

Recovery programme for patients undergoing an anterior resection



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The topic I have chosen for my project is the Enhanced Recovery Programme (ERP) for patients undergoing elective colorectal surgery, and whether this aids with early discharge from hospital. I shall discuss traditional pre and post operative assessments alongside the one used for ERP. I will also discuss each of the seventeen modals used within ERP and how when it is used collaboratively can aid with early discharge. I will also discuss any complications that arise from ERP and traditional surgery and if there is any difference to the patient. Within the conclusion, I will discuss the findings and any way of gaining additional knowledge and skills.

I will undertake a comprehensive search of literature using the cinhal, pubmed databases and reading literature that is available within the university library. I will use quantitative research to analyse my data and incorporate this and any further learning into my conclusion.

During the last four years of my training, I have developed a keen interest in colorectal surgery and this is something I would like to expand on when I become a qualified nurse. I have nursed a lot of patients on the Enhanced Recovery Programme, but I have never looked into this at any great length and I wanted to see if this had any benefit to the patient or even whether it truly did mean early discharge from hospital.

In the early part of the 1990s, surgery underwent a drastic change it went from using long lasting anaesthetics to shorter fast acting ones. Combining the new anaesthetics and analgesic methods together with new surgical techniques, a new surgical pathway was created and this seems to have shortened the post operative recovery period. This means that patients could

be taken out of main operating theatres as they didn't need as much recovery time. Minor surgical cases were moved to smaller day stay units (Apfelbaum 2002). The term for this new pathway was called fast tracking. Recovery times for patients on the fast track programme were considerably shorter in comparison to those patients that were not. Arguments were brought up to justify the use of fast track surgery such as reduce the nurse's workload, reduce hospital costs and improve patient care by getting them back to their preoperative condition more quickly (Watkins 2001). The expansion of fast track meant that more surgical procedures were being performed as day cases. The expansion of the fast track concept to colonic surgery was pioneered by Henrik Kehlet, a surgeon of the Hvidovre University Hospital in Denmark. He stated that of 60 patients who underwent a colostomy on the fast track programme, 59 required a hospital stay of two days.

In 2001 Enhanced Recovery after surgery (ERAS) group was formed, it was their job to look into the case mix, clinical management and clinical outcomes of colorectal patients. What they found was that in Denmark, the length of stay was considerably shorter than Edinburgh, Sweden and Norway who were practicing care that is more traditional. The length of stay within Denmark was 2 days and the other 4 had an average stay of between 7-9 days (Nygren 2005).

With the experiences of Denmark in mind, ERAS group developed a new evidence based concept that was holistic in its approach.

There are 17 key elements to the Enhanced Recovery Programme (ERP) (appendix1). The 17 elements can be divided into 3 facets Preoperative, Intraoperative and Post operative. Each one of these facets is evidence based and only when they are used collaboratively in elective surgery do they produce a paradigm shift on how we manage our patients. The concept of ERP is to increase patient satisfaction and decrease patient complications.

A patient preparing for traditional open bowel surgery used to be prepared in pre-operative assessment for a stay in hospital of around 14 days (Rickard et al 2004); Enhanced recovery patients are being prepared for a stay in hospital of 5 days (Elwood 2008).

What ERAS did was to discover that there is a gap between evidence and practice, one of the consistent findings in health service research was what should be done according to scientific evidence and best clinical practice (Bodenheimer 1999). Improving the quality of care increases the amount of patients that are seen each year. This is because the right things are being done in a timely and organised fashion.

Preoperative

The effectiveness of the Enhanced Recovery Programme (ERP) depends on changing the patient's outlook on their hospital stay. Encourage patients to believe that a shorter stay in hospital is a viable option. Department of Health (2009) states that the enhanced recovery uses evidence based interventions both pre and post operative.

It is well established that stress levels rise when faced with the prospect of surgery but this concept has recently been challenged by Fearon K (2005a) in which he suggests that elements of the stress response can be reduced or even eliminated with the application of modern anaesthetic, analgesic and metabolic support. The ERP relies heavily on a multi professional approach involving all members equally.

Tradition was that doctors gave the pre assessment teaching. But due to time constraints on the consultants, this was often rushed due to the amount of other patients that needed to be seen and not all patients' questions were answered. The introduction of nurse specialist pre assessment clinics helped alleviate some of the pressure, and the atmosphere was more relaxed and the nurses understanding of the programme made it easier for patients to follow (Crenshaw, Winslow 2002).

