

Are enhanced recovery principles now embedded in standard practice for elective caesarean sections?



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Introduction:

Enhanced recovery after surgery (ERAS) has existed as a concept since the 1990s. Initially utilised in colorectal surgery, it has since been adopted by many surgical specialties, obstetrics included. The key principle of ERAS is to optimise pre, intra and post-operative care to improve the quality and speed of recovery in surgical patients.¹ ERAS has been shown to have multiple benefits such as reducing length of stay in hospital, improving patient satisfaction, enabling a faster return to normal activities and reducing postoperative pain. These positives also bring significant economic advantages.²

We performed a service evaluation of elective lower segment caesarean sections (LSCS) at a London tertiary centre to see if enhanced recovery principles commonly feature in daily practice for planned caesarean deliveries.

Methods:

A “gold standard” for the intraoperative management of elective caesarean sections was devised using a combination of enhanced recovery for LSCS guidelines from the USA, Canada and the UK. Sources used included: *Enhanced Recovery Canada*³, the *American Journal of Obstetric and Gynecology*⁴, the *Society for Obstetric Anaesthesiology and Perinatology*⁵ and *BJA Education*⁶.

The final ERAS checklist consisted of 29 care points (see figure 1). 33 elective LSCS cases were observed from May 29th to June 18th 2025 to assess compliance with this checklist. We also measured the time from delivery to the time of skin-to-skin contact with the mother.

Results:

Compliance with ERAS principles was high (see figure 1). 15 points out of the 29 had 100% compliance. A further 6 recorded over 90% compliance. 80-89% scores were observed for “2 x antiemetics to be given with different mechanisms of action” and for “temperature measurement at the beginning and end of surgery”.

Areas of relatively low compliance (below 80%) included: “the administration of preoperative or intraoperative paracetamol”, “the use of forced air blankets in surgery lasting longer than 60 minutes” and “maintaining theatre temperature between 22 and 24 degrees Celsius”.

The median time for delivery to skin-to-skin was 11 minutes.

	ERAS for LSCS checklist
1	Permitted to sip till send
2	Offered music at the start of the operation
3	Offered a support person to be present in theatre
4	Neuraxial anaesthetic technique used
5	Intrathecal opiate utilised
6	Vasopressors commenced after intrathecal injection
7	1 Litre of fluid given after spinal injection
8	Less than 3 Litres IV fluid given
9	Left lateral tilt of up to 15 degrees applied once patient is supine on the operating table
10	2 x prophylactic antiemetics given with different mechanisms of action
11	Preoperative or intraoperative paracetamol administered
12	Intraoperative NSAIDs given
13	Intraoperative Dexamethasone given to enhance efficacy of analgesics
14	Warmed IV fluids given
15	Forced air blankets used on the lower body if surgery > 60 minutes
16	Theatre temperature maintained at 23 degrees C (22 - 24 acceptable)
17	Temperature measured at beginning and end of surgery
18	IV antibiotics administered 15-60 minutes before skin incision
19	Urinary catheter placed
20	Skin cleaned with Chlorhexidine (rather than Povidone-Iodine solution) prior to surgical skin incision
21	Transverse abdominal incision utilised
22	Mother offered to see newborn immediately after birth
23	Offered silence at birth so first voice baby hears is the mother's
24	Minimum 1 Unit of Oxytocin given after delivery
25	Oxytocin infusion commenced after oxytocin bolus
26	Delayed cord clamping of at least 60 seconds (30 seconds if <37/40 gestation)
27	Newborn temperature maintained 36.5 - 37.5 degrees C after delivery
28	Pulse oximetry used to assess newborn oxygenation status
29	Skin to skin contact encouraged if possible

Figure 1 – the “gold standard” intraoperative enhanced recovery checklist for LSCS. 90-100% compliance are shaded green, 80-89% orange and <80% red.

Discussion:

This service evaluation project suggests that ERAS principles have become embedded in standard practice for elective LSCS. However, variability remains in some intraoperative domains. Strategies to improve compliance in the lower performing areas have since been devised so that positive refinements to the patient experience can be made by virtue of further evaluation and improvement cycles. The interventions were:

- Presenting findings to obstetric anaesthetists, obstetricians and midwives at departmental meetings and encouraging discussion about how improvements can be made
- Introducing an ERAS checklist onto the electronic anaesthetic record
- Liaising with estates about maintaining theatre temperature
- Raising the issue of skin-to-skin times with the intrapartum subgroup and elective midwives

It is hoped that these changes will improve compliance with consensus guidance and, in time, all women having an elective LSCS will have an evidence-based pre, intra and postoperative enhanced recovery protocol to help guide their experience.

References:

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