Blood Sampling Practices in Critical Care: How Critical Are They?

Janie Venis RN MSN; Mia Marles RN BSN; Martina O'Regan RN BSN; Martha Mackay RN PhD

Providence Health Care – St. Paul's and Mount Saint Joseph Hospitals

Background

- 60% of errors occur during time between blood test ordered and time specimen is analyzed in the lab (pre-pre analytical stage)
- Most common reason for blood sampling (BS) error in critical care in our hospitals are specimen identification and mislabeling
- BS errors can lead to:
  - unnecessary draws
  - inappropriate treatment & diagnosis
  - increased risk of patient injury
  - increased costs

Purpose

To identify the current BS practices, environmental factors, as well as knowledge and attitudes that may contribute to BS errors by bedside practitioners in critical care units at St. Paul's and Mount Saint Joseph Hospitals.

Research Question: What are the current practices and attitudes of bedside practitioners related to blood sampling in the critical care units of St. Paul's and Mount Saint Joseph Hospitals?

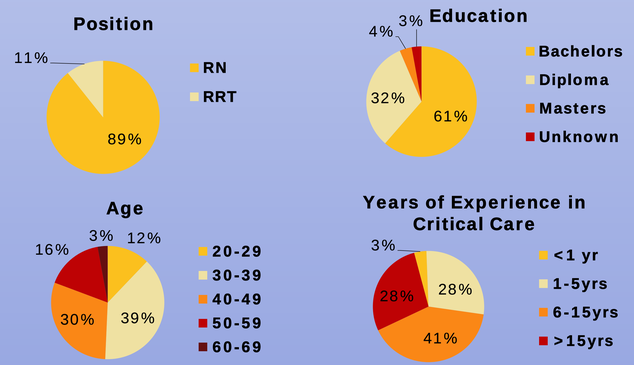
Research Methods

- Pen-and-paper survey
  - 9 items assessing demographics
  - 8 items assessing practice
  - 1 item assessing environment
  - 7 items assessing attitudes
- Closed-ended, multiple-choice and Likert-type questions
- Includes all critical care units: SPH ICU (16 beds); MSJ ICU (4 beds) CSICU (10 beds); CICU (11 beds); PACU (12 beds); HAU (4 beds)

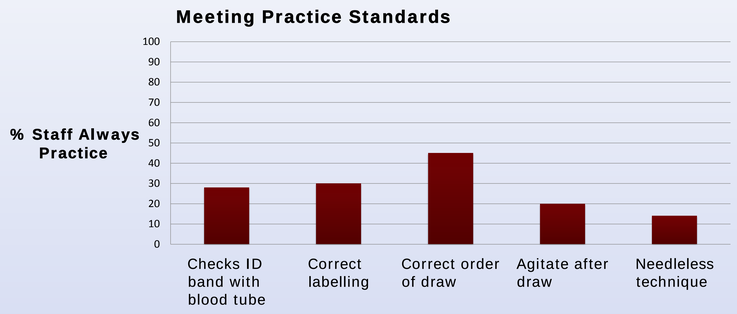
Findings

- Responses: 140/328 (43%)

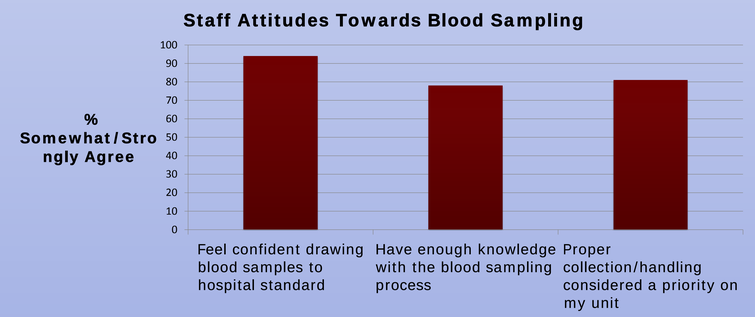
Demographics



Practices

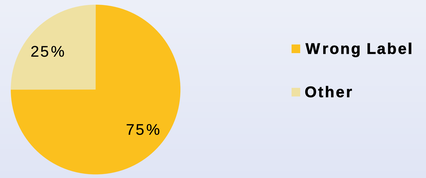


Attitudes



Top 5 Factors Identified by Respondents Believed to Contribute to Blood Sampling Errors
Being hurried (specific to identification errors) - 87.1%
Lack of awareness of current policies and procedures - 63.6%
Fatigue - 57.9%
Forget to do identification and label checks - 53.6%
Lack of formal training on current procedures - 53.6%

Types of Blood Sampling Incidents (identified by respondents)



- Of the 17% of respondents who report completing a BS incident report, 75% were labeling errors
- Consistent with published research, incorrect labeling is a common error in the pre-pre analytical stage

Discussion

- Discordance between reported poor blood sampling practice and high levels of confidence and may be due in part to:
  - Respondents thinking BS is routine (46.4%)
  - Historically, BS errors have not been viewed as being as serious as other clinical errors; culture of complacency around BS errors may be entrenched and staff may not recognize the consequences of poor BS practice
  - With recent emphasis on patient safety (e.g. 2 patient identifiers), respondents are aware of policies/procedures but practices/culture on units have yet to catch up
- Critical care environment of 1:1/1:2 nurse patient ratio may foster false security that patient identification checks are not needed with each blood sample
- Labeling errors may be the result of complacency, over-confidence, feeling hurried, and placing less importance on actively using 2 patient identifiers and matching blood tube labels to patient ID bands
- Policies and procedures may not be clear and therefore staff may lack system support

Conclusions

- A multi-pronged approach to quality improvement, which would include an educational component, may help promote safer care, reduce errors and improve BS practices in critical care units

Acknowledgements

- Aggie Black and Providence Health Care's "Practice-Based Research Challenge" for giving us the opportunity to use our clinical expertise and to engage in the research process
- Karen Bölenius et al for allowing us to adapt their questionnaire: Bölenius et al. BMC Research Notes 2012, 5:39
- Janice Leonard, SPH ICU Operations Leader, for her consistent encouragement and support