It is essential that all patients are well prepared for the operation, not just for a check on their physical condition but also their psychological needs.

Looking after the patients psychological needs is an important part of the enhanced recovery programme as it helps reduce the stress of surgery.

Patients are counselled on the important parts of the enhanced recovery programme such as early mobilisation and diet resumption. Screening for malnutrition will also take place at this appointment it should include weight, height and the body mass index should be calculated and any unintentional weight loss should be calculated use of the malnutrition universal screening tool (MUST) should be used (appendix 2). It is also reasonable to discuss

discharge at this point. A patient being diagnosed with any disease is hard enough to deal with but then to be told you need an operation.

Obtaining consent is a vital component to the success of the programme. Gaining consent is more than signing a bit of paper (Department of health 2009). Consent must be given freely and without coercion. All the facts must be given about the treatment and any risks should be discussed.

The core ethical principle according to royal college of nursing (2004) is respect for the individuals' rights. Gaining consent is a legal requirement.

As a nurse the NMC (2008) states that, we are accountable for our own actions so we must ensure consent is obtained before any procedure is carried out. Some patients may not wish to know all the facts if this is the case the consultant in charge of the patients care should document this in the patients medical records, and all healthcare professionals should adhere to this. Patients are encouraged to bring in their own clothes so they are not sitting around in bed all day. Patients with disabilities or who may require more help are also identified at this visit.

It is explained in the pre assessment what is expected of the patient after surgery. Clarke (2005) suggest that only forty two per cent of day surgery patients in the UK are currently offered a pre-assessment visit, within my own personal experience a pre assessment appointment is well advised, as this gives the patient time to ask any questions and alleviate any last minute fears. This part of the ERP has not changed from the preoperative counselling for traditional surgery. The preoperative assessment is a critical component of ERP as it gives patients autonomy over their own care.
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One of the main principles of the enhanced recovery care is that bowel preparation is avoided as this can cause dehydration and electrolyte imbalance particularly in the older patient (Burch, J. 2009) a point that is also raised by Holte (2004a) he also goes on to state that bowel prep can also be very stressful. The trust that I am placed only one of the consultants uses bowel preparation usually in the form of an enema as these help prevent post operative constipation and contamination of the surgical area by faeces and is only ever used if a stoma formation is not required. Bowel preparation is still used for traditional surgery with oral sodium phosphate being the most convenient method. However concerns were raised that by not giving bowel preparation this could cause problems post operatively, but these fears have not surfaced (Holte et al 2004b). A recent study by Guenaga (2005) suggested that giving oral bowel preparation can cause anastomotic leaks, and may cause wound infections and possibly death.

Nil by mouth after midnight originated in 1946 when reports suggested that a higher risk of pulmonary aspiration existed among patients that had general anaesthesia that had not fasted. Reassessment of this tradition began in the 1980's where numerous studies failed to demonstrate that fasting ensured that the stomach would be empty (Crenshaw, Winslow 2002). Also noted was patients that had prolonged fasting would complain of headaches, dehydration, hypovolemia and hypoglycaemia. As a result, in 1999 American Society of Anaesthesiology developed guidelines that support a more liberal preoperative fasting protocol.

The original belief of nil by mouth (NBM) from midnight before surgery is still widely adopted for some surgical procedures and is still applied to some <https://assignbuster.com/recovery-programme-for-patients-undergoing-an-anterior-resection/>

elective cases (Maltby 2006). Consumption of oral fluids up to 2 hours prior to surgery is known to reduce post operative vomiting without any adverse effects, contrasting with patients that are starved normally prior to surgery (Khojratty, Bhavik, Ravichandran 2010). There are several elements of the programme that are important, one element is the careful use of fluids, traditional surgery uses too much (Burch 2009). It is documented that hyperglycaemia increases diabetic complications, in a study by Nygren et al (1999) also found that patients that weren't Diabetic had the same amount of glucose within their blood work as patients with type2 diabetes.

