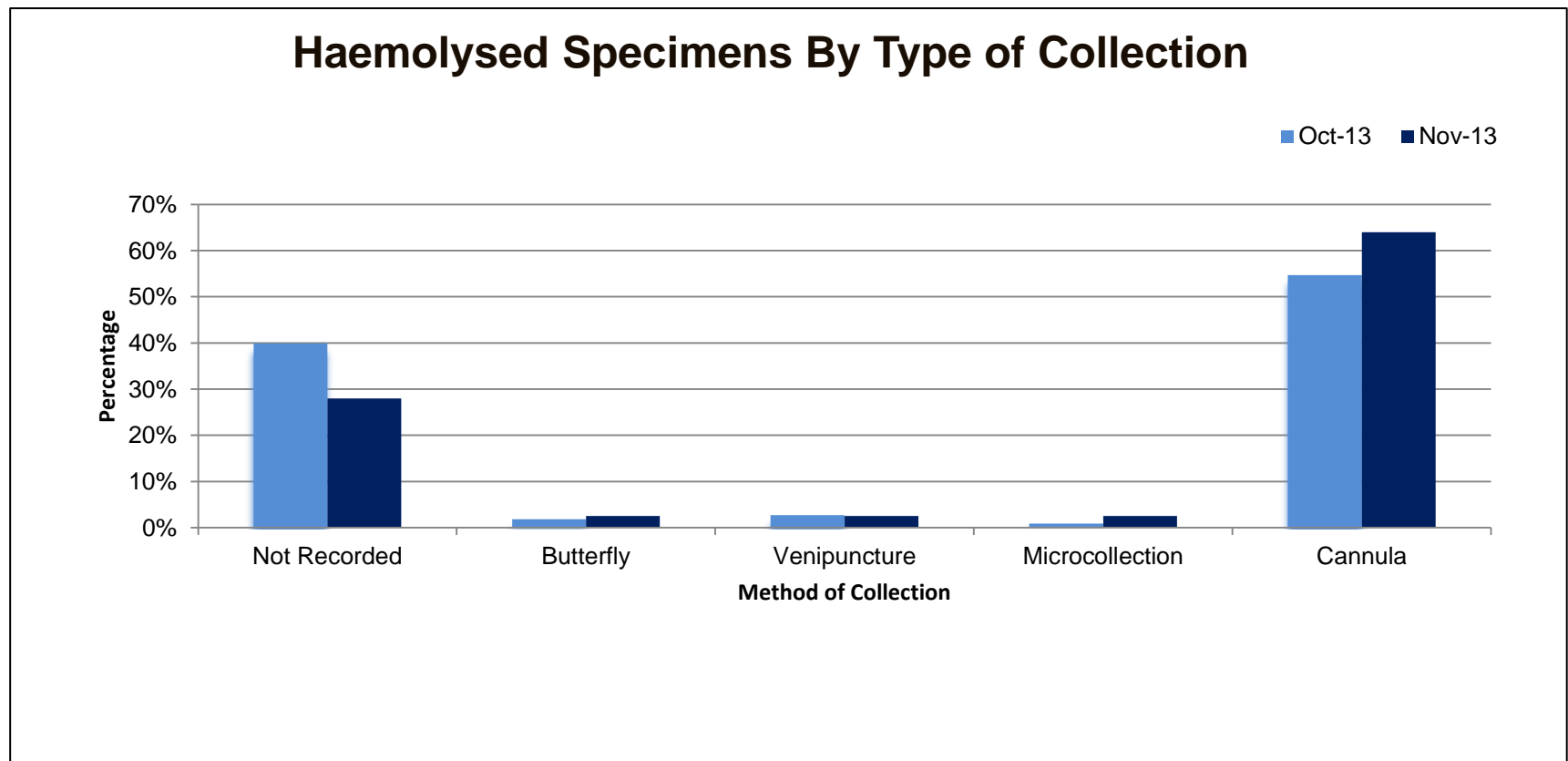
- Identity of the patient
- Peripheral cannula versus venepuncture
- Swabbing of the collection site
- Touching of the site
- Tourniquet time & distance
- Order of the draw
- Inverting of the blood tubes
- Bedside



