



Royal College of
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Enhanced Recovery in Gynaecology

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1. Background

Enhanced recovery (ER) is also known as ‘fast track’, ‘rapid’ or ‘accelerated recovery’. ER is a model of care for elective surgery, combining elements of care to form a pathway which reduces the physiological stress response and organ dysfunction due to surgery. This enables patients to recover more quickly. Described initially by Kehlet¹ in Denmark in the 1990s for colorectal patients, every aspect of this pathway from decision to operate, through to discharge was planned to promote good outcomes and rapid return to normal function. Patients recovered more quickly, allowing discharge after 2–3 days (at a time when the length of stay in UK hospitals for a colon resection was over two weeks). This radical approach challenged the entrenched conservative management of patients, practised in many hospitals.

Much of the evidence for ER has been published in colorectal surgery including two meta-analyses. Varadhan et al.² produced a meta-analysis of 6 randomised controlled trials (RCTs), including 452 patients. It demonstrated that implementation of at least 4 individual ER elements led to a significant reduction in the ER group of both length of hospital stay (weighted mean difference [MD] –2.55, 95% CI –3.24 to –1.85) and complication rates (RR 0.53, 95% CI 0.44 – 0.64). Gouvas et al.³ undertook a meta-analysis of 11 studies (4 RCTs and 7 controlled clinical trials) including 1021 patients. Total hospital stay significantly reduced (weighted MD –2.46, 95% CI –3.43 to –1.48). In both studies the changes occurred without an increase in readmission or mortality rates. ER is now being implemented in other specialties. During implementation of enhanced recovery pathways, patients should be asked to contact the ward to discuss any concerns for the first 7 days following discharge, with audit to confirm that there is no increase in readmission rates or additional burden on primary care. A Cochrane review of ER in gynaecological cancer⁴ highlighted that there were no RCTs in ER, but the evidence in urology and gynaecology is building.

The Enhanced Recovery Partnership Programme, from 2009–2011, was an initiative between the Department of Health, the National Cancer Action Team, NHS Improvement and the NHS Institute of Innovation and Improvement. Studies investigating gynaecology, urology and musculo-skeletal surgery were also included in these initiatives. Implementation and support for the development of ER continues nationally through NHS Improvement.

2. Enhanced Recovery

ER aims to reduce the physical and psychological impact of elective gynaecological surgery on the patient to facilitate a more rapid recovery, shortened length of stay^{5–7} and return to normal activity.⁸ Complication and readmission rates are comparable to, or better than those seen in the UK following conventional recovery.⁵

Involving the patient at every step of the process from decision to discharge is a fundamental part of ER. Informed decision making provides women with all of the information required with respect to treatment options, including surgery. Concerns about the shorter length of stay reducing patient access to information and education are unfounded. ER appears to give better patient satisfaction and better nurse satisfaction together with the reduced LoS.⁶ The implementation of ER is associated with improved quality of life following surgery, compared to traditional pathways.⁹

2.1. Preoperative

Formal preoperative risk assessment of the patient’s health and fitness for a surgical procedure should be timed to allow optimisation of any problems identified, this may reduce complications and mortality intra- and postoperatively.¹⁰ This process should start in the community prior to referral and continue in preadmission clinics and may require specialist input from anaesthetics or medical specialties. The

optimal place for immediate postoperative recovery should be determined and organised, this may require elective admission to intensive or high dependency care settings. Comprehensive verbal and written patient information ensures patients understand the pathway that they will follow, and the active part they play in their care. Preoperative patient education can reduce the need for pain relief¹¹ and improves patients' experience of the hospital admission.¹⁰ Procedure specific information and consent can greatly aid the information giving phase of the preadmission process. Patients should have the opportunity to discuss their operations and pain control with gynaecologists and anaesthetists respectively. The key role of specialist nurses in this process cannot be overstated. Day of surgery admission has become standard in units following the successful introduction of ER and realises significant cost savings.

Preoperative planning of the day of discharge is another key element of ER. Patient, relatives, carers and community agencies can ensure that the appropriate support is available for the planned discharge by ensuring information about length of stay following a procedure is provided.

