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Working title: Enhanced recovery pathway for elective caesarean section

Caesarean section (CS) is one of the most common surgical procedures performed by the NHS. In 2013-14, over 73, 000 (44%) were planned or 'elective' operations[1]. Compared with spontaneous birth, CS is associated with prolonged hospital stay, despite recommendations by the UK National Institute for Health and Care Excellence that, if recovering well, women can go home 24 hours after surgery[2]. Women have expressed a strong desire for earlier discharge after elective CS, provided their care needs are met[3]. The proportion of women leaving hospital the day after elective CS continues to rise in the UK[1], suggesting that 'enhanced recovery' (ER) principles are being practised, albeit inconsistently[4,5].

We aimed to identify current practice through an online survey of UK maternity units, and to reach consensus on an ER clinical pathway, with inbuilt Quality Improvement (QI) components[6], for elective CS via an expert consensus workshop using the Nominal Group Technique[7] and a round table discussion in March 2015[i].

Thirty-six academic maternity units, participating in national randomised controlled trials (ISRCTN29654603 or ISRCTN66118656), were invited to take part in the online survey by email. Lead obstetric anaesthetists then completed a web based survey application (Survey Monkey, Palo Alto, California, USA www.surveymonkey.com). Completion of the questionnaire was taken as implied consent to participate. The survey was completed by 30 maternity units (83%). 50% of respondents had a formal ER protocol in place and 30% reported plans to introduce one. Ten units (33%) reported that between 20-50% of their patients go home the next day after elective CS. Three units reported that more than 50% of patients are discharged the next day; eleven (37%) discharged fewer than 10% of their patients the next day. The survey suggests an increase in adoption of ER pathways in line with a national trend towards earlier discharge, although these data may be subject to selection bias, since units surveyed were uniformly already actively engaged in clinical trials in reproductive health.

The Nominal Group Technique (NGT) was used to conduct the consensus exercise with an expert panel of health professionals and mothers with experience of elective CS. NGT is a multi-stage process designed to combine opinion into group consensus during a structured face-to-face meeting[7]. A formal systematic review of relevant evidence was completed prior

to the consensus exercise and reviewed in detail at the meeting[8]. The expert panel were then asked to generate ideas for their preferred components of the ER pathway, all of which were rated twice using a 5 point Likert scale. Consensus was defined as 75% agreement (positive or negative). A round table discussion, ~~was also~~led by a QI specialist, was also used to test the acceptability of key approaches to implementation and to ~~completed in order to~~ generate ideas for an overall quality improvement~~the QI~~ strategy; this was recorded and transcribed verbatim. Written informed consent was taken from all participants at the workshop start.

A multi-disciplinary panel of ten experts attended the consensus workshop (out of 16 invited), including three patient representatives and seven clinicians (representing anaesthesia, obstetrics, neonatology and midwifery). Consensus was achieved on an ER pathway for elective CS including fifteen clinical and five organisational components (table 1). The expert panel also made recommendations on a preliminary QI strategy to support implementation.

Table 1 – Summary of clinical and organisational components included in the ER pathway

Operative phase	Clinical components	Organisational components
Pre-operative	1. Patient education	1. Consultant delivered care
	2. Fluid restriction timing	
	3. Food restriction timing	
Intra-operative	4. Immediate skin to skin contact	2. WHO checklist
	5. Avoidance of maternal hypothermia	
	6. Breast feeding in theatre	
	7. Sub-cuticular wound closure	
Post-operative	8. Regular analgesia	3. Early discharge package
	9. Bladder care plan	4. Post-discharge support
	10. IVI discontinuation in recovery	5. Access to food overnight
	11. Early mobilisation	
	12. Post-operative surgical team review	
	13. Fluids and food given in recovery	
	14. Infant temperature monitoring	
	15. Breastfeeding education	

This ER pathway has many similarities with existing, published ER pathways for elective CS[8], although several novel interventions were identified (components 6, 7, 12 and 14). However, a key weakness of this study technique is the difficulty of establishing the strength

of evidence for individual components and pathways[8], and as the panel identified, this is likely to create a barrier to acceptance.

In conclusion, this study provides a useful preliminary step towards agreeing the content of an ER pathway for elective CS. The expert panel recommendations can be used to support delivery of NICE guidance on early discharge[2] and help to normalise this in clinical practice. However, implementation of ER pathways in this, and other clinical fields, remains a key challenge. Future research exploring the implementation and adoption of this pathway would help to improve the likelihood of sustained change to the likely benefit of both patients and services.

790 words (including table and endnote)

[i] This letter is based on a longer report which is available in the White Rose Research Online repository[9].

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