Patients on the enhanced recovery programme are given two clear carbohydrate drinks to take: 800mls is taken the night before surgery, 400mls is to take with breakfast (Grover 2010) this reduces the preoperative thirst and hunger but it also reduces post operative insulin resistance, therefore patients are in a better anabolic state to benefit from post operative nutrition, The Carbohydrate drink consists of 12.6g of complex carbohydrate in the form of Maltodextrin Nygren et-al (2006). Having these carbohydrate drinks is the equivalent of having 2 roast dinners. A patient on a morning list must not eat after midnight but can have clear fluids until 3am. In contrast, consumption of an appropriate mixture composed of water, minerals and carbohydrates offers some protection against surgical trauma in terms of metabolic status, cardiac function and psychosomatic status. Oral intake shortly before surgery does not increase gastric residual volume and was not associated with any risk of aspiration.

For normally nourished patients restoration of gastrointestinal (GI) function is one of the primary goals of post operative care. A recent study by Khojratty, <https://assignbuster.com/recovery-programme-for-patients-undergoing-an-anterior-resection/>

Bhavik, Ravichandran (2010) found that many of their patients voluntarily fasted longer than was given in the written instructions this is not advisable as this can cause post operative complications and can delay the healing process. This was also noted by others (Baril& Portman 2007). Food and drink is a basic need and is needed to sustain life and aid with the healing process.

A patient will routinely have a catheter inserted on the operating table and close monitoring of Urine output is vital, minimum output per hour is usually 35mls if it reduces then the team should be called because understanding fluid management is vital for the ERP to work. Intravenous fluid will have been prescribed avoiding normal saline and ideally stopping after 24hours (Billyard et al 2007).

Fluid balance charts are vital as 60% of a male's body weight and 55% of a female's body weight is made up of water and electrolytes; one third of this fluid is extracellular (ECF) and two thirds intracellular (ICF). A reduction of 5% in total will result in thirst and thus considered to be mild dehydration (Welch 2010). Inadequate fluid intake or fluid loss can also cause dehydration.

Patients who have had major abdominal surgery will have some fluid loss.

With reference to preoperative and post operative patients Intravenous fluid on traditional surgical patients were given 3. 5 to 5l of intravenous fluid on the day of surgery (Tambyraja et al 2004) however recent studies have found that providing no more fluid than is necessary to maintain fluid balance (for example a patients body weight), as this reduces post operative complications thus reducing a patients stay in hospital (Brandstrup et al

2006). For more traditional surgery the patient would normally be on <https://assignbuster.com/recovery-programme-for-patients-undergoing-an-anterior-resection/>

restricted oral intake but this is not the case with ERP so monitoring intake is vitally important.

Poor urine production can lead to renal failure and electrolyte imbalance. Monitoring fluid balance is important because as nurses we need to carefully monitor a patient's input and output, as poor monitoring can lead to poor outcomes.

The hourly catheter bag is changed to a leg bag on day 1 after the operation to make it easier for the patient to mobilise but strict fluid balance must be maintained (Burch J 2009). This should include stoma output if a patient has had a stoma. The catheter is usually removed on day 2 post operatively as long as there are no post operative complications and strict output is still monitored. While fluid balance charts are a good and useful tool for monitoring fluid balance they are only as accurate as the data recorded on them, another good way of monitoring fluid loss or gain is to weigh a patient, as 1000mls is equivalent of 1kg any rapid weight gain can be directly related to a change in fluid status.

The detrimental effects of fluid imbalance can be life threatening, therefore the importance of strict monitoring and accurate recording can not be stressed enough. Nursing staff of all levels should strive to complete fluid balance charts as fully and as accurately as possible.

Traditional surgery required starving a patient the day before surgery. When a patient returned from theatre they were not allowed to eat until the Surgeon could hear normal bowel sounds and sometimes this may not happen for 4-5 days post operatively. So a patient could be starved of
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anything to eat and drink for as long as a week. A patient undergoing colorectal surgery may already be malnourished and the complications following surgery are greatly increased. Malnutrition can affect every tissue, muscle and organ within our bodies it can also have an affect on our psychosocial welfare (Todorovik 2003). National Institute for Clinical Excellence (2006) state in their nutritional support in adults that malnutrition is usually caused by physical factors. A recent study into nil by mouth versus early feeding found that of 837 patients that met with inclusion criteria found that early feeding reduced the risk of any type of infection although the risk of vomiting was increased (Lewis, et al 2001).

