The All Wales Enhanced Recovery after Surgery Collaborative

Final Report
October 2013

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1. **Executive Summary**

Whilst people are generally living longer, they also tend to suffer more co-morbidity. However, with the on-going advance in surgical therapies, surgical outcomes are good overall. Yet, there is still evidence of a lack of consistency in delivery of surgical care across the UK. The NCEPOD report (2011) also suggests that post-operative adverse events may be much more frequent than many appreciate and that the consequences of these complications are considerable – medically, psychologically and financially.

In September 2010, the All Wales Enhanced Recovery after Surgery (ERAS) Programme was launched, supported by 1000 Lives Plus, with the aim of optimising the recovery of patients undergoing major surgery.

ERAS attempts to modify the physiological and psychological responses to major surgery. It is a paradigm shift in care and actively promotes the adoption of evidence-based best practices for every patient all of the time. The scope of ERAS covers all areas of the patient’s journey. The basic principles include ensuring the patient:

- is in the best possible condition for surgery
- has the best possible, evidence-based and standardised, management during and after his/her operation
- experiences the best possible rehabilitation, has an optimal recovery and a timely discharge from hospital allowing them to return to their normal activities as soon as possible

Two years since the inception of the programme it is clear that health boards in Wales have achieved a great deal to implement the evidence-based approach of ERAS to improve outcomes and reduce lengths of stay for patients undergoing colorectal surgery and joint replacement.

Whilst these changes are encouraging, progress between Health Boards, adherence to the ERAS bundles and data collection is variable. In some Health Boards, it is apparent that they have lost momentum and need to rethink their strategy.
It is evident that greater progress has been made where there is strong Executive and Clinical Leadership. Those Health Boards who have made the greatest progress have also adopted and adapted the ERAS principles for other surgical specialities.

There is little evidence of active primary care engagement and organisations are not routinely demonstrating a ‘joined up’ and standardised approach to improving surgical care.

Agreeing a standardised approach, for the same surgical procedure, between surgical teams has also proved problematic in some hospitals.

Overall, although the programme made a good start, there is still work to be done to ensure both clinicians and managers understand the benefits of standardising care using the best evidence available. Despite the compelling evidence, custom and practice still appears to take precedence when trying to introduce changes that directly impact the behaviours of others.

In particular, process measurement appears to be a concept and approach that people find difficult to achieve. Without robust measurement and analysis of processes and outcomes it is difficult to identify where practice can be improved. Although time was spent at the outset of the programme conveying the importance of measurement, organisations have found it difficult to integrate this into normal work practices.

In short, standardising the surgical preparation and treatment processes using available evidence will improve patient outcomes (and often experience) whilst also offering greater service efficiencies. ERAS embodies such standardisation and should be implemented more widely.
2. Introduction

This report is an amalgamation of a report that was produced by Dr Rachael Barlow in June 2013 and an interim report produced by Professor Susan Fairlie in December 2012.

The purpose of this report is to provide an assessment of how the ERAS programme progressed in Wales; to identify the successes and areas that could have been improved.

The report is intended for those with an interest in NHS Wales including Welsh Government, the Health Boards, clinicians and managers.

Interim Report (December, 2012)

The purpose of the interim report was to review progress, provide further support, advice and information as appropriate on improvement methods, team structure and relationships, data gathering and presentation / use.

The report reflected the findings from the initial diagnostic phase of the work and it was anticipated that it would inform the next phase of support. It was originally intended that this work would continue throughout 2013.

All participating Health Boards were asked what further support they required and when no requests were forthcoming the second phase of support from a national perspective ceased.

Albeit, there is still a drive to further roll out the principles of ERAS and the Welsh Government have a developmental target in place to further promote the approach.

