

Enhanced Recovery After Caesarean Delivery: Has the Introduction of an App-Based Intervention Improved Our Compliance?

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Introduction

- Pre-operative education is the cornerstone of a successful enhanced recovery after caesarean (ERAC) programme.
- With the introduction of electronic health records (EHR) and sustainability initiatives in our trust, increasing numbers of patients were no longer receiving written information about their caesarean delivery (CD) and recovery.
- Phone app-based interventions have demonstrated potential benefit in other enhanced recovery programmes by improving compliance [1].
- A novel CD ‘companion app’ was devised by our team and launched in June 2024.
- We evaluated the impact of this pilot app on compliance to our ERAC programme.

Methods

- After approval from our local QI department, we prospectively followed 100 patients undergoing elective CD at our tertiary hospital between Nov 2024 and Jan 2025.
- EHRs were reviewed together with patient surveys to analyse compliance to various ERAC components [2] such as patient education, pre-operative fasting and postoperative mobilisation.
- Results were compared with similarly collected 2023 data (pre-app).

Results

- Adherence to multiple ERAC components improved, particularly in patient education, early postoperative oral intake and mobilisation.

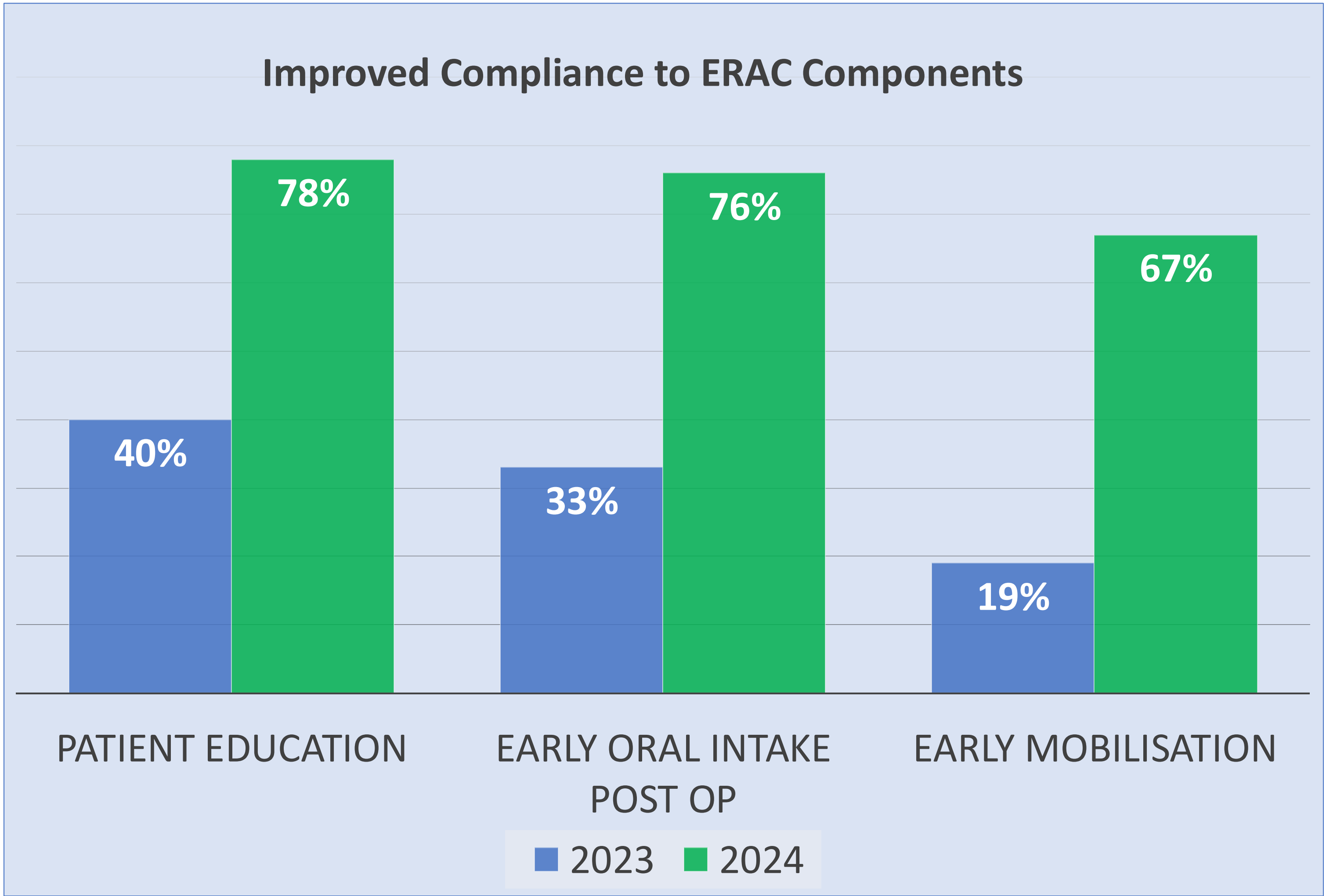
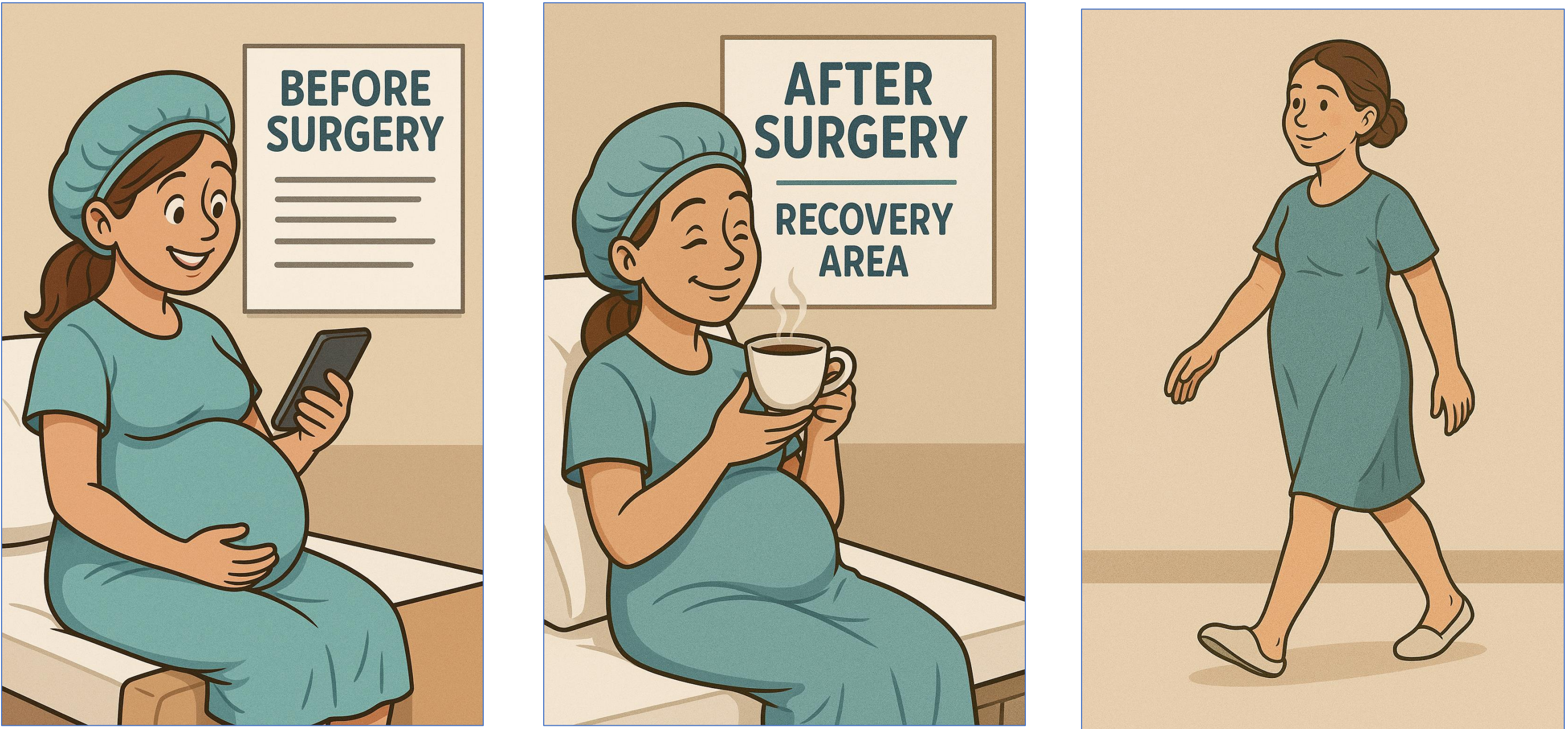