Patients on the programme are encouraged to drink and eat straightaway if they feel like it. Usually sips of water are offered and if tolerated they are offered nutritional supplements to drink, usually one about an hour after surgery, if this is tolerated then another will be given and left for the patient to drink at leisure (Fearon 2005b), Billyard (2007) contradicts this and states: the patient should drink at least 2L including three nutrition drinks on returning to the ward. Once a patient can tolerate fluids without vomiting or feeling nauseous, they can progress on to solid foods usually something light.

A concern for surgeons was post operative ileus (POI). POI is a well recognised consequence of any abdominal surgery and is frequently experienced by patients, Leir (2007) states that it is not a life threatening complication but is a costly post operative complication. POI is defined as a “transient impairment of intestinal motility after abdominal surgery” (Han-

Geurtz et al, 2007). There are many factors that have shown to increase its progression such as

Local intestinal inflammation

Anaesthetic Agents

Over hydration

Post operative analgesia(opiates)

Reduced mobility.

POI along with nausea and vomiting are the most common complication.

POI can be minimised with the use of epidurals. Scoop et al (2006) stated: that mid-thoracic epidural is considered the pinnacle of the enhanced recovery programme. Although it is possible to use Patient Controlled Analgesia (PCA), Morphine can increase the risk of vomiting it can also cause the bowels normal peristaltic movement to temporarily paralyse.

Recent research in to POI and the different approaches to treatment found by giving a patient chewing as a form of “ Sham feeding” (making the body think it was eating) helped with gut motility. Schuster et al (2006) found that gum was an inexpensive and of some benefit after colostomy formation.

Five randomised trials of chewing gum to restore the natural gut motility found that patients who were chewing gum passed flatus 24% earlier and had bowel movement 33% earlier, which shows a significant and positive conclusion of early discharge which on average 17. 6% earlier than those

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that did not have the chewing gum (Chan and Law 2007). POI is usually diagnosed with symptoms of nausea and vomiting along with abdominal distension, pain and the failure to pass flatus or faeces. Parnaby et al (2009) found although flatus and faeces were passed earlier in patients who chewed gum it did not have any bearing on early discharge or post operative complications. If tachycardia is present then other causes should be excluded. The treatment for POI is inserting a nasogastric tube (NG) although one is inserted during the intubation process during surgery it is removed as soon as the surgeon has finished operating because there is good evidence to suggest that leaving a NGT in place can cause pneumonia (Cheatham et al 1995).

Once a diagnosis of POI has been made, all oral intake should discontinue, and the patient should be removed from the programme and the traditional approach should commence. Patients are encouraged to take regular anti emetics to aid the patient with early return of oral intake the trust that I work cyclizine is the anti emetic of choice.

Post operative pain is always a concern this is why Professor Kehlet designed the ERP because he believed every patient deserved to have a pain free recovery. For patients to understand pain nurses need to be able to educate the patient. Biggs (2009) states that less than 1% of university education is spent on pain and the effects of pain. It is vital that nurses have an understanding of pain physiology in order to educate our patients and in turn increase patient's knowledge and reduce anxiety, increasing patient satisfaction.

Regular pain assessments should be maintained at rest and on movement by a competent nurse (DH2009). It is stated by Vickers et al (2009) that pain should be classed as the “ Fifth Vital sign”. In postoperative patients on ERP, it is vital that nurses monitor pain because pain can reduce a patient’s motivation for all the other parts of ERP.

Concerns have arisen about the use of thoracic epidurals as the analgesia of choice due to immobility and urinary retention, but if inserted high enough in a thoracic position it is possible to mobilise safely and with fewer side effects such as constipation, this means that opiates which have an adverse effect on the bowel can be avoided and again this can facilitate to an earlier discharge. 1 gram of paracetamol is given 4 times a day and is given in conjunction with PCA or epidural, this is also part of multimodal approach. Also, the afferent nerves are blocked resulting in less stress response less gut paralysis and a decreased risk of pulmonary complications (Jorgenson et al 2000).

