Creating a Sepsis Prevention Program:
An inside look at UMC of Southern Nevada’s implementation

University Medical Center of Southern Nevada (UMC) in Las Vegas recently worked with Bluetree to implement Epic’s sepsis predictive model to improve the accuracy of their risk stratification as well as increase their bundle compliance. As part of this project they developed unique workflows and corresponding build to align with their design of a nurse driven process.

The program has greatly decreased the number of false positive alerts which has resulted in increased responsiveness. It has also resulted in the development of reporting tools that provided much needed insight into the compliance rates regarding key clinical interventions.

Bluetree Clinical Solutions Specialist John Price Hamlet recently sat down with Zoe Alterman, Performance Improvement Nurse, and Stephen Ingerson, Clinical Nurse Specialist, to discuss the development of their program.

(Q) John Price: Creating a workflow around the predictive model is vital to the success of the program. How did you go about creating a process that worked for you?

Zoe: Both of us are very data-driven, and we did a lot of research on the topic. We found that hospitals using rapid response teams were the most effective. Using these teams helps ensure the people who are part of the decision-making process are well informed and really understand what they’re looking for.

Stephen: We also wanted to empower our nurses through the use of protocols to drive the process forward. Putting the responsibility in their hands really promotes critical thinking and can get the ball rolling much faster, which is the name of the game with sepsis.

To do this, we had to change how some of the tools in Epic worked, but we felt it was worth it to have the system match the workflows we had designed.

Sepsis is the most expensive condition treated in U.S. hospitals, costing nearly $24B annually.
(Q) John Price: Obtaining buy-in and getting your users to follow the expected workflows can be difficult. What’s your advice for making this work?

Zoe: Have as many face-to-face conversations as possible. Making people feel included in the process is always important. We invited different reps from across the hospital to our sepsis-specific meetings, and we tried to get on the agenda for as many departmental meetings as possible. Spreading the word through conversation is much more effective than through email.

It’s also important to get organizational commitment at a high level. Having a sponsor that can drive change is key.

Stephen: We would also suggest that you focus on getting buy-in related to the process and not just the functionality. Making sure that everyone is comfortable with the workflows goes a long way toward a successful implementation.

(Q) John Price: Getting the right folks in the room can make all the difference. Now that you’ve been through the process, what would your perfect implementation team look like?

Stephen: It’s really dependent on the type of organization and environment. Having a true physician lead, preferably a good hospitalist representative, would be helpful. However, not all organizations have that privilege, and that’s kind of where we found ourselves. This was okay because our workflow is very nurse driven.

I would say having good representation from nursing and lab is important for getting the right content in place and developing the right workflows. If possible, having a Sepsis Coordinator/Performance Improvement Nurse/Data Specialist is a huge bonus. It really helps to have someone in that role to help drive the process from an analytics perspective. It can be tough to get buy-in but having the numbers to back up your work makes it a lot easier. It’s also nice to have a dedicated resource to evaluate performance and help recommend changes to the process.

Finally, having a project manager is key. There are so many different people involved in this process and there are so many moving pieces that it’s tough to keep track of it all. We would definitely recommend having someone to bring it all together and keep everyone moving in the right direction.

The average cost to treat hospital-acquired sepsis rose from $58,000 to $70,000 from 2015 to 2018, adding $1.5B in aggregate spending for hospitals.

Key Concepts

Enhanced Screening
- Leverage predictive analytics to drive early identification through a combination of manual and automated assessments

Improved Decision Support
- Customize decision support tools to promote early intervention
- Create streamlined processes in Epic to efficiently interpret data and inform treatment

Streamlined Treatment
- Create tools to allow users to quickly execute standardized treatment strategies
- Develop workflows to promote collaboration between user

Updated Performance Analysis
- Create tools to allow for real-time performance evaluation as well as historical review
- Continuously monitor efficacy and adjust strategies accordingly
John Price: How are you tracking the success of your program? What performance indicators mean the most to your success?

Zoe: Right now, we’re just in the infancy stages regarding analytics. For sepsis-specific measures, we’re looking at average length of stay, mortality, and some of the more big-picture metrics. We’ve yet to do a deep dive into some of the specifics like “time to first dose of antibiotics”. One reason for this is that we’re still in the process of validating that the appropriate workflows are being applied in each area of the hospital.

Stephen: In addition to the typical clinical metrics, we suggest focusing on metrics that help you determine the effectiveness of the process you’ve put in place. Tracking things like BPA interaction rates and flowsheet row usage will give you a good idea of whether the tools you put in place are having the intended effect and how your users are reacting. Honestly, these are easily as important as the clinical metrics when judging success.

Zoe: We also recommend keeping track of individual wins that you identify along the way. Sometimes it can be hard to determine return on investment for a program like this. However, when you can point to specific instances where your program directly impacted the care of a patient and potentially saved their life, it really helps show the value of your work.

John Price: Do you have any lessons learned that you’d like to share with other organizations that are implementing these tools?

Stephen: There are a few things we’d do differently if we could do it over again. For one, we’d start the discussions around workflow changes much earlier. We waited until we had completed our initial analysis of the scoring system and the corresponding thresholds to begin talking about operational changes. It would have saved us a lot of time if we had begun our workflow discussions as soon as we decided to use the predictive model.

We also found that it was necessary to educate our users about sepsis in general in addition to training them on the new functionality. Helping them understand why certain aspects of the workflow were key to preventing sepsis improved their ability to think critically and gave them more confidence when making decisions.

Zoe: Finally, we would really recommend incorporating a Sepsis Coordinator into the identification and response workflow. Providing them with real-time monitoring tools and building out a clear process of communication with nursing staff greatly increased the effectiveness of the scoring system. At the very least it will help with the responsiveness to the scoring system until your users become more comfortable with the new workflows.
Interested in learning more about how you can use Epic’s sepsis predictive model to more quickly and accurately identify at-risk patients? We’d love to hear from you. Read more about our clinical solutions team, reach out through our contact form, or contact your Client Service representative.