2021 RANZCOG Virtual Annual Scientific Meeting
15–18 February

Ipswich General Hospital: Caesarean Section Decision to Delivery Interval Audit

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Introduction

The Australian Health Review (2012) highlighted evidence to suggest that a decision to delivery interval (DDI) of greater than 30 minutes, but less than 75 minutes confers the most evidence-based benefits in terms of infant morbidity and mortality.[1] The purpose of this audit was to determine Ipswich General Hospital's (IGH) average DDIs for the different categories of caesarean sections (CS) and identify if there were any common factors that may lead to increased times. In addition, we investigated if any of these prolonged DDIs resulted in adverse neonatal outcomes.

Methods

There was both prospective and retrospective data collection. CS were recorded from July 17th, 2020 to November 2nd 2020. A total of 50 CS were recorded and included in the audit. Prospectively, staff would begin to fill in a form with the time at which different checkpoints were reached when a CS was called. Retrospectively, the total time, checkpoint times, APGAR scores, cord blood gases and special care admissions were recorded and collated. Current DDI targets at IGH are 30 minutes for category 1, 60 minutes for category 2, and 120 minutes for category 3. The checkpoints were divided into birthsuite, travel, theatre and procedure time.

Results

Average time and timeline breeches for CS can be found in table 1. With the breakdown of different average DDI times in figure 1. Of all the category 2 CS recorded, 12/37 babies were admitted to special care, 8 of which breached the 60-minute target. In the category 3 CS, 3/11 babies were admitted to special care, with 1 of those breeching 120 minutes. Throughout all categories there were no abnormal cord gases or concerning APGARs at birth.

Table 1: Average times for emergency CS + total breeches

Category	Target Time (minutes)	Mean	Median	Quickest	Longest	Breaches
1	Within 30	20 min	20 min	16 min	24 min	0/2
2	Within 60	71 min 47 secs	69 min	29 min	136 min	24/37
3	Within 120	132 min 55 secs	122 min	78 min	242 min	6/11

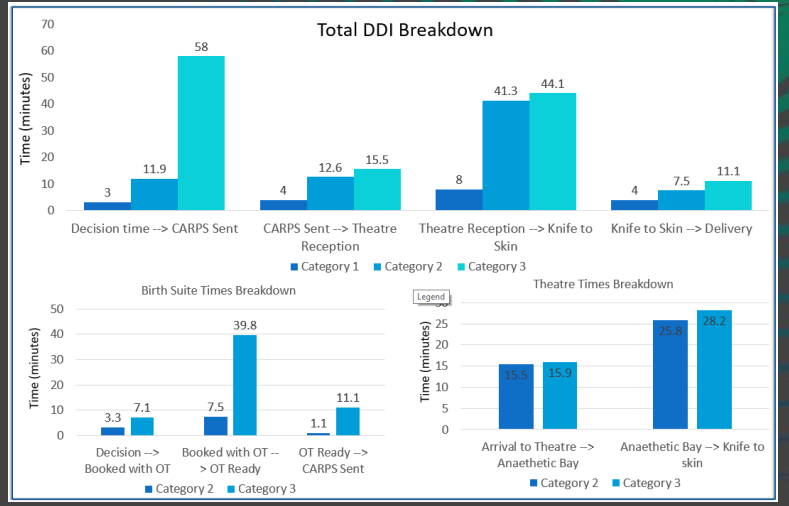

Figure 1: Breakdown of DDI intervals + birthsuite and theatre times

Discussion

From the time of recording, the average time for both category 2 and 3 CS have been beyond the DDI targets. It is apparent that a small sample size may have significantly skewed the data and further investigations/data collection are required. Regardless, current literature demonstrates that most delays are often related to organisational issues and administering anaesthesia, which is consistent with our findings.[1] From our data, there is very little difference between category 2 and 3 duration in theatre (figure 1), thus we may benefit from implementing strategies to safely shorten other intervals. For example; completing safety checks while in the anaesthetic bay/operating room as opposed to the holding bay. In addition, breaking down specific actions in theatre (i.e., positioning, anaesthetic administration) to see if there are any common time-consuming factors that can be improved. There are also many recommendations to improve overall DDIs. For example, hospitals which regularly participate in interdisciplinary team training exercises have shorter DDIs than those who do not (21.2 min vs 33.3 min).[1] In addition, regular audits and the introduction of structured time sheets have shown a benefit.[1]

References:
1.Homer, C. & Catling-Paul, C. (2012). Safe timing for an urgent Caesarean Section: What is the evidence to guide policy? CSIRO Publishing. Australian Health Review : 36, 277-281.