QUALITY IMPROVEMENT
PROJECT CHARTER

PROBLEM AND BACKGROUND

What is the core quality issue that you are trying to improve, and what are the factors involved?

This project aims to improve the reliability of blood cultures drawn in the ED by eliminating instances where a single set of blood cultures is sent to the lab for analysis.

Blood cultures are commonly drawn in the ED, and the utility of the result to patient-centered outcomes depends on three main steps: (1) proper sample collection (i.e. two blood sample 'sets' drawn from two separate venipuncture sites), (2) predictable timing of laboratory analysis and reporting of results, and (3) proper clinician interpretation of the result and subsequent management.

An internal audit of cultures suggested that at least 25% of cultures are drawn improperly in the UHN ED (e.g. only one set sent, two sets sent in rapid succession from the same venipuncture site), which renders them impossible to interpret and often requires repeat sampling, causing significant waste. One major process-related barrier to proper blood sample collection is the label-printing function in EPR, which by default prints only one set of labels, rather than two.

RATIONALE AND BENEFITS

Why is this an important problem to tackle, and what are the expected benefits?

Sending a single blood culture for analysis is problematic for several reasons. A solitary blood culture is difficult to interpret, especially in situations where the organism isolated is also a common skin contaminant. When this occurs, repeat cultures are drawn to either confirm or refute the first result, leading to wasted resources (the first set of cultures, giving empiric antibiotics) and time (for the patient and clinicians).

On the other hand, in certain patient groups with high risk for bacteremia, common skin contaminants may represent a true infection. In this case, not having the second set delays a definitive diagnosis, putting patient safety at risk while the repeat cultures are being incubated to confirm the first result.

The results of this project may indicate further opportunities for improvement in other common clinical processes and procedures to reduce waste and mitigate risk, while improving ED patient outcomes.

AIM STATEMENT AND DELIVERABLES

What are the goal and objectives of this project?

Proper blood sample collection has been the target of multiple nursing educational initiatives. Throughout the month of March 2015 we held multiple huddles and nursing education sessions at both ED sites to improve blood culture collection. On January 21, 2016 we implemented a new force-function in EPR that automatically prints out labels for two sets of blood cultures, eliminating the need to have each set ordered individually. We will monitor the rates of improper sampling technique pre and post implementation to observe its impact.

There has not been any information on the rates of growth of common contaminant species in blood cultures in this specific patient population. We will collect data on this and compare it to rates described in the literature and decide where we stand and what interventions may be needed.

SCOPE

What are the things (people, tasks, processes) that this project WILL and WILL NOT touch on?

This project will examine blood culture collection processes in the ED. Our patient population will be only those with blood cultures drawn in the ED, who are subsequently discharged from the ED, and will not include patients who are admitted to hospital from the ED.

MEASURES

What are the outcome, process and balancing measures that you are planning on looking at?

With the help of UHN Decision Support, we will collect data on blood cultures sent to the lab for each patient presenting to the ED and ultimately discharged home from December 2014 to March 2016. We have chosen this timeline to evaluate interventions that have been implemented to decrease the rates of single sets.

Our primary outcome will be the rate of single sets being sent to the lab for analysis. A single set will be defined as only one aerobic and anaerobic bottle sent for the patient encounter in a 4-hour window. This window was used to account for instances where a single set of cultures were sent initially, and a second set was added on at a later time after physician assessment.

Through these outcomes, we will also be observing the impact of various interventions in improving these outcomes, as described in the aims and deliverables section.

CHANGE IDEAS

What are you going to be attempting or changing, if already known?

Ultimately, we strive to reach a 0% single-set rate for both EDs at UHN. There is no circumstance in which a single set should be sent for a patient in which bacteremia is considered.

PROJECT LEADER, TEAM MEMBERS AND RESPONSIBILITIES

Who is the point person accountable for the project's progression, who are the other members, who will do what?

Sahand Ensafi – group progression, idea development, physician education, nursing education
Joseph Choi – group progression, idea development, intervention evaluation, statistical analysis
Oliver Van Praet – group progression, idea development, physician education
Sherri Broome – idea development, nursing education
Paula Cleiman – group participation
Jojo Leung – group participation
Leah Watson – group participation

RESOURCES

What resources will you require – human, financial, equipment, authorizations and permissions, etc.?

UHN Decision Support will facilitate collection of preliminary data to analyze the outcomes as described above. Authorization to access patient-level data is required.

TIMELINES AND MILESTONES

When do you anticipate STARTING to work on this project, IMPLEMENTING this project, and COMPLETING it?

The project is well underway. The EPR force function came live on January 21, 2016, and we are currently evaluating its impact with the data available. We will continue to monitor its ongoing impact on a regular basis up to 6-months post-implementation. Through this, we will then evaluate the need for additional interventions.