2.2 Perioperative

On the day of surgery, dehydration is avoided by reducing the period of starvation to two hours for clear fluids prior to anaesthetic. The use of complex carbohydrate drinks in non-diabetic patients has been shown to be beneficial in colorectal surgery, reducing preoperative thirst, hunger and anxiety and postoperative insulin resistance.¹² This reduces length of stay and improves patient experience.¹³ Mechanical bowel preparation has time and cost implications and is unpleasant for patients. It is also associated with morbidity, and there is no evidence that it improves the outcome for colorectal patients having elective rectal surgery, in which bowel continuity is restored.¹⁴ The role of mechanical bowel preparation should therefore be investigated and reconsidered in gynaecology patients. Avoiding long-acting sedative premedication aids post operative mobilisation. All pathways of care should be appropriately evidence based and delivery of antibiotic prior to incision and thromboprophylaxis should therefore be included.

The use of minimal access techniques is strongly supported.^{15,16} An abdominal incision, when used, should be as small as possible to allow safe surgery. Routine use of nasogastric, abdominal and vaginal drains have limited benefit and should be avoided as they increase morbidity and prolong hospital stay.¹⁷⁻¹⁹ Avoiding the use of vaginal packs should be considered because they are uncomfortable and hinder, or potentially prevent, mobilisation. Due to the lack of evidence, a departmental approach to their use should be adopted to ensure consistency. Avoidance of intraoperative hypothermia reduces postoperative complications.²⁰ Goal directed fluid therapy intraoperatively using stroke volume to guide intraoperative fluid management has been demonstrated to reduce operative mortality and reduce length of stay.²¹ This is important for colorectal surgery because it reduces the risk of bowel hypoperfusion, but the role in gynaecological surgery is less clear. Reducing variation in anaesthetic protocols improves patient outcomes and promotes patient safety. Postoperative pain should be prevented and proactively treated as it increases the surgical stress response and prolongs recovery.²² Spinal, epidural and regional regimes reduce opiate requirements, improve patient satisfaction and are associated with a more rapid return to work.²³⁻²⁵

2.3 Postoperative

Early feeding and reducing the volume of routine intravenous fluid infusion is encouraged. This approach is safe and is associated with less nausea, shortened length of stay and higher patient satisfaction.^{26,27} Early mobilisation is key to ER. It counteracts the negative effects of bed rest; muscle loss and weakness, impaired pulmonary function and tissue oxygenation, increased insulin resistance,²⁸ and increased risk of thromboembolism. Mobilisation is encouraged by effective multi-modal analgesia regimens that reduce the use of systemic opiates because of their side effects that may include regional blocks. Regimens include anti-emetics to combat post operative nausea and vomiting and laxatives if required to treat constipation. Catheters, drains, vaginal packs and drips hinder mobilisation and so

should be removed as soon as possible. In addition, removing foreign bodies reduces the risk of developing associated infections. Women are at risk of developing short term voiding problems following pelvic surgery. Therefore, monitoring of voiding and post void residual checks should be carried out following catheter removal. This should avoid the long term irreversible voiding problems associated with over distension of the bladder.

2.4 Discharge

Discharge for ER patients is criteria based. Patients are discharged when they are mobilising, can control their pain by oral analgesia, passing flatus and are able to eat and drink. Women can be prescribed a softening laxative to take at home until their first bowel movement. When re-catheterisation has been required this should not delay discharge as women can go home with a catheter in situ to return for a trial without a catheter at a later date. Patients should be provided with written information on discharge that includes emergency contact information, practical advice to aid recovery and expected length of time until they return to normal function. Typically, there is no increase in readmissions or postoperative work for primary care.²⁹

3. Quality and Cost

There is little net investment required for the successful introduction of ER. ER releases beds for either increased activity or savings. Length of stay, readily available as Hospital Episode Statistic (HES) data³⁰ allowing interhospital comparison, is taken as a surrogate marker for quality of care as shorter stays suggest fewer complications and an engagement with ER methodologies.

Another marker of quality is patient satisfaction. These measures are collected by the NHS inpatient survey, questionnaires or patient diaries; patient feedback supports ER. To date there has not been a national increase in readmissions.³⁰ Readmissions should also be investigated locally and any issues that arise should be addressed. Reducing variation within departments and across Trusts will help with the quality agenda.