Final Report (June 2013)

The purpose of the final report was to provide greater detail regarding the background to the implementation of ERAS throughout NHS Wales. In particular, it focussed on the evidence base, offered some outcome data and an assessment of the progress at the conclusion of the second year.
3. Background

In Wales, as elsewhere, people are living longer and are generally suffering more co-morbidity. Despite this, with the on-going advance in surgical therapies, surgical outcomes are good overall, with risk of death reported to be less than 1% for all surgical patients in the same hospital admission\(^1\). However, this still equates to over 2,000 patients a year who die following surgery\(^2\). In the UK, there is a reported lack of consistency in delivery of surgical care, especially amongst the elderly and high-risk patients. This contributes to adverse outcomes. The NCEPOD report (2011) also suggests that post-operative adverse events may be much more frequent than many appreciate and that the consequences of these complications are considerable – medically, psychologically and financially.

In their editorial in the British Medical Journal Urbach and Baxter suggested, “the immediate challenge to improving the quality of surgical care is not discovering new knowledge, but rather how to integrate what we already know into practice.”\(^3\) This statement sums up the message contained within the ERAS programme to standardise care around the best available evidence.

In September 2010, the All Wales Enhanced Recovery after Surgery Programme was launched, supported by the 1000 Lives programme.

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\(^1\) National Confidential Enquiry into Patient Outcomes and Death (NCEPOD), Knowing the risk: a review of the peri-operative case of surgical patients (2011)

\(^2\) 1000 Lives plus. www.1000 lives plus.

4. What is Enhanced Recovery after Surgery (ERAS)?

The focus of ERAS is to improve the quality of care provided to patients who undergo major surgery. The evidence suggests that harm will also be reduced ultimately leading to an improved outcome for the patient. Hospital stay will become more efficient, thereby allowing Health Boards to realise the benefits of fully implementing the programme.

ERAS is a multimodal care pathway\(^4\) designed to achieve optimal recovery for patients undergoing major surgery. These programs attempt to modify the physiological and psychological responses to major surgery\(^5\).

It is a paradigm shift in care as it firstly encourages the examination of the traditional practices of peri-operative management and actively promotes the adoption of evidence-based best practices. The scope of ERAS covers all areas of the patient's journey. The basic principles include ensuring the patient:

- is in the best possible condition for surgery
- has the best possible management during and after his / her operation
- experiences the best possible rehabilitation
- has an optimal recovery and a timely discharge from hospital allowing them to return to their normal activities as soon as possible

The key factors that keep patients in the hospital after surgery include the need for parenteral analgesia, the need for intravenous fluids secondary to gut dysfunction, bed rest and poor nutrition. The central elements of the ERAS pathway address these key factors, helping to clarify how they interact to affect patient recovery. Whilst all the strategies impact individually to benefit patient care, to achieve maximum benefit all elements i.e. a curtailed pre-operative fasting, with carbohydrate loading, pre-emptive analgesia, early post-operative mobilisation, timely nutrition and fluids post-operatively should be aggregated and delivered to all patients.

In addition, the ERAS pathway provides guidance to all involved in perioperative care, helping them to work as a well-coordinated team to provide the best care.

Use of the ERAS pathway has been shown to,\(^6\),\(^7\):
- reduce care time by more than 30% and
- reduce postoperative complications by up to 50%

It is important to state that the expedited discharge seen with ERAS is not about lowering the threshold for discharge standards for patients, but about fulfilling the discharge criteria in a timely fashion, by seamless care, good communication and co-ordinated systems.

The majority of the published literature on ERAS is in colorectal surgery. A meta-analysis published in 2012, of seven RCTs (852 patients)\(^8\), concluded that length of stay with ERAS was significantly reduced, but importantly concluded that morbidity rates were also significantly reduced. This is a clear message of the impact of ERAS on patient safety.

The Association of Surgeons of Great Britain and Ireland (ASGBI) guidelines\(^9\) support the concept of adoption across all elective surgical specialties, but also support the application of ERAS elements in the emergency and unscheduled care situation. Although in emergencies, implementation of the pre-operative components may not always be possible, every effort should be made to implement as many components as possible.

