

Time is of the essence: Timely Release of Blood Culture Results NICU, Women's Hospital, Hamad Medical Corporation

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Introduction

Early onset sepsis is one of the most common cause of neonatal mortality and morbidity, so suspected sepsis is one of the most common diagnosis in NICU. Antibiotics are the optimal treatment for these infants. Data shows association between prolonged treatment with antibiotics and higher risk of late onset sepsis, NEC, and mortality. To reduce these risks antibiotics should be discontinued at 48 hours if the blood culture is negative and the clinical course does not indicate infection.

Background:

Delay in release of blood culture result for more than 48 hours (occurs in 83%) in neonates who are admitted to IC with suspected sepsis and this will increase unnecessary extended use of antibiotics which in turn increases the morbidity, resistance of organisms to antibiotics and results in bed crisis and dissatisfied parents due to delayed discharge.

Aim of the Project:

Reduce the delay of releasing the blood culture beyond 52 hours for Intermediate Care babies for whom early onset sepsis is ruled out from the current 83% by at least 50% by 31/12/2017.

How will we know that a change is an improvement?

Outcome measure:

❖ Compliance of percentage of release of blood culture within 52 hours

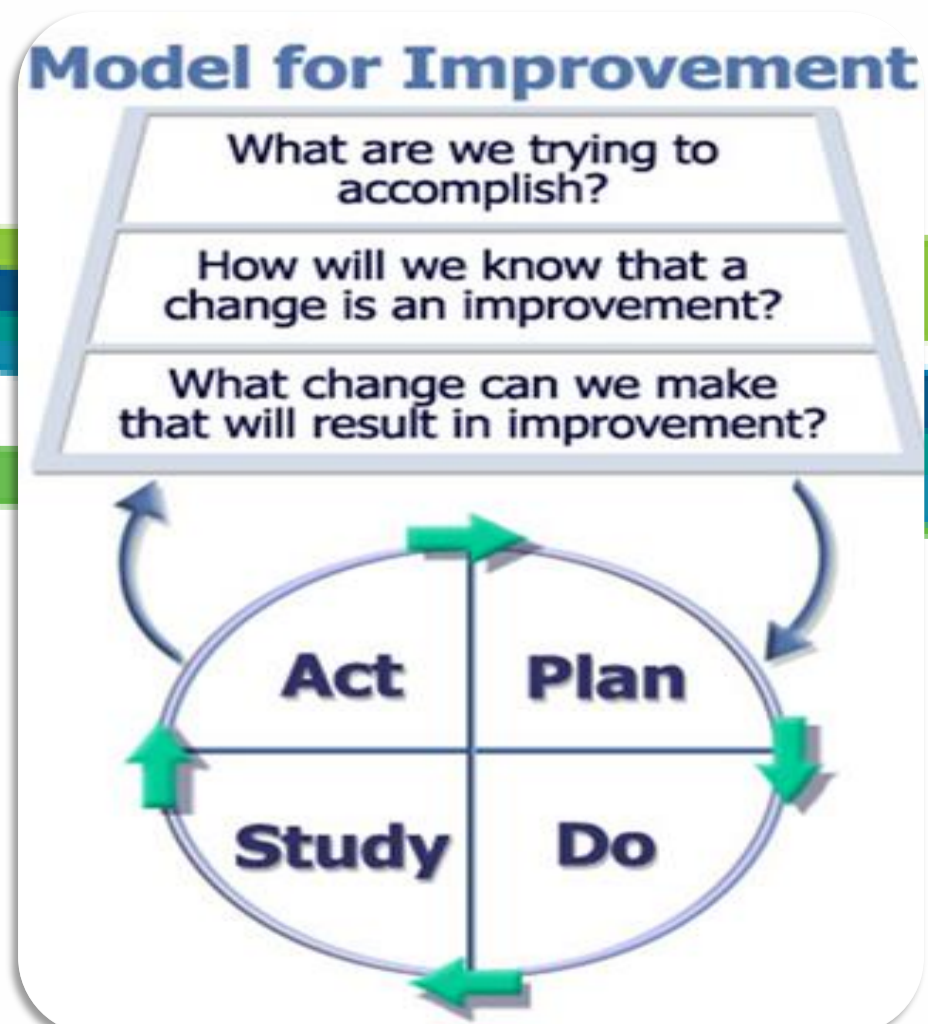
Process measure:

- ❖ Percentage of time taken to reach the Control Room from NICU.
- ❖ Percentage of time taken to reach Microbiology Lab from Control Room.