4. Implementation

Adopting ER may challenge current traditional practice. Successful implementation involves input and engagement and commitment from all stakeholders in primary, secondary and social care including high level clinical and management teams, for the change to be sustainable. To lead this change a core team of stakeholders or 'ER champions' should be identified. This is usually multidisciplinary, made up of surgeon, anaesthetist, specialist nurses and management. Their role is to understand the current service, identify and implement improvements to be made, deliver the changes, and measure the impact and feedback to the clinical team.

Education is important for the successful introduction of enhanced recovery as an example of a cross discipline, cross organisational service improvement. All members of the multidisciplinary teams across the pathway need to understand that their role is vital to the overall success of the approach. The use of locally agreed pathways and protocols based upon the ER pathway documentation can help significantly with introducing change and enable all staff to update themselves.

Baseline and ongoing data collection of both clinical and service evaluation outcomes is important to be able to demonstrate progress of implementing ER and its impact on the service. There is a national ER audit tool to assist with this and it enables benchmarking against other sites.

Guidance on implementation is available in the document 'Delivering Enhanced Recovery' published by the NHS Enhanced Recovery Partnership Programme.³¹ Further support is available for Trusts considering implementation from each SHA and NHS Improvement. Information and resources for patients and clinicians is available on the NHS Improvement website.³²

ER offers high quality, cost effective care pathways that improve outcomes for patients. These principles represent common ground for those providing and those commissioning care pathways and should form the basis of discussions. Commissioners of care have an opportunity to aid the spread and sustainability of ER by ensuring ER practices are embedded in the clinical pathways they commission.

5. Further research and developments

ER brings together many individual elements forming a complete pathway of care for patients undergoing surgery from the decision to refer from general practice, right through to recovery following surgery. Many of the elements aim to improve patient experience and the quality of information provided to patient about the care that they will receive. Other elements concern the structure of the surgical pathway; links from primary and social care to secondary care, and improvements to preparation for surgery services. There are also changes to the clinical management of patients. Some of these embed safety measures such as venous thromboembolism (VTE) and antibiotic prophylaxis. Others introduce new elements to clinical management which challenge traditional dogmatic practice with approaches based on evidence. Examples of such elements are; the reduction in the recommended time for starvation prior to surgery, the preoperative use of complex carbohydrate drinks, avoidance of bowel preparation and nasogastric tubes.

It would be difficult to design randomised controlled trials (RCTs) of pathways that do not contain ER elements versus a fully implemented ER pathway. It will remain important to evaluate individual elements of these pathways in order to continually improve them. These should include both the organisational, clinical and patient experience aspects of the pathways. For some elements, such as the reduced fasting time or avoidance of bowel preparation, there is strong evidence from RCTs already. Other elements where the evidence is lacking, for example the use of vaginal packs, are best evaluated by an RCT. Whilst RCTs remain the gold standard, it will also be appropriate to consider other research methodologies.

ER leads to improved patient satisfaction, less variation in patient care, shorter length of stay, and a reduction in complications and readmissions. The ER model offers the opportunity to improve the care of emergency gynaecological admissions. Implementing ER in obstetrics may be a challenge. Whilst ER would fit perfectly in the pathway for the elective caesarean section, there is little experience incorporating support of the newborn and the establishment of breast feeding into ER.

6. Opinion

The main elements of ER offer safe, high quality perioperative care and should become standard practice for all women undergoing elective gynaecological surgery (Appendix 1). The approach offers opportunities to benefit both patients and the NHS through savings from reduced complications and decreased length of stay. These benefits can be sought by:

- Physically and psychologically optimising the patient through preoperative assessment, helping them to plan and prepare before admission.
- Preoperative discharge planning to overcome socio-domestic factors that may impede early discharge.
- Reducing the physiological stress of the operation by changing to a laparoscopic approach for hysterectomy to reduce length of stay and short term postoperative mortality.
- Taking a structured approach to peri- and postoperative management by reducing the variation in care using ER within a department to reduce use of high dependency beds, complications and length of stay.
- Ensuring patient involvement at every step of the process from decision to discharge helps them to feel informed, involved, motivated and have an improved experience overall.