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5. **Aims of the All Wales Enhanced Recovery after Surgery Programme**

The programme had four aims:

- To improve the quality and safety of the care of all colorectal surgical patients by using the principles of ERAS across Wales irrespective of their postcode.
- To re-design the systems in place for delivery of surgical care to reduce harm, improve the patient flow and ultimately drive down costs.
- To promote improvement methodology across surgical teams in Wales.
- To promote sharing of best practices and knowledge amongst clinicians and teams across Wales for the benefit of the patients we serve.

The specific yearly objectives were:

<table>
<thead>
<tr>
<th>Year One</th>
<th>Year Two</th>
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<tbody>
<tr>
<td>- Implement all bundles with the exception of the primary care bundle in major colorectal patients in at least one site per Health Board</td>
<td>- Implement all bundles for major orthopaedic surgical patients in at least one site per Health Board</td>
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<td>- Collect data to demonstrate improvement and test of change</td>
<td>- Collect data to demonstrate improvement and test of change</td>
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<td>- To share and spread best practice across Wales through the development of an All Wales ERAS collaborative ensuring pace of change and adoption.</td>
<td>- Consolidate the Colorectal ERAS and improve sustainability and efficiency of the service</td>
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<td>- Improve education and training of staff</td>
<td>- Spread ERAS colorectal care bundle methodology to other hospital sites within health boards</td>
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<td>- Incorporate training of ERAS to healthcare students</td>
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6. Programme Delivery

6.1 Collaborative Methodology
The All Wales ERAS programme was based on an evidence-based clinical change model that has been adapted to suit the needs of the healthcare system in Wales. This model has been successful in delivering demonstrable improvements in patient care in the Safer Patients Initiative (SPI), the 1000 Lives Campaign and the Welsh Critical Care Improvement Programme (WCCIP).

The three elements of this approach are:

I. an evidence-based patient pathway, simplified into a Driver Diagram of interventions by Welsh healthcare professionals, to ensure a fit with the national context
II. a national campaign underpinned by a breakthrough collaborative project structure to support teams in achieving changes
III. Use of the ‘The Model for Improvement’, developed by Associates in Process Improvement, which is used extensively by the Institute of Healthcare Improvement (IHI)

6.2 Engagement
Clinical engagement was central to the implementation of ERAS across NHS Wales. This was a clinically led programme. A ‘working group’ consisting of colorectal and upper gastrointestinal surgeons, consultant anaesthetists, dieticians, nurses and physiotherapists, met to discuss how to develop an All Wales ERAS programme. Dr Rachael Barlow led the group.

The Medical Director of NHS Wales (formerly Dr Stephen Hunter and latterly Dr Chris Jones) supported the development of the All Wales ERAS programme and wrote to Royal Colleges and Associations detailing the work and asking for support. 1000 Lives plus adopted the ERAS programme as one of their collaborative programmes.

All teams working in colorectal surgery across Wales were invited to join the All Wales ERAS programme. Invitations to attend the launch of the collaborative at the first learning session
were circulated through the Chief Executives of the Health Boards and NHS Trusts in Wales. Invitations were also sent directly to all colorectal surgeons, and key contacts working clinically in each of the colorectal units.

6.3 The Collaborative Bundles

As discussed, ERAS is a multi-modal, evidence-based approach to improving the care the patient receives by redesigning the patient pathway, using a selected number of individual interventions which, when implemented as a group, demonstrate a greater impact on outcomes than when implemented as individual interventions. The ERAS mini-collaborative adopted a “Care Bundle” approach. Care bundles have been advocated by the Institute of Health Improvement (IHI)\(^\text{10}\) and are often referred to as ‘High Impact Changes’ to drive the change in patient care required.

The key drivers or interventions are evidence based and considered to have the highest impact on patient outcome following surgery. They were grouped together and performed for every patient. An example of a Driver Diagram is shown as appendix 1.

To comply with a particular bundle, all the interventions within the bundle must be performed. By monitoring how the care bundles are delivered, clinical and managerial teams gain a better understanding of what is working well and where improvements can be made.

It is important to remember that ERAS requires the building of a multidisciplinary team that crosses organisational and functional boundaries, it is about the entire pathway of care, from home back to home again.