The epidural dose is reduced 48 hours after surgery, and once epidural is running at 2mls per hour then a trial without epidural should commence and pain reassessed after 1 hour if minimal or no pain then commence co codamol 30/500 every 6 hours and oral Non Steroidal Anti Inflammatory Drug (NSAID) diclofenac 50mg every 8 hours (British National Formulary, 2009) with this in mind the consultant can prescribe a mild laxative for patents as this will avoid constipation although this is not the case where stoma formation occurs. Alternatively, at the anaesthetists request oral paracetamol 1g 6 hourly may be given also diclofenac 50mgs 8 hourly and 10-20 mgs of Oxynorm every 2-4 hourly. As a nurse I am aware of the <https://assignbuster.com/recovery-programme-for-patients-undergoing-an-anterior-resection/>

importance of pain management within the ERP because psychologically a patient in pain will not feel like eating, or mobilising so keeping on top of pain by using trust pain charts and ensuring that pain relief is delivered on time helps reduce anxiety. In theory, there is nothing stopping nurses from giving paracetamol or co-codamol every 4 hours during the day as making the patient comfortable will aid sleep meaning that paracetamol or co-codamol will not be needed between midnight and six in the morning, it also means that extra pain relief may not be needed thus reducing post operative complications. On saying all of this post operative pain is believed to be at its worst directly after surgery and the intensity is expected to diminish over time (Buyukilmaz et-al 2010), the World Health Organisation analgesic ladder (2007) is used in reverse for surgical patients. on return from surgery patients, initial observations should be taken by the trained nurse so she has a baseline to work with. All further observations should be meticulously maintained as per any hospital policy.

The use of Bair huggers during surgery has reduced the incidence if hypothermia during the operation it is important to maintain a constant core temperature as it was found that all of the anaesthetics used during operations caused hypothermia also there are several non pharmacological reasons that warrant the use of Bair huggers for example shaving the surgical site (Sessler and Akca 2002). Wound infection is a serious and costly complication. During colorectal surgery, the incidence of wound infections increases to 10%. Ikeda et al state that all incidences of wound infections occur during the first two hours of any surgical procedure. The primary connection between hypothermia and surgical site infection (SSI) is

vasoconstriction because of a decrease in tissue oxygenation and if a patient is immunosuppressed which most colorectal patients are this can also cause SSI. Blood loss during surgery can increase the risk of SSI due to blood transfusions during surgery. On return to the ward from recovery the nurse in charge of the patient must ensure that the wound site is checked for bleeding and check the dressing for any sign of strike through the nurse would expect to see some excess on the dressing but it should be regularly monitored so any problems can be found early. Port sites where a patient has had laparoscopic surgery should be checked. When a stoma has been formed, the nurse should look at the site making sure it is pink/red in colour and it is warm and there is no excessive bleeding. Wound infections can delay discharge so any problems should be found early reported to the patients team and the correct antibiotics can be prescribed early and may only delay discharge by 2-3 days.

Anti thrombotic prophylaxis is a must within colorectal surgery; treatment is usually commenced the evening following surgery and continued on a small maintenance dose of 40mg of enoxaprim (Dylan 2010) until the patient has regained full mobility. There are no further advantages in general surgery for extended use of enoxaprim but there are advantages for patients undergoing orthopaedic surgery. Associated use of low dose heparin and continuous use of epidural analgesia is open for discussion as there have been reported cases mainly in the United States of epidural haematomas (Tryba 1998). A patient undergoing stoma formation under ERP pathway can have their discharge delayed due to teaching, on how to care for the stoma. Although pre-operative teaching does occur, the reality often does not sink in

until after the operation. The stoma nurse specialist will see the patient on the day after the operation. The patient returns with a clear see through bag so nursing staff can see when the stoma becomes active. Teaching begins at the bedside where the patient may only want to observe the proceedings, but all of the time the stoma nurse actively encourages the patient to take note of the proceedings. Psychologically the patient may need lots of reassurance as to them this is not natural (Rust 2007). A patient with a stoma should plan for a stay in hospital between 5 -10 days and it usually takes this long for a patient to be able to manage their stoma. To become self caring with a stoma is the patient's biggest psychological battle (Bekkers et-al1996). So on my understanding of the research available stoma formation does infact delay discharge by four days depending on the patient and his/her ability to manage.

Patients are not always proactive recipients of care (Ellwood 2008). Early Mobilisation is important to reduce complications such as chest infections. Chest infection rates have dropped from 4% to less than 2% this is because patients are not laying in bed for days.

