



Transformative changes to a perioperative elective Caesarean section pathway: the Dudley experience



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Introduction:

- There are a number of challenges to optimise theatre efficiency. Correct prioritisation of patients and timely list commencement is integral to the timely completion of all listed cases.
- Central to the Anaesthetic and Perioperative Medicine Getting it Right First Time (GIRFT) principles[1], is the concept of enhanced recovery programmes for elective Caesarean sections[2]. Their advent promotes the delivery of multi-modal analgesia whilst prioritising mobilisation, oral nutrition and prompt discharge.
- Evidence based recommendations from the PROSPECT systematic review [3] were published a few years ago and had so far not been implemented and translated into practice at our institution.
- Guidance from the Dudley Improvement Practice team on evidence based improvement methodology underpinned a process mapping exercise of the perioperative journey. A week long multidisciplinary workshop of Anaesthetists, Obstetricians, Midwives and Theatre teams looked at each step in the journey, examining whether it added value for patients.
- The changes included the identification and prioritisation of complex cases which are now termed the 'Obstetric Golden Patient', these patients are listed first and pre-assessed a day prior to their Caesarean Section and are asked to arrive first on the day of surgery, to minimise the waiting time and improve patient experience.
- A new enhanced recovery programme which embraces recommendations from the PROSPECT review has also been introduced. Patients now receive pre-operative oral paracetamol, intra-operative IV Ondansetron and Dexamethasone (non-diabetics) and local anaesthetic infiltration into the rectus sheath and wound by the Obstetricians. Early eating and drinking and mobilisation is encouraged post-operatively.