Balance measure:

- ❖ Percentage of babies resuming antibiotics within one week of stopping antibiotics
- ❖ Percentage of babies needing readmission within one week of stopping antibiotics

Improvement Methodology

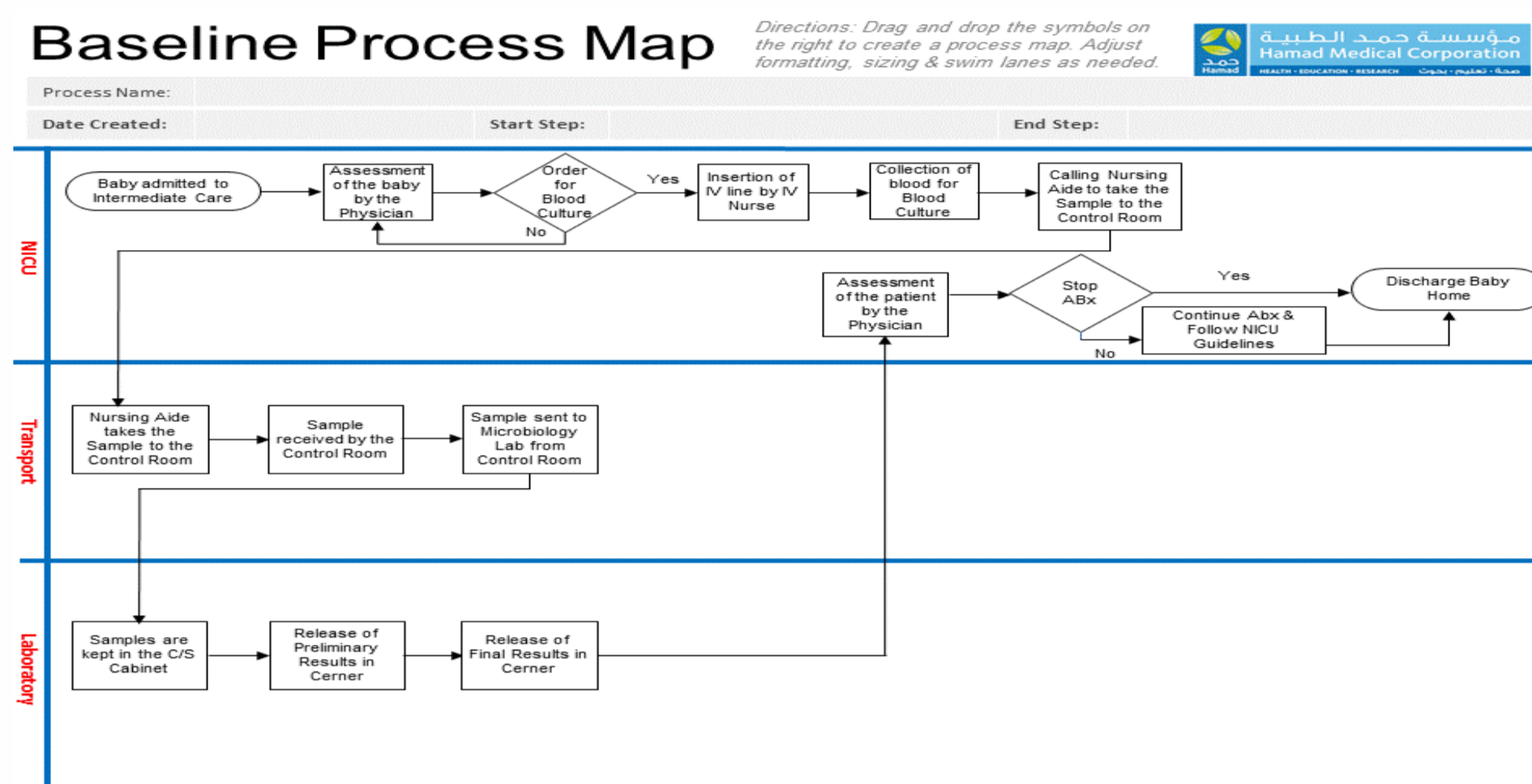


- ❖ Utilized the Model for Improvement Methodology
- ❖ Formed a multidisciplinary team, setting specific aims, identified measures, introduced change in the unit and monitored compliance
- ❖ Continuous small tests of change
- ❖ Implemented change in one unit