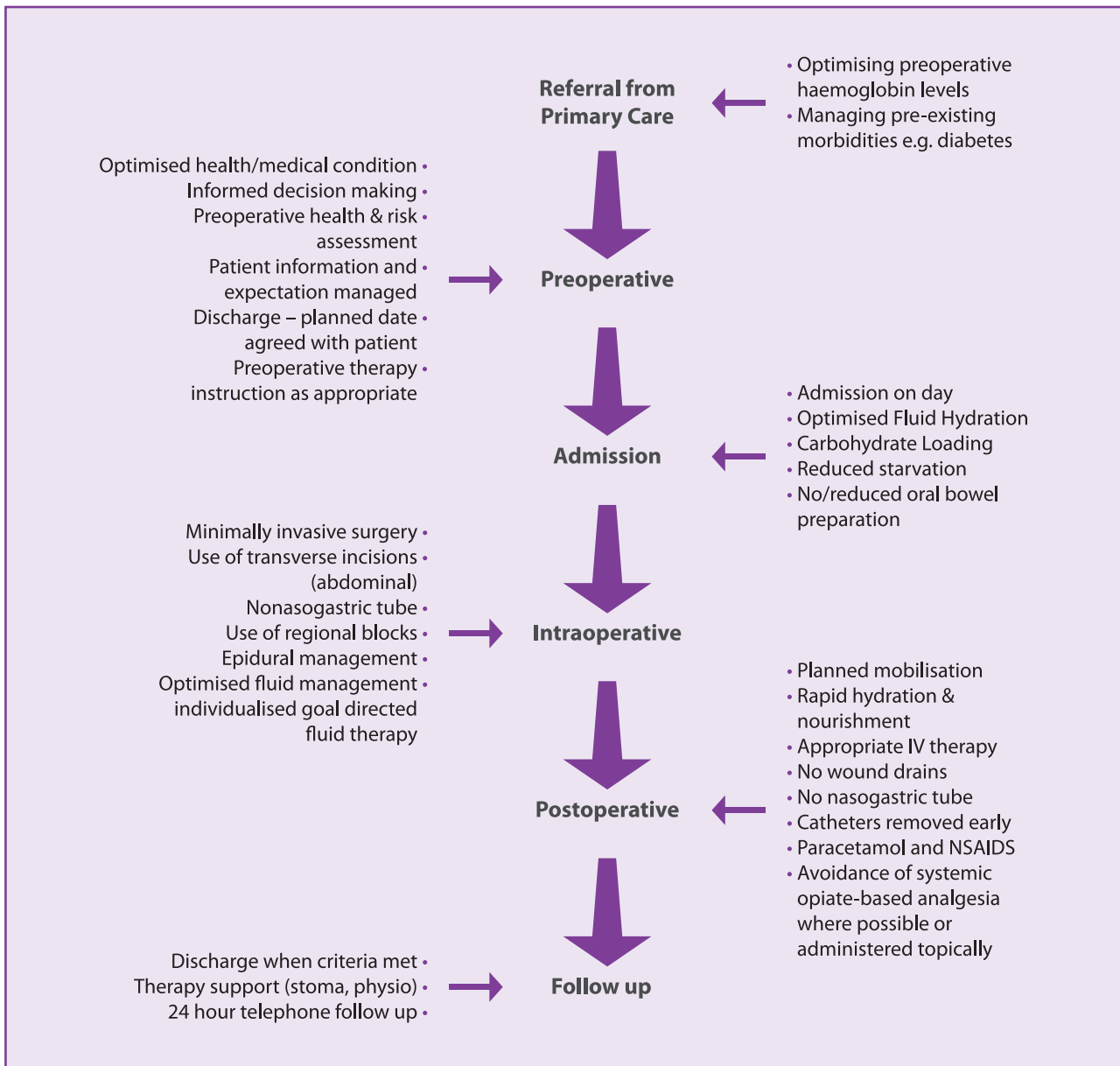
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Appendix 1

Example of Enhanced Recovery Element



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