

Improve Decision-to-Delivery Interval Time by Implementation of “STAT OB” Response Team

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Background

The Labor and Delivery Unit (L&D) is one of the high acuity closed units where continuous monitoring and one-to-one care is delivered. Sudden and unexpected emergencies may arise without any warning signs that may require an immediate cesarean section delivery to save the life of the mother and/or baby and reduce the risk of possible associated morbidity.

Decision-to-Delivery Interval (DDI) is a quality indicator in the L&D. It is the timeline between a decision to conduct an emergency caesarean section and actual delivery of the baby. Prolong DDI constitutes a third phase delay in provision of emergency obstetric care. Interventions designed to facilitate delivery and minimize DDI are vital in attempting to-reduce maternal and neonatal morbidity and mortality.

Aim

Develop an organization-wide policy on management of Crash Cesarean Section (CCS) to decrease DDI time and ensure STAT OB announcements are responded/attended within five minutes.

Objectives

Structure Objective: By the end of June 2021, STAT OB will be developed and polished in JHAH.

Process Objective : by the end of June 2021 the Response Time to STAT OB team to be less five minutes.

Outcome Objective :By the end of October 2021, the compliance to Decision-to-Delivery time will decrease by 20% from the baseline data in June 2021.

Methodology

A retrospective cross-sectional study conducted involving inpatients who underwent emergency cesarean section. The study revealed that 57 cesarean section procedures were performed between January 2018 and June 2021. DDI ranged from 9 to 33 minutes with a mean DDI of 19.7 minutes. Great variation in DDI time was observed due to lack of standardization, clinical practice variations, system failure, communication failure, and lack of defined leadership role. The findings above exposed an opportunity for improvement in DDI time that required Obstetric Team to develop a policy on STAT OB.

Comprehensive Unit-Based Safety Program methodology was implied to initiate a process improvement project and formed a multidisciplinary team representing obstetricians, anesthetists,

neonatologists, anesthesia technicians, midwives, NICU and OR nurses, and process improvement specialists.

The team conducted a root cause analysis (RCA) where the following challenges/barriers identified:

- Variations in clinical practice.
- Absence of written guidelines in the form of a policy or procedure to standardize the response and clarify the roles and responsibilities of the team members.
- Communication failure between team members.
- Alarm for emergency C-section is activated or heard within the Obstetric units only; Tem members outside the unit are notified/alerted by a telephone call.
- Lack of defined leadership role.
- Cesarean section case request in the electronic health record (EHR) is complicated, long, and time consuming.
- Challenges in preparing and administering essential pre-operative medications.

Based on the challenges/barriers identified during the RCA, the following action plan was developed:

- Develop an organization-wide policy on STAT OB to standardize the processes with consensus from all involved services.
- Conduct CCS simulations in the unit.
- Create separate CCS case request button in EHR.
- All essential medications are made available and overridable in the unit medication dispenser.
- Two CCS trays equipped with all necessary items are made ready.
- Continuous performance monitoring and feedback communicated through departmental meetings.