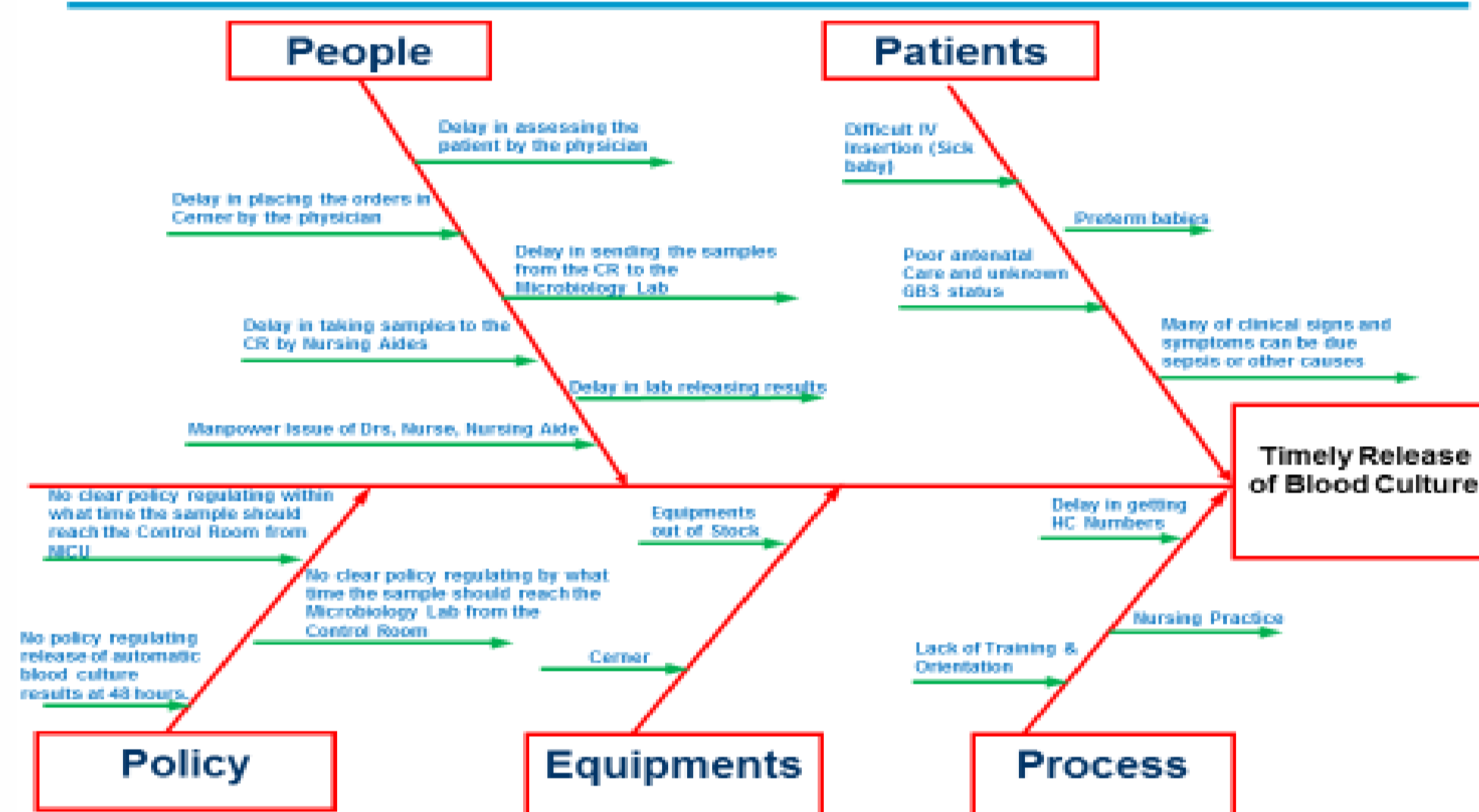
Developed by Associates in Process Improvement