For the All Wales ERAS Collaborative, the drivers and interventions were grouped into the following bundles:

a. Pre-operative assessment Bundle

b. Intra-operative Bundle

\(^{10}\) IHI.org accessed June 2010
c. Post-op Bundle  
d. Discharge and follow-up Bundle  

A primary care bundle was developed and discussed at the beginning of the ERAS programme with the Directors of Primary Care across Wales. It was decided this element should be evaluated independently to determine the impact. This has yet to take place.

The detail behind each of the bundles can be found in the ERAS ‘How to Guides’. They can be accessed at http://www.1000livesplus.wales.nhs.uk/eras

6.4 Outcome measures  
Process compliance with each bundle was measured in order to determine where to focus any improvement effort. Achievement of >95% compliance over six data points in each bundle is an indication that reliable implementation had been achieved.

Compliance audit and variance analysis of the care pathway was undertaken and patient feedback was collected using a “patient diary”.

Length of stay data provided an objective outcome. However, it is sometimes true that delays in discharges often reflect social and housing issues and do not entirely explain the clinical picture.

6.5 How to Guides  
In order to support ERAS implementation, resources and support material was developed and shared via the website (http://www.1000livesplus.wales.nhs.uk/eras). This included ‘How to Guides’, a database for both specialities to monitor local implementation, process and outcomes measures and multi-disciplinary learning events. Local team support was also delivered by the national Clinical Lead and Programme Managers through site visits.

6.6 Steering Groups  
Each Health Board established a steering group. The All Wales Clinical Lead attended these meetings, which aided the sharing of knowledge across Wales. Most steering groups were chaired by a member of the executive team.
The All Wales ERAS Steering group was established in July 2010; these meetings were Chaired by Dr Chris Jones, Medical Director NHS Wales. The initial membership is listed as appendix 2. The meetings allowed high-level decision making across all Health Boards, including partners and considered the strategic direction of the programme as a result of direct discussion with Welsh Government via Dr Chris Jones. The steering group typically met quarterly.

6.7 Welsh Government ‘Invest to Save’ Scheme
This fund supported the introduction of new and / or proven ways of working so that public services become more efficient and effective. Investments made from the fund are repayable but there are no interest charges and there is flexibility on the payback period. This approach ensures that the fund is sustainable and available for investment in new projects in the future.

The grant was suggested as a lever to launch the All Wales ERAS programme by Richard Bowen (Director of Operations, Welsh Government, December 2009) and Dr Stephen Hunter (former NHS Wales Medical Director). Three of the Health Boards in Wales used this scheme to launch their ERAS programmes.

In Wales, it was anticipated that the first phase in all major colorectal patients would result in an estimated bed day saving of 8,395 beds across Wales per annum. This was based on reducing length of stay by 50%. It is unclear as to whether this level of saving has been achieved.

It was considered that adoption of ERAS principles across gynaecology, urology and musculoskeletal surgical specialties would also have a radical effect regarding the way services could be delivered; improving quality whilst maximising efficiency and adding value for money.

6.8 Learning Sessions
The launch of the ERAS programme was in September 2010. This focus was colorectal surgery, with a pilot of Upper Gastrointestinal surgery to take place in Cardiff and Vale
University Health Board. In total 10 colorectal units were represented from across Wales. All Health Boards had a strong representation at learning sessions, with core members of the clinical teams attending alongside management representation.

The events allowed clinicians to debate and update the evidence base and also to inform colleagues of programme progress across sites in Wales. The events were also addressed by a variety of speakers with a range of expertise and backgrounds from across Wales and the UK.

Over the two-year period a total of eleven learning events were held for both colorectal and orthopaedic.

In June 2011, the ERAS orthopaedic collaborative was launched. Velindre Trust and Powys Health Board attended when relevant for their needs. This was due to limited surgery taking place in these Health Boards.

Overall, these Learning Sessions were evaluated positively by those who attended and were seen as a vital part of the teams’ successes.