Figure 1: Compliance to ERAC components 2023 vs 2024

	Pre-app 2023 (n=100)	Post- app 2024 (n=100)	P-value
Patient education	40	78	<0.0001
Pre-op fasting clear fluids (<2h)	10	25	0.0052
Early oral intake post op (<1h)	33	76	<0.0001
Early mobilisation (<8h)	19	67	<0.0001
Early removal of IDC (<12h)	8	27	0.0004
Multimodal analgesia	9	22	0.011
Would have likes more information pre-CS	69	40	<0.0001
Length of stay, 1st CD (median, h)	48 (95% CI 44 to 50)	48 (95% CI 44 to 54)	0.62*
Time ready for discharge, 1st CD (median, h)	40 (95% CI 30 to 48)	47 (95% CI 32 to 51)	0.39*

*Mann-Whitney test; nonparametric distribution

Table 1: Compliance to ERAC components pre and post app introduction

Discussion

- Improved provision and satisfaction with preoperative information appears to be the most significant advantage of the app, providing a convenient source of information for patient education.
- Considerable efforts to make institutional improvements through multidisciplinary meetings and staff education, could account for the significant increase in early postoperative oral intake.
- A rise in intraoperative multimodal analgesia may have provided optimum conditions for early mobilisation.
- Length of stay for women having their first CD was unchanged, possibly due to confounding factors, which will be investigated in future QI initiatives.
- Preliminary results show promise that the app will continue to improve our enhanced recovery pathway and should improve patient experience. We plan to re-evaluate once the app is fully embedded into our practice.

References

1. Schlund, D., Poirier, J., Bham, A. et al. Value of an interactive phone application in an established enhanced recovery program. International journal of colorectal disease. 2021; 35(6), 1045–1048. <https://doi.org/10.1007/s00384-020-03563-5>
2. Bollag, L., Lim, G., Sultan, P. et al. Society of Obstetric Anesthesia and Perinatology: Consensus Statement and Recommendations for Enhanced Recovery After Cesarean. Anesthesia & Analgesia. 2021; 132: 1362-1377.