In Collaboration with

Process Changes & Interventions



Cause and Effect Diagram



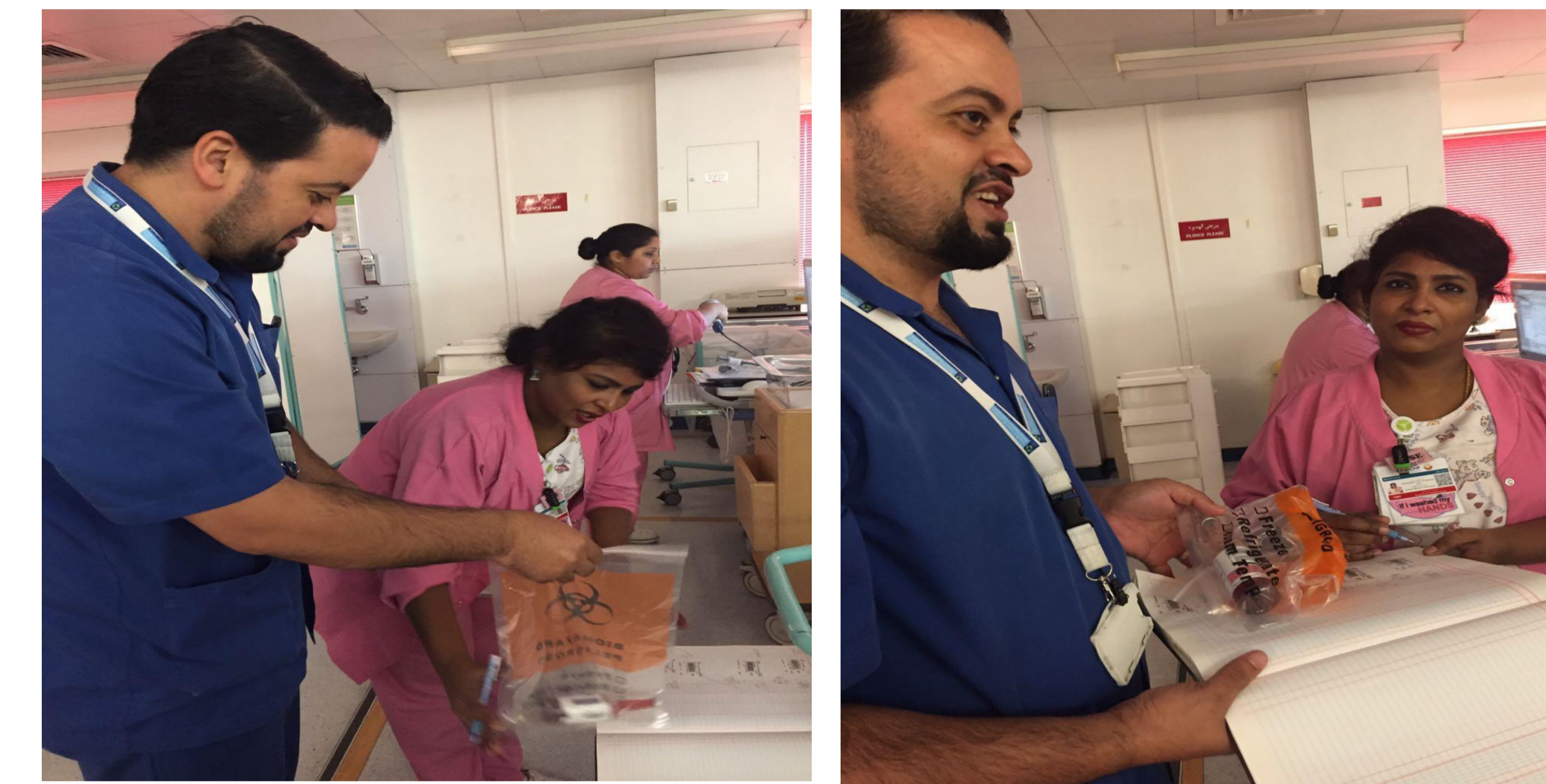
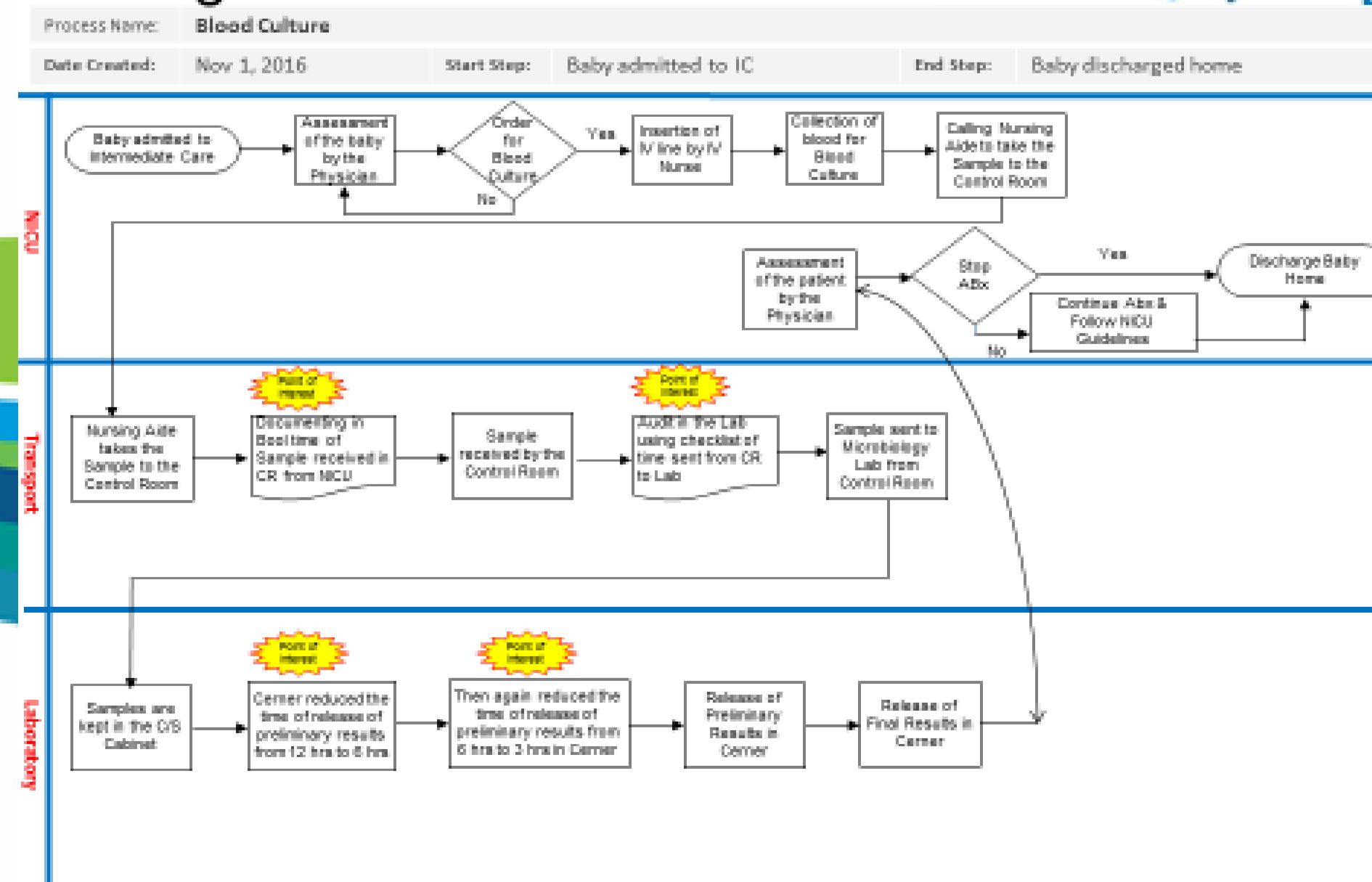
PDSAs undertaken