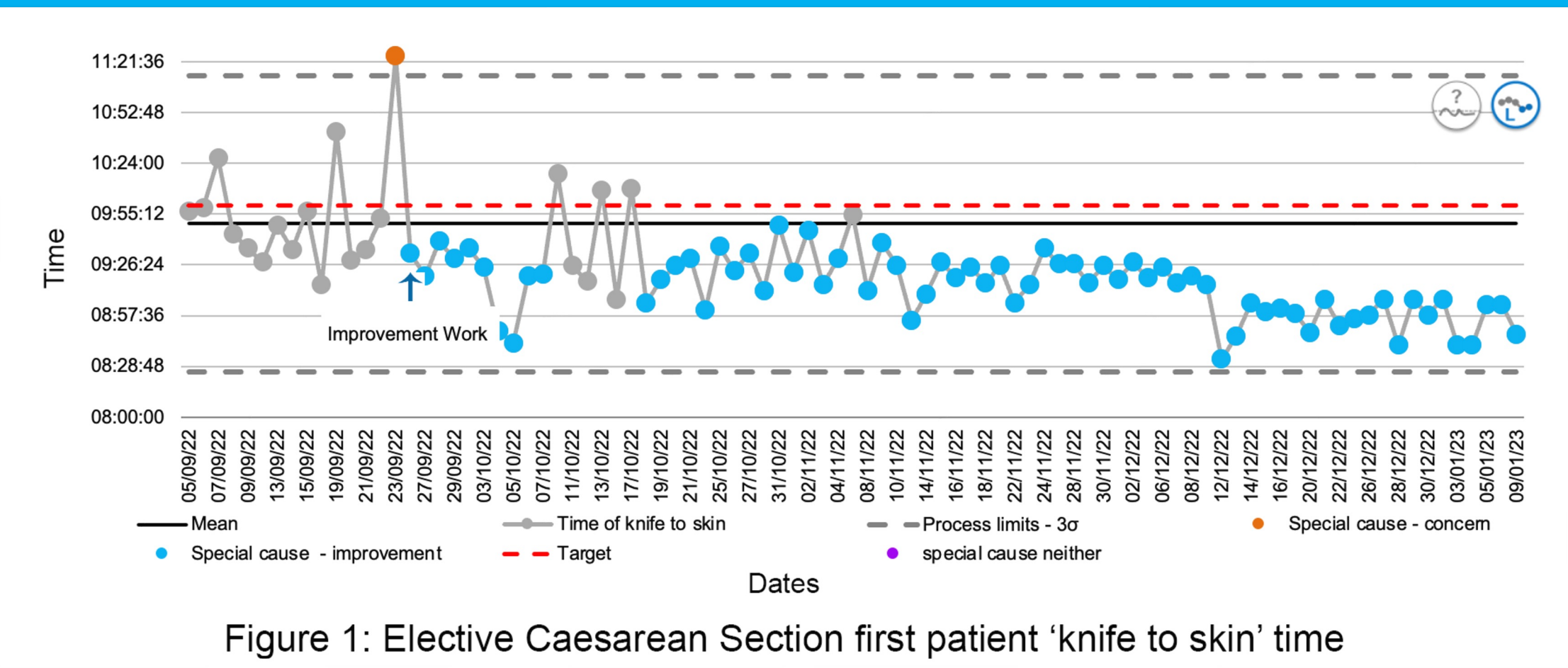
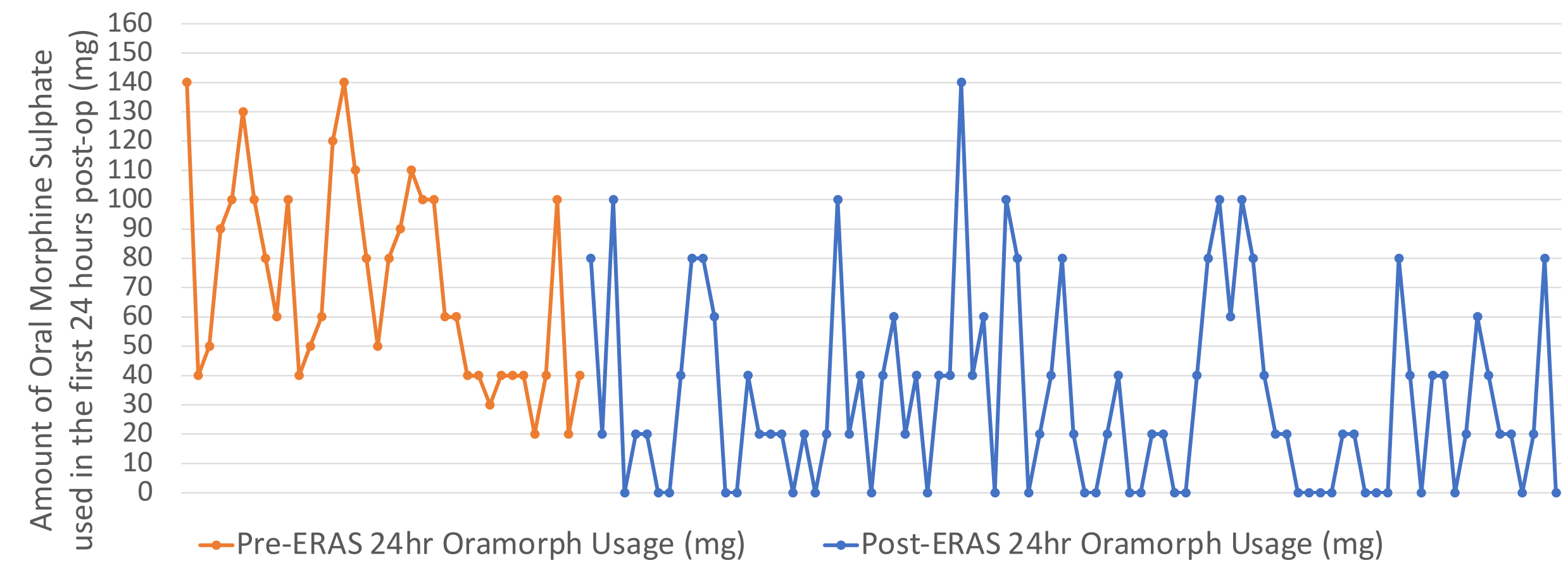


Figure 1: Elective Caesarean Section first patient 'knife to skin' time

The mean first patient knife to skin time was 52 minutes earlier after the introduction of the Obstetric Golden Patient. Identification of complex patients prior to the day of surgery allows appropriate preparation to ensure timely commencement of the list. Staggering of patient arrival, facilitates timely preparation for theatre and efficient running of the list.