6.9 Data
A scoping exercise amongst surgeons and subsequent discussion with the All Wales Steering Committee, prior to the launch of the programme demonstrated that there was no national consensus on an outcome measure (i.e. length of stay, morbidity) definition. It was therefore considered of little use to attempt pre-programme baseline measurement of Average Length of Stay (ALoS) across colorectal units.

The All Wales colorectal audit and CANISC cancer data sets were deemed incomplete to obtain the relevant data required. Some units did agree a local ALoS starting point consensus at baseline for internal financial purposes, however there was discrepancy between clinicians and management in a few instances.
It was decided that process data would be collected and analysed by daily measurement of individual patients, to determine unit level, Health Board and national compliance with the care bundles. Actual length of stay would be tracked over time, to determine any overall improvements.

6.10 Monitoring Compliance
The systems for collection of the process data on compliance with the care bundles were developed by the individual units and therefore contained some variation in approach. However, there were several common features. In all but one unit the system was paper based and relied upon the bedside nurse ensuring that a paper form was completed on a daily basis.

Bundle elements were ticked as completed, signed if not completed and reasons for exclusion from the bundle recorded. Bundle compliance was ‘all or nothing’ in that patients were only considered compliant if all elements of the bundles had either been performed or a reason had been given for not doing so. Daily compliance for the total of all eligible patients upon that unit was recorded.

6.11 Database
NLIAH /1000 lives plus developed an excel database. This was tested and amended to ensure good local agreement. Once agreement was obtained, the database was issued to sites. Training and support was given by the 1000 Lives Plus team along with the Clinical Lead to ensure understanding and adherence.

Nominated individuals were responsible for data entry, cleansing and submission. The database then generated reports giving mean monthly compliance with the care bundles for each unit.
7. Current Situation across Wales

After two years of work supported by 1000 Lives Plus, it is clear that some health boards in Wales have achieved a great deal to implement the evidence based approach of ERAS to improve outcomes and reduce lengths of stay for patients undergoing colorectal surgery and joint replacement.

Whilst these changes are encouraging, progress between Health Boards, adherence to the ERAS bundles and data collection is still variable.

In all Health Boards, there is evidence of enthusiastic and committed individuals driving the process forward but generally there is less evidence of a whole team approach. Where most success is noted enthusiastic consultant anaesthetists are central to the care of the patient both pre-operatively, intra-operatively and post-operatively.

In the Health Boards with obvious Executive and clinical leadership and engagement, progress is more noticeable but there is still little evidence of active engagement of the Medical Director with their respective ERAS programmes. This may be a contributory factor in why medical consensus has not being achieved around standardisation of approach.

There are some particularly good examples of improved patient involvement and education and in joint replacement; the use of Joint School, or similar education packages, has proved valuable.

There is little evidence however, of measurement driven improvement. Data collection is patchy with some clinicians ‘picking and choosing’ which parts of the bundle they will use. This is because there is disagreement within and between Health Boards about which interventions actually make a difference and certain elements of the evidence base has been called in to question.

Many staff felt that their work was not always recognised by their Health Board and they rarely receive feedback on the data and reports that are submitted.
The communication cascade from 1000 Lives Plus to frontline staff is variable – it was reported that information that is sent to clinical leads is not always received by staff.

There is still little evidence of active primary care engagement.

At this time of austerity it is particularly challenging to deliver some of the changes promoted by ERAS. Many of the elements within the Care Bundles have a cost associated with them, whether that is a staff cost, such as additional therapy, or a non-staff cost such as ‘doppler’ probes or carbohydrate loading drinks, making implementation more difficult. However, certain Health Boards have demonstrated a return on their initial investment and these should be used as exemplar sites for other Health Boards to examine.

Initial Health Board executive engagement was via the finance directors as details and figures for the ‘pump priming’ invest to save grant were agreed. In hindsight, this changed the emphasis of the ERAS programme from quality improvement to one of financial scrutiny. This set challenges from the outset for the successful delivery and engagement across the health boards to deliver. Much work was subsequently required to change the mindset of Health Boards and to ensure the focus for teams was on quality improvement and patient safety. A positive outcome would deliver the financial benefits required. However, in some areas, these obstacles were eventually overcome by clinicians, managers and finance colleagues all working together.