Checklist to document the steps right from collecting the sample till reaching the control room in the lab.	Standardized the timing of sample collection and release of culture results.
Checklist to document the time taken from the Control Room to the Microbiology Lab.	Standardized the timing of sample collection and release of culture results.

PDSAs undertaken

Reduced the release of preliminary results in Center from 12 hours to 6 hours (9 am - 12 pm - 6 pm - 9 am).	Communication with Center staff, more release of culture results and more timely release.
Reduced the release of preliminary results in Center from 6 hours to 3 hours (9 am - 6 am - 9 am - 12 pm - 3 pm - 6 pm - 9 pm - 12 am).	Communication with Center staff, more release of culture results and more timely release.
Communication with the Lab to review the cases not released on time.	Reviewing the cases and releasing the results.

Changes Made to the Process



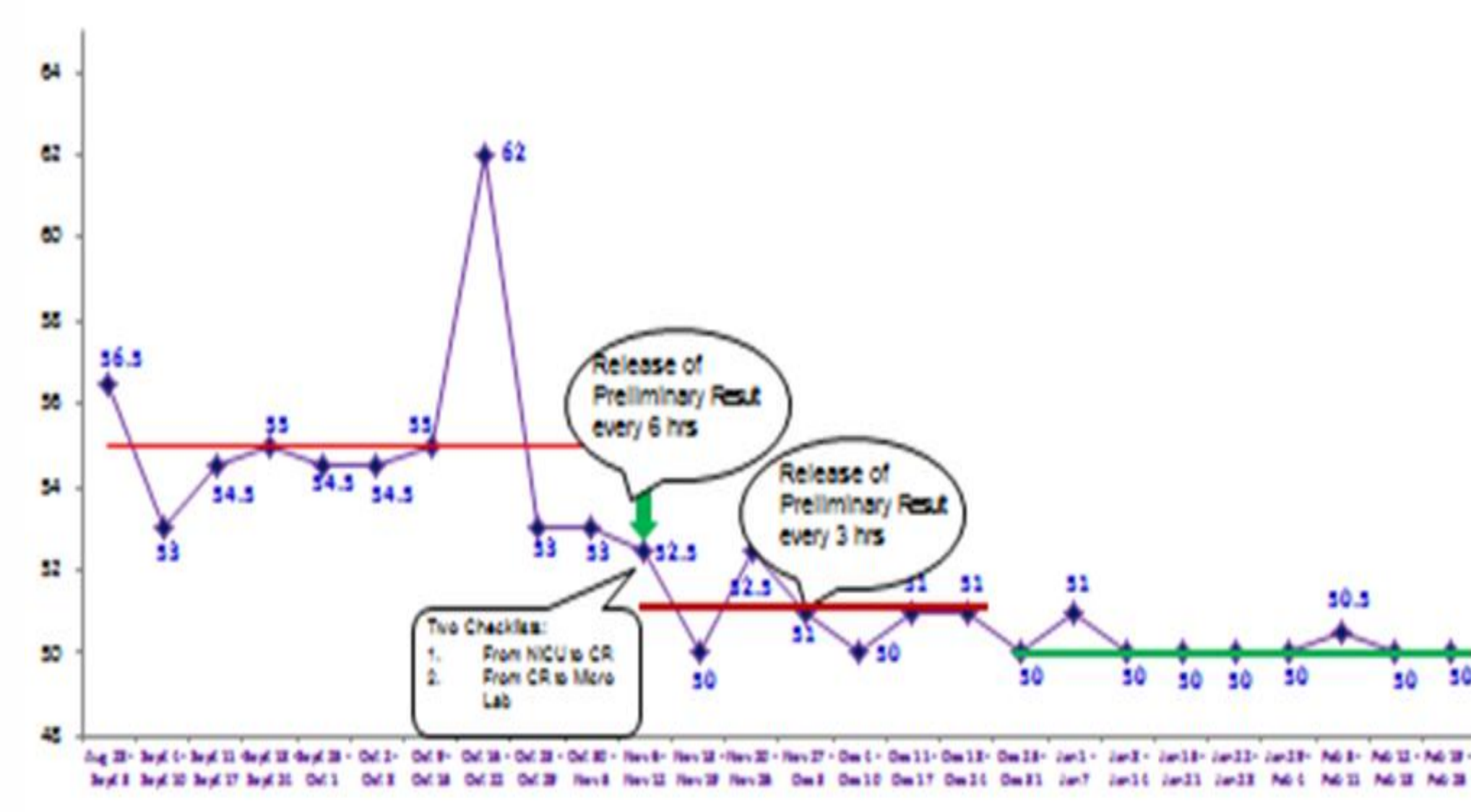
Service resource: HG Hamad
 Procedure: Blood Culture Paediatric
 Day of week: Sunday

Time	Printer
12:00 AM	mcog22
6:00 AM	mcog22
12:00 PM	mcog22
6:00 PM	mcog22
9:00 PM	mcog22

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Results and Analysis



Conclusion

- ❖ The project was able to reduce the delay in release of blood culture results from an average time of 55 hours previously to an average time of 50 hours currently.
- ❖ Now the preliminary blood culture results are released every 3 hours (3 am – 6 am – 9 am – 12 pm – 3 pm – 6 pm – 9 pm – 00 am) instead of every 12 hours previously.
- ❖ This helped in stopping antibiotics on time and helped in putting a clear discharge plan, so helped in reducing the occupancy rate and length of stay resulting in better utilization of beds and efficient service of care.

Sustainability Plan

- ❖ Further reducing the rate of delay to 30%.
- ❖ Expand this project to ICU units by June 30th, 2017.
- ❖ Continue to perform audits every 3 months.