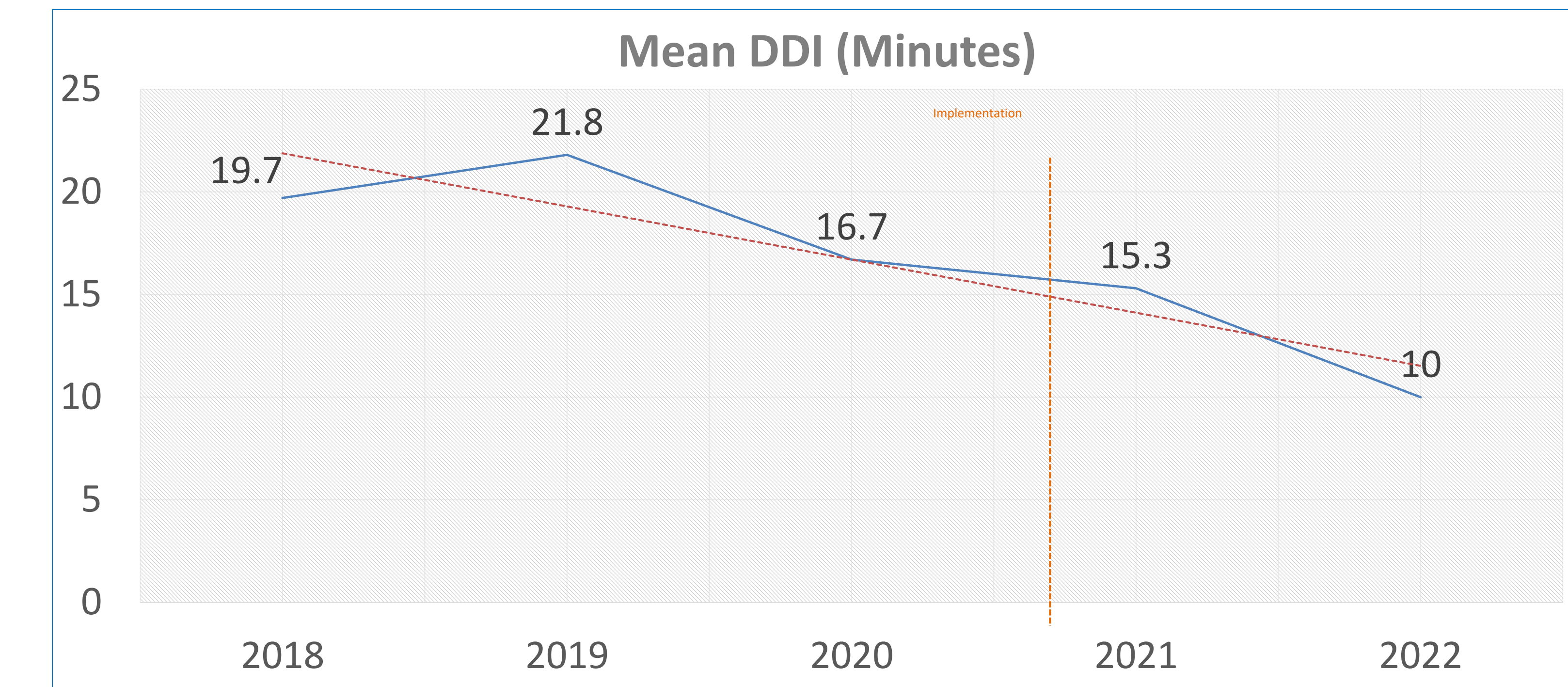
Results

Significant reduction in both the DDI time variation and mean was observed following implementation of an organization-wide policy on emergency cesarean section (STAT OB) and applying evidence-based practice for CCS. Data was collected and analyzed for two periods: Period 1 before and period 2 after implementing Stat OB policy. The number of cases analyzed were 57 in period 1 and 20 in period 2. The DDI ranged between 9 and 33 minutes in period 1, and between 7 and 23 minutes in period 2. There was a significant reduction in mean DDI in Period 2 (11.8 ± 3.45 min) compared to period 1 (19.7 ± 6.02 min). No adverse events occurred. In addition, there was positive team dynamic, which enhanced effectiveness and encouraged good communication. The healthy environment allowed team members to do their best.

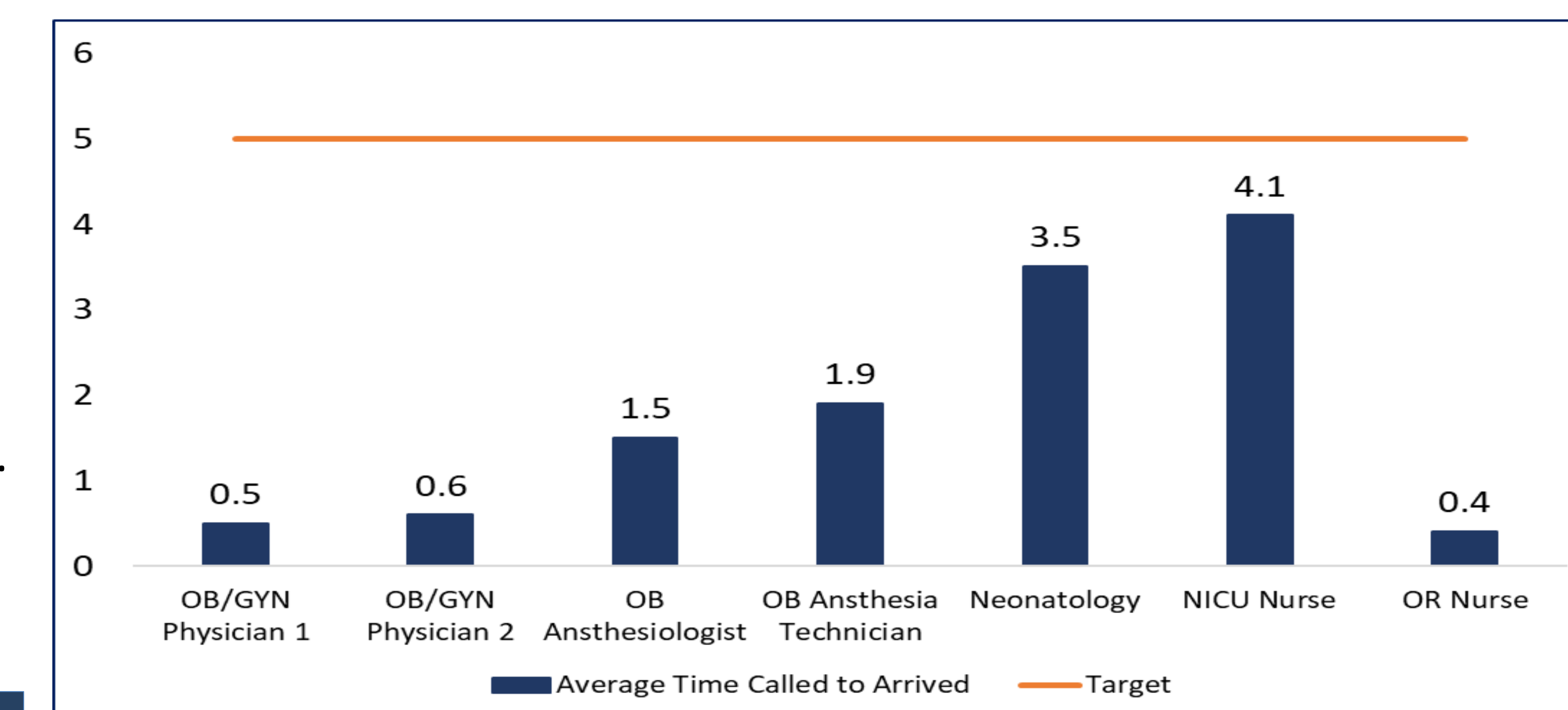
Conclusion

Safety of the mother and child is critical during decision-to-deliver interval time. Developing and implementing an organization-wide policy is achievable and associated with shorter DDI time, improving communication, and team dynamics. Improvement can be sustained by regular compliance audit.

Outcome DDI minutes



Outcome Response Time (in Minutes)



References

- 1) <https://pathways.nice.org.uk/pathways/caesarean-birth>
- 2) <https://www.rcog.org.uk/>
- 3) <https://www.acog.org/>