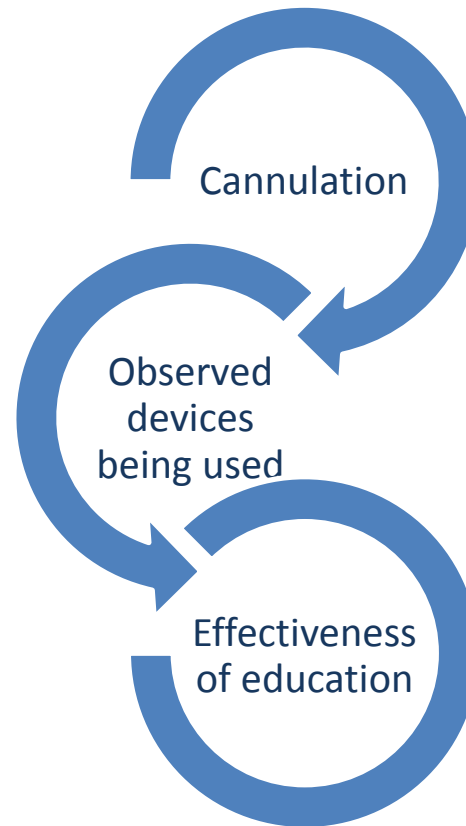
Mechanisms to improve practice



The Method Of Collection Appeared To Have A Larger Impact on Quality



Root cause analysis of current cannulation



Findings of IV cannula audit: still potential for improvement

- Prolonged tourniquet times
- Inadequate drying time of antimicrobial
- Gauge of cannula
- Manual blood flow control
- Blood drawn through existing catheter
- Use of a syringe on cannula
- A sample of blood was not drawn and discarded prior to collection
- Tube inversion
- Tube fill





Staff survey

Did staff change their practice
according to best practice
recommendations?



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Further improvements



Proposal to Project Evaluation Group Team (PEG)

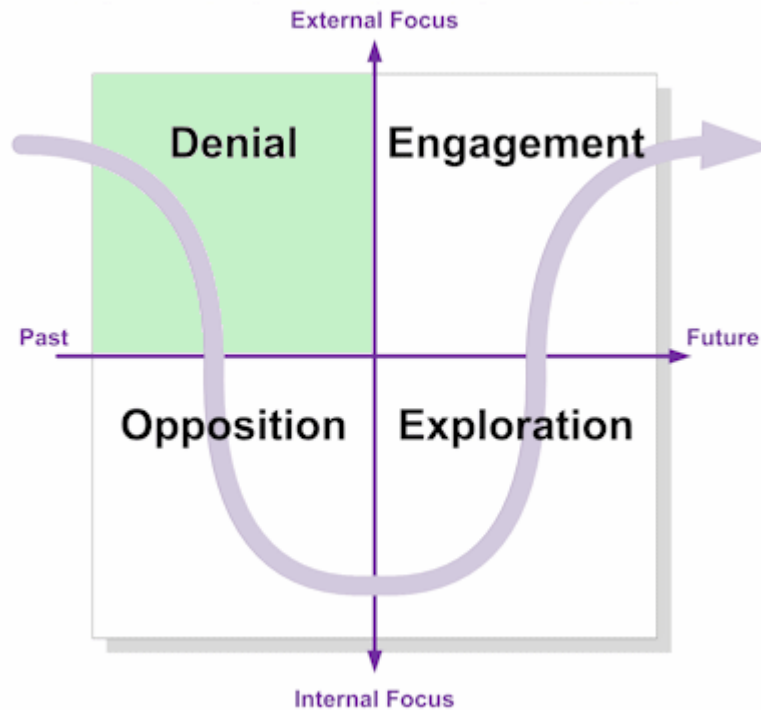
Rapid serum tube trial

Trial of cannula BD Insyte Autoguard with blood control cannula



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Staff learning through change



Personal growth and change

- Achievements
- Collaboration
- Persistence and determination
- Ongoing process

Lessons learned



- Haemolysed blood samples are most likely to occur when drawn at time of cannula insertion.
- We managed to reduce the gross haemolysis rates > 1%
- We managed to decrease moderate haemolysis rates from 20% to 12%
- The rapid serum tube has the potential to increase laboratory turn around time by 22 minutes
- Incorrect specimen labelling is largely due to human error and not following protocol, however identification and specimen labelling at the bedside prevents errors from occurring
- Labelling errors have decreased to an average of less than 10 a month
- Education about haemolysis needs to include all aspects of the how what and why
- The change process requires commitment and continuation as culture and process do not change overnight

Where to from here

- Decision for trial of IV catheter trial from PEG team
- Is the criteria for cannulation and level of cannulations being performed? Design criteria
- Stronger requirement to venepuncture for collection of laboratory samples



Acknowledgements

The project team

Peter Ford Clinical sales Specialist BD

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