In sites where the adoption of ERAS is the ‘way we do business’ it is clear that the successful implementation of the bundles has improved overall outcomes; in those sites, this is allied with an overall reduction in lengths of stay for patients and has allowed reconfiguration of bed occupancy and realignment of services.

Some sites report a reduction in Length of Stay approaching 50%. This is most noticeable for orthopaedic patients. However, it is apparent that in some sites the principles have not been adopted by other surgeons in the specialty.
In sites that have adopted ERAS there is still work left to do to standardise the care of all patients to ensure equity across individual Health Boards and across Wales.

The reduction in the length of stay could be further improved if there was a system wide shift to Day of Surgery Admission (DoSA). However, this requires a Health Board wide approach with strong managerial and clinical engagement and commitment.

Some sites are offering DoSA seamlessly, but this is dependent on a rigorous pre-operative assessment and anaesthetic assessment prior to admission. This is often the rate-limiting step in DoSA delivery.

ERAS is a strategic priority for the Welsh Government as outlined in the NHS Wales Delivery Framework 2013-2014 and Future Plans. Therefore executive leadership and monitoring within each Health Board of ERAS delivery, will surely promote the widespread adoption of ERAS. However, it is essential that ERAS is not seen as a box ticking exercise, but a clinical, evidence-based, quality improvement strategy, that requires all elements to be delivered to benefit the patient.

The newly updated ‘How to Guides’ are based on the emerging evidence cited in the current literature. More published data from other specialities that have adopted the principles will further strengthen the case for adoption, the weight of evidence eventually convincing most sceptics.

It is clear that the enhanced recovery elements are common to all surgical patients. Further work is required from a national perspective to share best practices and promote widespread adoption of ERAS principles across all sectors; both scheduled and unscheduled care. There is also no reason why the core ‘values’ of ERAS could not be adapted for utilisation in acute medicine and oncology care to optimise outcomes.
8. **Lessons Learnt from the All Wales Enhanced Recovery after Surgery Programme**

Whilst strong clinical and executive leadership is crucial, the success of ERAS relied on local champions to drive ERAS principles at the patient level and to ensure the bundles are being adhered to. Flagging any challenges to management for discussion and resolution in a timely fashion was essential.

Local Health Board level ERAS meetings are essential to ensure all partners are around the table. Representation from Board, management, finance and all clinical teams hastens change.

On-going education, sharing of learning and clinical multi-disciplinary team meetings are key enablers to the embedding process and sustainability. Fora such as these provide the platform where good work can be recognised and motivation can be fostered through engagement with the whole team.

Data collection can appear to be particularly daunting. However, it is essential to clearly identify from the outset the data collection requirements and arrangements to avoid the onerous task of retrospective data collection.

Patient and user involvement is essential to shape the ERAS programme. Key Stakeholder involvement was essential and will continue to be so. The Cancer Networks, Royal Colleges and Association were invaluable.
9. **Recommendations**

Medical and Nursing Directors should be encouraged to have closer links with ERAS in their respective organisations. ERAS is an evidence-based approach with proven positive outcomes for patients and its principles should be embedded in surgical care.

Surgical Specialty Clinical leads should work towards consensus with their colleagues and then confirm the agreed ERAS pathway to be used within their organisation.

Some Health Boards would benefit from a reminder of the case for change, including financial modelling as well as examples of the infrastructure and approach used by the more successful Health Boards; for example, how to establish / maintain an effective team based improvement process.

There should be engagement with higher education institutions to ensure ERAS principles are interwoven in curriculum content and teaching. Education of future students is essential to promote the sustainability of the future ERAS work.

Promoting the adoption of ERAS principles into other surgical modalities, including the management of the patient with a fractured neck of femur, would help realise further benefits.
10. Conclusion

There is no doubt that promoting and sustaining change is hard. The All Wales ERAS programme has delivered great successes but there is still plenty of room for improvement.

