

Diagnosing Specimen Collection Issues

Identifying specimen collection issues and
learning how to prevent them

Ken Curtis, BS, PBT (ASCP)

Specimen Collection: Facts

- Phlebotomy is the most commonly performed invasive medical procedure.
- Over one billion venipunctures are performed in the U.S. annually.
- Accurate venipuncture is the first step in accurate laboratory testing

Specimen Collection: Is it Easy?

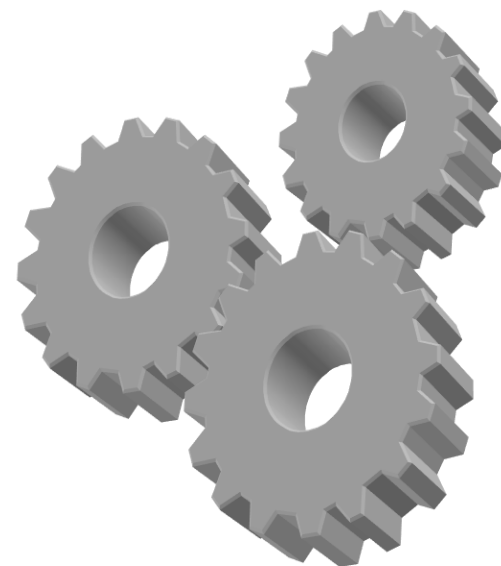
Not all venipunctures go as planned!



Common Specimen Collection Issues

Mechanical Errors

- Leaving tourniquet on too long
- Using inappropriate needle gauge
- Incorrect order of draw
- Non sterile techniques
- Inappropriate transfer from syringe



Common Specimen Collection Issues

- Procedural Errors
 - Early or late collection of a timed draw
 - Failure to protect from light or place on ice
 - Inappropriate specimen type collected
 - Short Draws
 - Inappropriate fill ratio
 - Insufficient volume for testing



Common Specimen Collection Issues

- Labeling Errors
 - Missing Date and Time
 - Missing phlebotomist initials
 - Incomplete Label
 - Missing part of name, DOB, MRN
 - Illegible



The Cardinal Sin

Drawing the wrong patient!



Quality: Why is it important?

- For the patient!
- Specimen Collection leads to accurate results
 - Garbage In = Garbage Out
- Lab credibility
 - Six Sigma = Less than 3.4 defects per million produced or 99.9997 %
 - So if you have 10000 venipunctures a month
 - One mistake every 16 months!

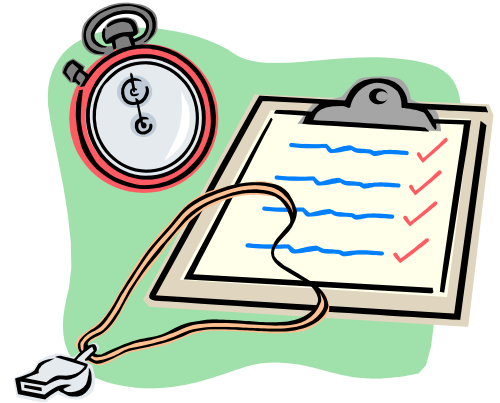
The Three **T**'s of Improving Collections

- **Track Them**
- **Tell Them**
- **Train Them**



Track Issues by Type

- Categorize issues
- Document when they occur
- Document who caused the issue



Sample Exception Report

Tell them about it

- Tell the people who made the mistakes
- Report All Errors (Even when the outcome isn't affected)
 - To phlebotomists
 - To Nursing Staff
 - To Clients



Train them to be accurate

- Give your new employees time to train
- Do continuing education and training based on issues you identify
- Provide training to nursing staff- Observe
- Present case studies of collection issues
- Give them observation with a trainer/mentor
- Use annual competency to be effective

Other Solutions That Work

- Use lean processes with phlebotomy
 - Tray, Collection, Labeling, Transport
- Order of Draw card with inverting instructions
- Fill line card for nursing units
- Training Resource Webpage for hospital staff or clients
- Syringe transfer device (safety and hemolysis prevention)

Case Study

NeuroCritical care unit had a trend of hemolyzed specimens

- Looked at collection ID
- Looked at collection date and time
- Scheduled observation in the unit during various shifts

Findings:

- Inappropriate transfer technique was observed by many of the staff at all hours
- Specimens observed were investigated in the lab
 - 1 of 38 tubes was rejected as hemolyzed
 - 8 of 38 showed visible signs of hemolysis
- Staff was questioned about the transfer technique
 - All 'training' was done by the same nurse

Corrective Action:

- Nurse manager scheduled a training inservice
- Findings were presented
 - Staff was shocked that the collection technique impacted testing!
- New supply was purchased to assist in specimen transfer
- Specimens rejected for hemolysis went from almost 10 a month to ZERO!



References

- Lusky, K, CAP today. Dec. 2003, *“Rooting out invisible blood collection errors”*
- Pandey P, et. Al., Transfusion Med. Oct 2007, *“”Predicatable and avoidable human errors in phlebotomy area”*