Figure 2: Pre and Post Enhanced Recovery Oral Morphine Sulphate usage in the first 24 hours post elective Caesarean Section



The enhanced recovery programme saw patients receiving pre-operative Paracetamol, intra-operative Ondansetron and Dexamethasone and local anaesthetic infiltration into the rectus sheath and wound. Mean Oral Morphine Sulphate use in the 24 hours post-op fell from 45.2mg to 31.7mg (30%) as a result of the changes made.

Methods:

- A retrospective review of practice in the two weeks prior to the implementation of changes was conducted. This utilised multiple data points collected from a variety of sources including the theatre database which recorded the start, finish and key intra-operative milestones for each case. Sunrise electronic patient records for these patients were reviewed to determine post-operative opiate use and length of stay.
- Following the implementation of the Golden Patient pathway and enhanced recovery programme we once again reviewed theatre efficiency, the number of cancelled cases or cases that overran or had to be conducted in our emergency theatre after the end of the elective list. We reviewed opiate use in the first 24 hours post delivery and total length of stay.

Results:

- The prioritisation of the 'Obstetric Golden Patient', staggering of patient arrival times and prompt team briefing has improved the mean first patient knife to skin time has improved by 52 minutes. This has therefore resulted in improved list completion, reduced cancellations and a reduction in the number of elective cases having to be completed in the emergency obstetric theatre. The improvements in theatre efficiency have improved team morale.
- The implementation of the enhanced recovery programme, the use of pre-operative Paracetamol, intra-operative anti-emetics and local anaesthetic infiltration (2ml/kg 0.25% Bupivacaine) has resulted in a reduction in Oral Morphine sulphate use in the first 24 hours post-operatively by 30%

GOLDEN PATIENT

LOCAL INFILTRATION



ENHANCED RECOVERY

PROSPECT GUIDANCE

Discussion

- Simple improvements made through process mapping and redesigning the perioperative pathway for patients has improved theatre efficiency, translating to a theatre time saving of approximately £230,000 per year.
- Multidisciplinary working using Improvement methodology can lead to wholesale improvements which not only translate into efficiency savings but an improvement in patient experience, reduction in post-operative opiate use in the first 24 hours post-op.
- The changes implemented were embraced by wider team members who were not directly involved in the week-long improvement workshop. Communication about the rationale for changes made to the pathway is essential to get buy-in from the wider team.
- This process of clinical pathway value stream improvement within inpatient maternity services has led to a number of workstreams to improve induction of labour, triage and discharge of patients in addition to this work conducted to improve the elective Caesarean section pathway.
- The authors hope to analyse further data points in the coming months to formally assess the impact of the changes implemented on post-operative pain, nausea and other adverse effects using the 'overall benefit of analgesic score' (OBAS). This, combined with length of stay analysis will enable us to fully appreciate the impact of the changes made to the elective Caesarean Section pathway.
- Colleagues within the team have fully embraced improvement methodology as a result of the improvement week and there is a new found enthusiasm to improve patient pathways to deliver excellent care.

References:

1. Snowden C, Swart M. Anaesthesia and perioperative medicine: GIRFT Programme national specialty report. Getting It Right First Time NHS England and NHS Improvement. 2022
2. Kitson-Reynolds E, Rogers J. Service evaluation for the 'Enhanced recovery after planned caesarean section'. Journal of Nursing and Women's Health. 2017(02), 1-7.
3. Roofthoof, E., et al. PROSPECT guideline for elective caesarean section: updated systematic review and procedure-specific postoperative pain management recommendations. *Anaesthesia* 76.5 (2021): 665-680.