

Blood Culture Contamination Rates

Timeframe: March 2019 to Present

TEAM MEMBERS

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Collection of a blood cultures is one of the most important and critical procedures performed in the microbiology laboratory. Blood is normally sterile and bacterial invasion may indicate septicemia. The isolation and identification of an organism has great diagnostic significance. Blood cultures are of great importance in diagnosing such conditions as endocarditis, typhoid fever, pneumonia and other diseases characterized by septicemia.

Collection of blood cultures are the responsibilities of both nursing and laboratory staff. Improper collection can lead to bacterial contamination from skin flora and treatment of patients for septicemia when they are not truly septic; which can lead to other health problems.

PROBLEM: CONTAMINATION RATES INCREASING

- Increased contamination rates noted by microbiology staff from laboratory and non-laboratory staff (March 2019 rates at 4% when should be 0%)
- Root causes identified
 - New hires not receiving proper blood culture collection training
 - Collection procedure outdated

SOLUTION

- Microbiology Supervisor and Laboratory Director update blood culture collection procedure by April 2019
- Provide demonstrations and competencies for all laboratory staff on new collection procedure
- Educate non-laboratory staff on new collection procedure utilizing a "Just In Time" method during regular operations

TASKS PERFORMED

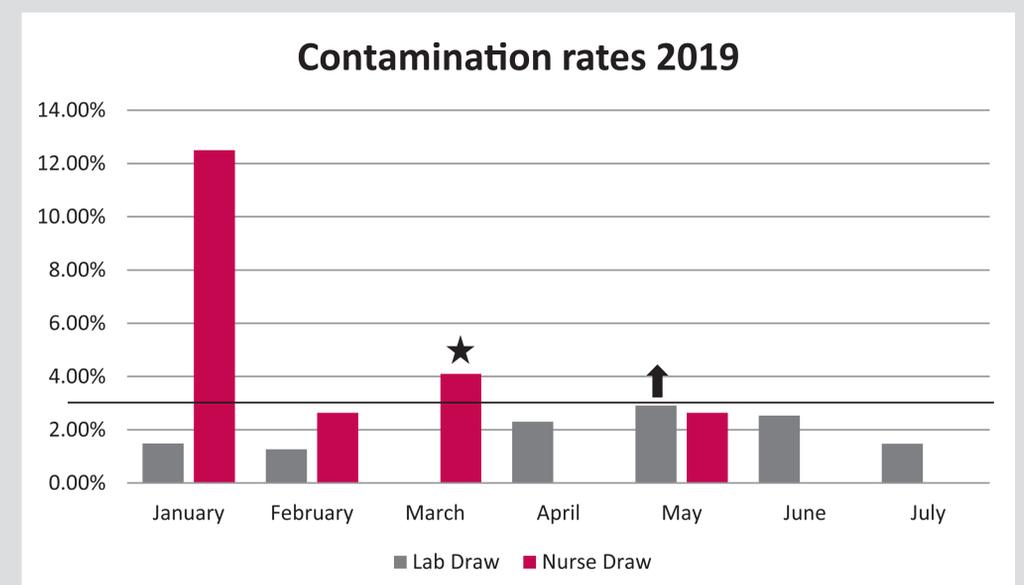
- Researched proper blood culture collection procedures from other medical facilities
- Held meeting for demonstrations and competencies for all lab staff March 2019
- Utilized the "Just In Time" method to educate non-laboratory staff during regular operations

GOAL

- Contamination rate for lab and nurse draws under 3% by June 2019

RESULTS

- Contamination rate goal of less than 3% was obtained by June 2019 and has been sustained.
- New procedure developed and implemented in March 2019 (shown with ★ on chart)
- A decrease to 0% contamination rate noted by nurse draws since the new procedure implementation date
- A trending up in May 2019 as a result of new hires, laboratory director noted (indicated with a ↑ on chart) and new hires received refresher training and completed competencies and shows a trend back down



CONCLUSION

- Collection of a blood cultures is one of the most important and critical procedures performed in the microbiology laboratory. A notice of increasing rates led to the production of a new collection procedure with a goal of less than 3% of draws contaminating blood culture specimens. (3% line shown on chart)
- Lessons learned and the next steps to consider:
 - New hires need to receive proper training and may be required to participate in follow-up training
 - If rates begin to trend above the 3% goal, lab staff and non-lab staff will be required to review collection procedure and complete another competency