



MHA Green Belt Lean Six Sigma Project Summary

INITIATIVE TITLE: *Antibiotic Administration to Severely Septic Patients*

ORGANIZATION NAME: Christian NorthEast Hospital

PARTICIPANT / CONTACT INFORMATION

Team Leader Name	Title	Preferred contact-type email address/phone#
Brianna Hanks	Senior Performance Improvement Consultant	Brianna.Hanks@bjc.org

DEFINE – Problem Statement & Goal

Patients presenting to the hospital with two SIRS criteria and organ dysfunction who should be receiving antibiotics for Sepsis are not currently receiving antibiotics in a timely manner. This is happening most often in our Emergency Department. Currently the Emergency Department is only getting 66% of these patients the antibiotics that they need to decrease their risk of mortality. By administering antibiotics in a timely manner, the patient's mortality is reduced by 33%.

The goal is to increase the administration of antibiotics to severely septic patients within 180 minutes 6-fold.

DEFINE - Initiative Scope

Patients arriving at Christian Northeast Hospital ED that meet the Severe Sepsis criteria and set off a Time Zero Timer.

DEFINE –BIG Y

All patients that met severe sepsis criteria in the ED and received antibiotics within 180 minutes/ All patients with a continued time zero timer in the ED or had severe sepsis present on admission

As a discrete process a defect is defined as any patient who had a continued time zero timer that did not receive antibiotics within 180minutes. An opportunity is defined as each patient who had a continued time zero timer or had severe sepsis present on admission.

MEASURE - Data Collection / MSA

The data that was collected for the measure phase was done so by an automated Power BI report. An attribute agreement was performed with a sample size of 10.

Over half of the samples failed compared to the standard. This helped confirm suspicions that this is an issue within the ED. While completing the measure phase it also showed how having a discrete Y may be analyzed as continuous.

ANALYZE - Critical Xs / Root Causes Identified

- Time severe sepsis criteria is met to the Time the physician addresses the severe sepsis timer
- Time the physician addresses the severe sepsis timer to the Time the antibiotic is ordered
- Time the antibiotic is ordered to the Time the antibiotic is administered

IMPROVE - What was Implemented

After looking at the data and learning the most significant Xs we decided to create a SOP. We developed a process of getting antibiotics ordered and administered to a severely septic patient in a timely manner. Like stroke and STEMI, sepsis is considered a time critical diagnosis. We used this premise to put time goals on each step of the process.

Based on some of the feedback collected from our LSS working group we thought the delay in antibiotic administration in 180 minutes was more of a nursing issue. After doing our statistical analysis we learned that it was more a delay on the providers who were responsible for the antibiotic order delays causing the administration delay.

IMPROVE – What was Implemented



IMPROVE – Baseline and Timeline

DMAIC PHASE	AVG (mins)	STD DEV (mins)	DPMO	SIGMA SCORE
Baseline	178.12	609.77	242,000	2.2
Goal	---	---	145,200	2.6
GOAL = 60% IMPROVEMENT (6 FOLD INCREASE)				

Timeline:

SOP formatted by 9/16

Feedback from subgroup by 9/23

Education and implementation of process by 10/31

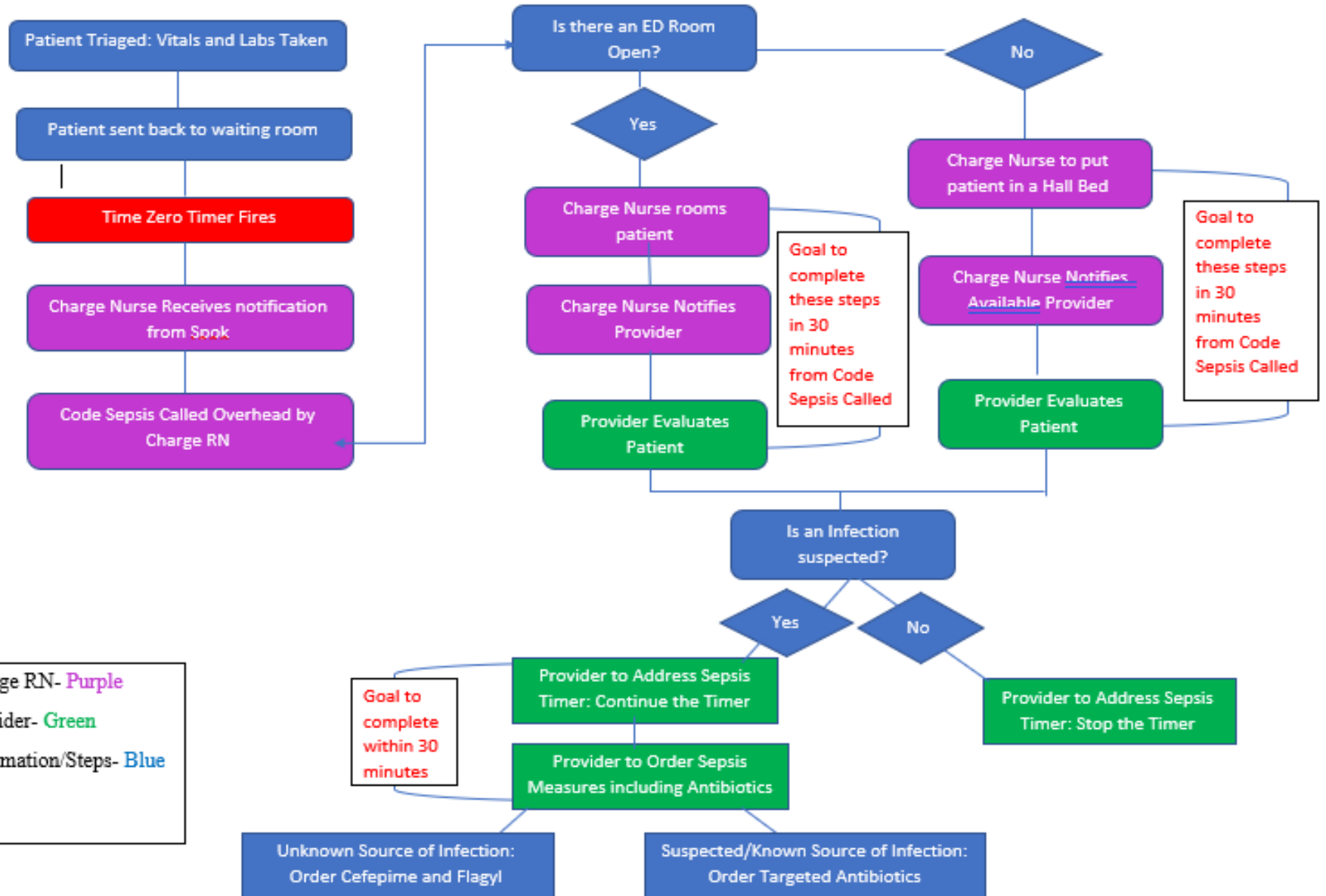
Data to be monitored monthly for 3 months followed by statistical analysis for improvement

SOP

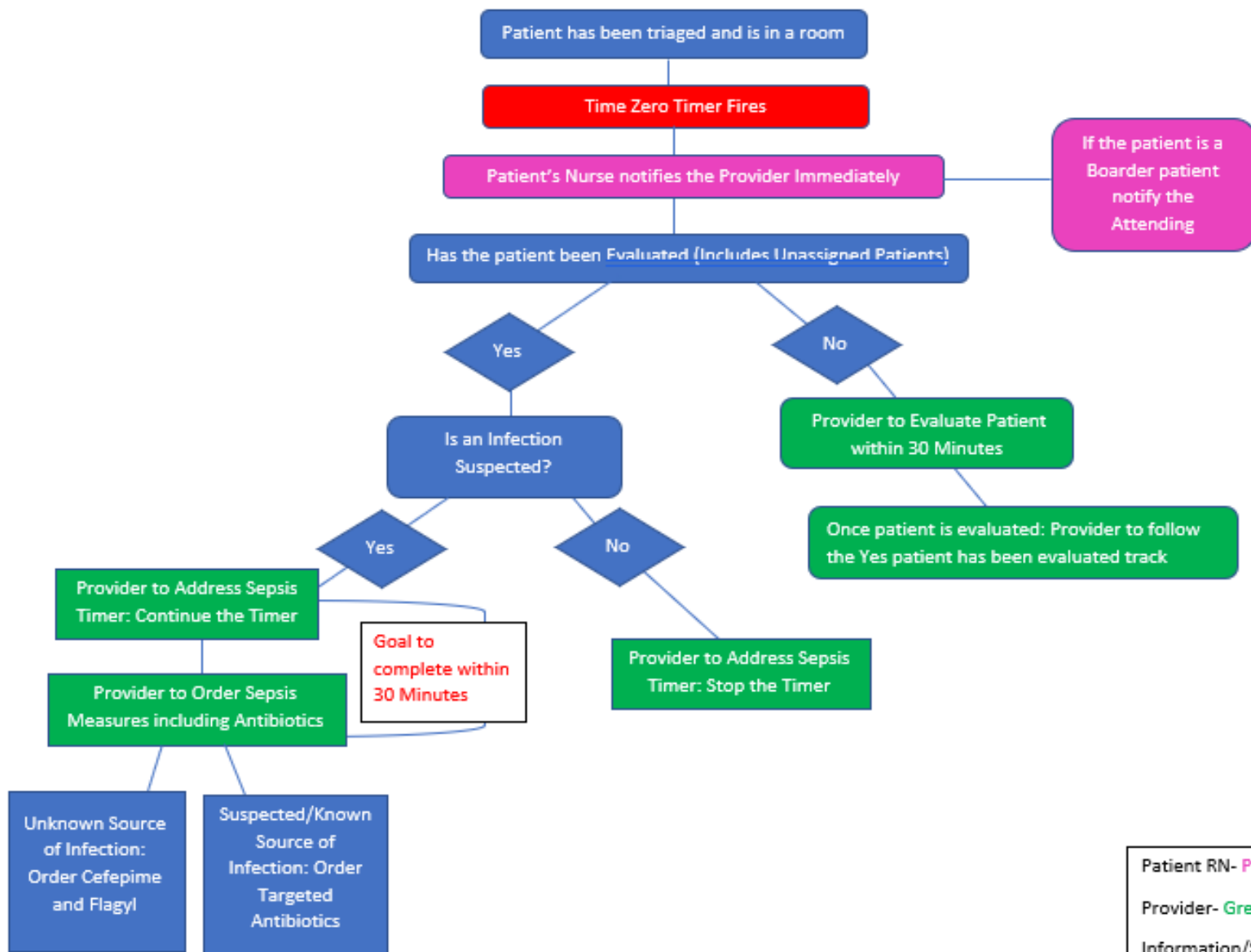
**SLIDE 4: SOP FOR A PATIENT IN THE
WAITING ROOM WHEN THE SEPSIS
TIMER GOES OFF**