In order to ensure that the gains made to date are not lost, and that teams feel that their hard work is recognised, greater executive and senior clinical leadership should be encouraged within each Health Board. Medical Directors in particular, should be encouraged to have closer links with their programmes.

Since November 2010, the ERAS programme in Wales has improved the care delivered to surgical patients in Wales. Teams have worked hard to engage and implement the core elements of the Bundles. Nevertheless, more work must be done to ensure further improvement, consistency and reliability.

Strategies are required to infiltrate across all surgical specialties across Wales. All patients irrelevant of their postcode should receive all elements of the ERAS programme to optimise their recovery and outcomes. Only when the term ERAS is not required will the program have been a success.
11. Acknowledgments

Acknowledgments and thanks go out to all of the many individuals, clinical teams, organisations, patient groups, Royal Colleges and Associations for their continued advice and valuable contribution to the ERAS programme:

- Welsh Government
- 1000 Lives plus
- Cancer Networks
- Royal College of Surgeons
- Royal College of Anaesthetists
- Royal College of Nursing
- Association of Surgeons of Great Britain and Ireland
- Royal College of General Practitioners
- British Dietetic Association
- Chartered Society of Physiotherapists

A special thanks to the Enhanced Recovery All Wales Steering Committee:

- Dr Rachael Barlow
- Dr Alan Willson
- Mr Alan Woodward
- Dr Chris Jones
- Mr Colin Ferguson
- Mr Wyn Lewis
- Dr Richard Davies
- Dr Gareth Parry
- Rachel Lewis
- Marilize du Prez
- Clare Tregidon
- Carole Berger
- Iris Williams
Appendices

Appendix 1: ERAS Driver Diagram for Bowel Surgery

Enhanced Recovery After Surgery
Driver Diagram (abdominal surgery)

**Content Area**
- Improve outcomes for people undergoing major surgery

**Drivers**
- Assessment Care Bundle - maximising physical and functional status
- Immediate Care Bundle - Maximising physical and functional status whilst preparing patient for surgery
- Intra-operative Bundle - Reducing the stress response to surgery and promoting homeostasis
- Post-op Bundle - Patient centred and goal orientated specialist care following surgery
- Discharge and follow-up Bundle - Timely discharge planning that supports the patient in a safe discharge and monitors care post-operatively to detect potential complications

**Interventions**
- Nutritional screening
- Optimisation of nutritional status
- Monitoring and optimisation of Haemoglobin
- Management and optimisation of Pre-existing co-morbidities
- Physiotherapy assessment
- MDT assessments/referrals
- MDT ERAS care pathway commenced
- Patient education
- Anaesthetic assessment; CPx testing
- Nausea and vomiting prophylaxis
- Optimal anaesthesia and anaesthetic (limit/avoid opioid usage)
- Limit usage of drains, IIG Tubes and catheters. Promote Laparoscopic approach
- Goal directed fluid therapy
- Carbohydrate loading pre-operation
- Avoid bowel preparation (where appropriate)
- Encourage post-operation nutrition
- Mobilisation within 6hrs post operatively if practical
- Optimise gut function
- Appropriate analgesia, aim for oral analgesia for discharge home
- Optimal fluid balance and daily weights
- Early enteral or oral nutrition within 12 hours of surgery
- Predicted Date of Discharge achieved by the patient
- Discharge needs confirmed with family/social services following surgical intervention
- Patient follow up post discharge
- Appropriate MDT follow up post discharge
## Appendix 2: ERAS Steering Group membership

