The Emergency Department (ED) is continually striving to improve our workflow methods and provide the highest level of care possible; this is done through the staff's multidisciplinary collaboration. One of our department's ongoing projects is the improvement in compliance of our code sepsis protocols and adherence to all requirements for patients presenting with sepsis. Sepsis in the ED is a frequent diagnosis seen in the ED due to a large number of surrounding nursing homes that send patients to our facility.

Our protocol calls for the placement of two large-bore intravascular access points. In the event of a problematic IV access, nurses can reach out to their team members in the ED as nurses are split into team A and team B based on the day's assignments. If access is still impossible, our department can call on the vascular access team made up of highly skilled nurses trained in ultrasound guided IV catheter placement. This system improves patient care and increases collaborative efforts between nurses in the ER and the hospital as a whole.

Furthermore, anaerobic and aerobic blood culture sets must be drawn from the patient from two different sites. In 2019, our department noticed that these cultures were not always being filled with an adequate sample, and an initiative began. Our hospital volunteers began marking off all culture bottles to the appropriate fill line so that nurses could more easily visually identify that they were meeting required fill volume for improved accuracy of sensitivity and specificity. In 2020 we have seen an improvement in blood culture fill volumes.

Additionally, by protocol a serum lactate level must be drawn and placed on ice. This initial lactate must be drawn within 3 hours of sepsis recognition and a second sample repeated within a half-hour of fluids intravenous completion. Electronic repeat lactic acid orders automatically generate an hour after the first, as a result of collaboration with our laboratory. Previously the department noted delays in repeat lactic draws; therefore, this safety measure was put in place to avoid further delays. Our departments compliance rate with initial serum lactate collection within 3 hours of diagnosing sepsis never fell below 86 percent in 2019 with an average compliance rate of 96 percent for the entire year, improving in 2020 with a low of 94 percent compliance and a recorded average of 97.5 percent. Additionally, our repeat lactic acid draws met a compliance rate of 90.5 percent in 2019 and improved by 2.3 percent in 2020 at an average recorded compliance of 92.8 percent.

Sepsis fluids are to be hung 30ml/kg per patient and must be initiated within a half-hour of identifying sepsis. Providers work directly with nurses to declare "code sepsis" and inform the nurse as soon as a diagnosis has occurred. In addition to fluids, antibiotics must be given within the first hour of sepsis recognition. In 2019 our department had an 87 percent compliance rate of blood culture collection prior to antibiotic administration. In 2020 our pyxis electronic medication dispenser machine started asking all nurses if blood cultures were drawn before allowing any antibiotic to be dispensed. 2020 showed a recorded averaged compliance rate of 97 percent for blood culture collection prior to administration of antibiotics, a ten percent improvement from 2019. This verification question enables the nurses to double-check with the provider and provide the elements of sepsis care while improving our metrics.

Providers who suspect a patient of meeting sepsis criteria will ask the primary nurse to obtain a rectal temperature to safeguard early detection of code sepsis. The ED technicians work hand in hand with the nurses to ensure all vital signs are completed promptly. Additionally, septic patients must have two sets

of vital signs within an hour after sepsis fluids are completed. This work requires the collaboration of techs and nurses together.

Our department is continuously learning together as emergency medicine is continually evolving. In 2020 we started a department wide case study review on sepsis patients in an effort to acknowledge our successes and identify system weaknesses. Our assistant manager chooses a different case for review every month and discussions are held in person and on our secure company emails so that everyone can be involved regardless of work schedule. The department selects a different educational topic every month; September is sepsis awareness month. Every September, a staff nurse works hand in hand with our nurse educator to create a set of competencies and educational activities to share with the rest of the department. Each month in our ER, a different subject is discussed by whichever staff nurse choosing to champion the topic. Nurse champions then take time to update their own skills and understanding on their topic before joining the nurse educator's efforts to create a curriculum for the month.

The educator works with the ED champion nurse to make poster boards and use different educational tools to create competency stations for nurses and technicians. This year we will be celebrating sepsis awareness month twice, first in January and then again in September. January, we have planned a mock code sepsis, which is being organized by our emergency room educator, education committee made up of ED staff nurses, and our hospital education center. The mock code will utilize various equipment that might be required during code sepsis, such as the rapid infuser, IV fluid warmer, the bear hugger, and our Lucas device, which provides automated chest compressions.

Our department continues to add new requirements to improve our metrics each month. Our staff consistently meet and consult on our code sepsis protocol to ensure each nurse's voice is heard and allow for input from all staff. The collaboration involved in ensuring our department runs like a well-oiled machine and provides not only the gold standard but the highest quality of that standard to every patient that comes through our doors.