**SLIDE 5: SOP FOR A PATIENT WHO
HAS BEEN ROOMED WHEN THE
SEPSIS TIMER GOES OFF**

SEPSIS TIME ZERO STANDARD OPERATING PROCEDURE: PATIENT IN WAITING ROOM



SEPSIS TIME ZERO STANDARD OPERATING PROCEDURE: PATIENT HAS BEEN ROOMED



Patient RN- Pink
 Provider- Green
 Information/Steps- Blue

IMPROVE – What was Implemented

Sepsis Sally was created as a visual management tool. Sepsis Sally is a life size cutout that has information surrounding sepsis, specifically surrounding antibiotic administration. Sally's information will be updated monthly to help the ED staff see their progress as well as where we can improve. She has the suggested antibiotics to use if the source of sepsis is unknown. There is also information on the continuation of the sepsis timer as well as how long it takes to get the antibiotic ordered verses how long it takes to get the antibiotic administered after order. She was put in the ED on September 1st to kickoff Sepsis awareness month.



CONTROL – Next Steps

We will be monitoring the data and reporting out at the Emergency Department Meeting as well as to the Sepsis working group. The SOP will be educated to by our sepsis coordinator during new provider onboarding. New nursing staff will also be educated on the SOP. The SOP will be added to the process binders, kept in the ED, for reference. Doctor Moore and Sarah Droege have both acknowledged holding staff accountable once the process is established.

Timeline:
SOP formatted by 9/16, Feedback from subgroup by 9/23, Education and implementation of process by 10/31, Data to be monitored monthly for 3 months followed by statistical analysis for improvement. Plan to hand of the Sepsis coordinator Anna Wade with data support by the green belts.

OVERALL LESSONS LEARNED

Catrice: I learned that I can take a step back and not always be the lead. In the past I usually take control and do not trust that others will do tasks correctly. I also learned that LSS is not just pick a problem and solve it. There is a lot of work that goes on behind the scenes on these projects.

Brianna: I learned that process improvement is much more impactful, and people are more conducive to change when you statistically prove an opportunity. Facilitation becomes more natural when your entire team understands where to focus.

Both of us work in a quality background so we had an idea of how to facilitate and start a project. We both feel this went smoothly compared to our typical projects.

OVERALL LESSONS LEARNED

The participation during the development of the SOP was surprising. Many times, during meeting facilitation there is not much feedback given and the facilitator takes the action items. During this meeting, all parties present gave helpful feedback and created the SOP to fit their workflow in the ED.

REWARD AND RECOGNITION

We would like to recognize those who were involved with this process from the beginning. They were instrumental in the overall process. These persons include Duane Moore, MD, Nagla Abdelmalek, MD, Ryan Tegethoff, PA, Sarah Droege, RN, ED manager, Susan Gowin Woelfel, RN, Clinical educator, Anna Wade, RN, Sepsis coordinator, and Chelsea Connell, RN, ED

NEXT PROJECT(S)

Working in the performance improvement/quality department having the LSS green belt certification will allow us to dig into the why behind issues and help to develop a well-rounded plan for improvement. This knowledge can be used in just about any department/area in the hospital whether that be working with environmental services to nursing departments.

Some projects that we can see benefitting from the DMAIC process includes decreasing hospital acquired pressure injuries, improving throughput, and increasing the number of hospice/palliative care consults for those patients who could benefit.

Brianna is starting a project surrounding delays in lab collection.

Catrice is starting a project to get rescue medications into the procedural rooms in the GI lab.