Bed rest not only increases insulin resistance it also decreases muscle tone and in addition, there is an increased risk of thromboembolism. On the ward, the physiotherapist has a book which nurses can refer patients and patients should be seen on day 1 following surgery.

Patients are encouraged to sit in the chair for two hours on the day of surgery to encourage deep breathing (Francis 2008). A care plan should be formulated with a specific mobilisation plan incorporated. It is essential that

a patient should be nursed in an environment that encourages early mobilisation.

Anti embolic stockings are also prescribed. The stockings facilitate venous return from the lower extremities. They also provide venous thrombosis. As nurses, we should make sure the patient is lying down as this allows the veins to relax. The stockings should be removed at least once a shift, so that the nurse can inspect the patients legs and feet for any signs of redness as the skin around the heel can break down very quickly. Encourage leg exercises every hour during the day. Muscle contractions compress the veins, preventing a clot. Contractions also promote arterial blood flow.

The introduction of the enhanced recovery nurse has been invaluable not only for the patients but also for staff. The role of the ERP nurse (ERP) is fundamental to the programme as she/he co-ordinates patient care from the beginning. The ERP works freely within the colorectal team seeing patients in clinics. He/She helps the patient through their hospital admission reinforcing the goals and liaising with hospital ward staff. ERP works closely within the surgical team, colorectal cancer team and stoma nurses.

The biggest challenge for the ERP was changing the practice of nursing staff on the wards repeated teaching sessions with all new nurses and doctors with regular feedback and all new updates to the programme (Elwood 2008). Unfortunately, within the trust I am placed the already busy colorectal cancer team initiate all of the teaching, ERP has become a large part of the daily schedule within the trust that a need for an ERP nurse is deemed necessary and funding for the post has become available.

Although regular care pathways and protocols are in place, an integrated care pathway was drafted but due to increased pressure from our consultants the document was abandoned, and deemed unworkable but after reviewing the evidence it seems to be used within most other trusts that incorporate the ERP as part of their surgical planning.

Nursing interventions within the ERP can influence the out come so it is important that the nurse looking after the patient has the most up to date knowledge and skills and able to detect when a patient's condition deteriorates.

Another useful tool is a patient diary so that the patient can keep a record of when they got up so the patient is aware of when they can get back into bed. On the first day of surgery, the Patient should aim for 2 hours and then 6 hours until discharge (Fearon et al 2005). Patients are encouraged to walk 60 meters from day one post operatively.

To enable continuity of care nurses need to consider the clients needs for assistance within the home.

Discharge planning begins even before the patient comes into hospital; the process is usually started at pre admission clinic. The nurse will take a full social history; this is obtained so nursing staff on the ward are aware of any social problems.

Fearon et al (2005c) stated that patients are fit for discharge after the following criteria has been met

Have good pain control with oral analgesia

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Are eating solid food and no Intravenous Fluids

Are independent with all ADLs

And willing to go home

All patients should be discharged with an information leaflet including a telephone number of the ward in case they have any problems. In some of the trusts, an enhanced recovery nurse specialist post has been created and on discharge, the ERPN will telephone the patients on the programme at home to allay any fears and to check that there are no post operative complications. a telephone helpline has been set up at one London hospital so that patients can have direct contact with someone during out of hours and they are hoping that this will reduce the amount of A&E admissions. The ward I worked on would refer all patients on the ERP to the district nurse with first visit being on the day of discharge, making sure that the referral form states that the patient is currently on ERP. Patients can telephone the ward if problems occur within the first 24 hours. Because patients on ERP are discharged earlier, this means that potentially serious complications can occur at home for example anastomotic leaks (King et al 2006). Therefore, it is important that patients have a port of call once they are home and within the community setting. The need for support at discharge is also unlikely, compared to a patient who has traditional open surgery

Readmission rates for patients on ERP shows that from 1998-2008 334 patients of which 99 (30%) were on ERP and 235 were not (Larsson et-al 2010). The 99 on ERP tolerated soft diet approximately 2.5 days earlier than those not on ERP and were discharged at least 2 days earlier from hospital.
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Recent research done by 2 Doctors searching the colorectal cancer data base for the trust found; ERP has reduced the length of stay by 3 to 5 with no change in mortality or readmission, the best results came from a gynaecology ward where the nursing staff followed the ERP care pathway in its entirety.

Conclusion

Traditional Perioperative procedures and prac