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<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Organisations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neil Agnew</td>
<td>Consultant Anaesthetist</td>
<td>Betsi Cadwaladr University Health Board</td>
</tr>
<tr>
<td>Barry Appleton</td>
<td>Consultant General and Colorectal Surgeon</td>
<td>Abertawe Bro Morgannwg University Health Board</td>
</tr>
<tr>
<td>Rachel Barlow</td>
<td>1000 Lives Plus ERAS Joint Clinical Lead</td>
<td>Cardiff University</td>
</tr>
<tr>
<td>Carole Berger</td>
<td>ANP for Eras</td>
<td>Aneurin Bevan Health Board</td>
</tr>
<tr>
<td>Sue Beckman</td>
<td>Associate Director Delivery and Support Unit (Orthopaedic)</td>
<td>DSU/National Orthopaedic Board</td>
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<tr>
<td>Fransesca Creighton Griffiths</td>
<td></td>
<td>Royal College of Surgeons</td>
</tr>
<tr>
<td>Peter Cnudde</td>
<td>Orthopaedic consultant</td>
<td>Hywel Dda Health Board</td>
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<tr>
<td>Kathryn Davies</td>
<td>Director of therapies</td>
<td>Hywel Dda Health Board</td>
</tr>
<tr>
<td>Mr Mike Davies</td>
<td>Colorectal Surgeon</td>
<td>Cardiff &amp; Vale University Health Board</td>
</tr>
<tr>
<td>Ron Evans</td>
<td>BCU patient Representative</td>
<td>Betsi Cadwaladr University Health Board</td>
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<tr>
<td>Mike Fealey</td>
<td>Programme Lead</td>
<td>1000 Lives Plus</td>
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<tr>
<td>Karen Gully</td>
<td>Senior Medical Officer</td>
<td>Welsh Government</td>
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<tr>
<td>Dean Harris</td>
<td>Consultant</td>
<td>Abertawe Bro Morgannwg University Health Board</td>
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<tr>
<td>Chris Jones</td>
<td>Deputy Chief Medical Officer/1000 Lives Plus ERAS Steering Group Chair</td>
<td>Welsh Government</td>
</tr>
<tr>
<td>Tim Jones</td>
<td>Clinical Practice &amp; Development Lead</td>
<td>Welsh Ambulance Service NHS Trust</td>
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<tr>
<td>Umesh Khot</td>
<td>Consultant Colorectal &amp; Laparoscopic surgeon</td>
<td>Abertawe Bro Morgannwg University Health Board</td>
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<tr>
<td>Sarah Lawrence</td>
<td>ERAS Service Improvement Facilitator</td>
<td>Betsi Cadwaladr University Health Board</td>
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<td>Rachel Lewis</td>
<td>Dietitian</td>
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<td>Betsi Cadwaladr University Health Board</td>
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<td>Cwm Taf Health Board</td>
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<td>Dougie Russell</td>
<td>Clinical Director – MSK (Orthopaedic)</td>
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<td>Helen Shannon</td>
<td>Dietitian</td>
<td>Aneurin Bevan</td>
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<td>Abertawe Bro Morgannwg University Health Board /BUPA</td>
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<td>Karen Vaughan</td>
<td>Service Improvement Project Manager</td>
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<td>Clare Walters</td>
<td>Divisional Nurse (Scheduled Care)</td>
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<td>Clinical Fellow</td>
<td>Cardiff &amp; Vale University Health Board</td>
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<td>Iris Williams</td>
<td>Colorectal specialist nurse</td>
<td>Hywel Dda Health Board</td>
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<tr>
<td>Alan Willson</td>
<td>1000 Lives Plus Director/1000 Lives Plus ERAS Joint Lead</td>
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<td>Alan Woodward</td>
<td>1000 Lives Plus ERAS Joint Clinical Lead/Cons. Surgery</td>
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<tr>
<td>Brian Yate</td>
<td>Consultant anaesthetist</td>
<td>Hywel Dda Health Board</td>
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Appendix 4: Programme awards and recognition

- Dr Rachael Barlow and Marilize du Preez won the Advancing Health care UK award for their leadership and development of the All Wales ERAS programme. March 2012.

- Cardiff and Vale Health Board won the NHS Wales award for Colorectal ERAS in July 2012.

- A very successful conference was held in City Hall, June 2012 hosted by the Royal College of Surgeons in Wales. Over 140 delegates attended the one day event included several from across the UK. Abstracts were submitted which highlighted the extent of the ERAS work across Wales at all levels.

- Dr Rachael Barlow was invited to speak at several UK wide meetings. She is also a member of the Faculty for ERAS UK.