



## Enhanced Recovery Partnership

# FULLFILLING THE POTENTIAL

## A BETTER JOURNEY FOR PATIENTS AND A BETTER DEAL FOR THE NHS



ENHANCED RECOVERY

LESS DRIPS AND DRAINS

INVOLVED IN DECISIONS ABOUT YOUR CARE

SHORT ACTING ANAESTHETICS

EARLY WALKING AFTER SURGERY

EARLY AND AFT

ANTI SICKNESS PLAN

TELEPHONE CONTACT AFTER GOING HOME

SMALLER WOUNDS OR KEYHOLE SURGERY

Published on behalf of the Enhanced Recovery Partnership by NHS Improvement



“  
**Enhanced recovery  
pathways lead to  
better outcomes and  
improve the patient  
experience.**”

**John McGrath**

Consultant Urologist, The Royal Devon  
and Exeter NHS Foundation Trust and  
Enhanced Recovery Partnership  
Clinical Lead

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# FOREWORD

## Enhancing recovery: becoming the norm

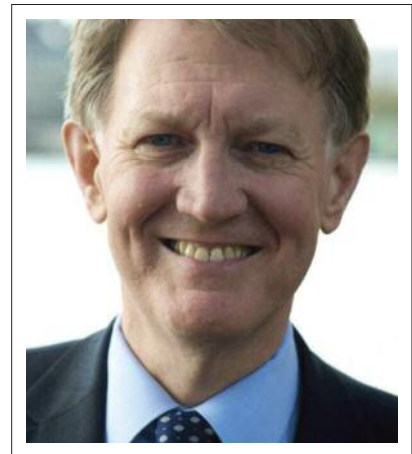
I am not a surgeon, but I fully recognise the central importance of surgery both as a treatment for cancer and for many other conditions. I have also observed over my professional lifetime how much the outcomes of surgery have improved. These improvements have resulted from the introduction of new techniques (such as laparoscopic or minimally invasive surgery), from better training and from greater specialisation especially for complex procedures.

Twenty-five years ago it was standard practice for patients undergoing any form of surgery for breast cancer to stay in hospital for 10 days. For some time now the simpler breast procedures have been undertaken as day cases.

More recently still, it has been demonstrated that almost all breast cancer surgery including mastectomies (but excluding breast reconstructions) can be done as a day case or with a single overnight stay. This radical change has now been spread across the country with support from NHS Improvement – with major benefits for patients and for the NHS.

We are now witnessing a similar revolution with regard to other major surgical procedures. For example, patients undergoing colorectal cancer surgery would in the past typically have stayed in hospital for 10-14 days.

Through the introduction of enhanced recovery patients are now recovering much more quickly and can be as fit and ready for discharge after four or five days as their predecessors would have been at least a week later. Implementation of enhanced recovery across the NHS represents an excellent example of Quality, Productivity, Innovation and Prevention (QIPP) in practice. It is an innovative approach to clinical care bringing quality benefits for patients across a range of specialties and better productivity for the NHS. We know from work to date that lengths of stay can be reduced without an increase in emergency readmissions. The Enhanced Recovery Partnership also provides an excellent means of spreading good practice regarding optimisation of fluid management technologies during surgery - a key commitment in Innovation Health and Wealth Review (2011).



**Professor Sir Mike Richards CBE**  
National Cancer Director

Our challenge now is to ensure that all patients who can benefit from this approach do so and as soon as possible. *'Fulfilling the potential: a better journey for patients and a better deal for the NHS'* shows how this can be achieved.

A handwritten signature in black ink, which appears to read "Mike Richards". The signature is fluid and cursive.

**Professor Sir Mike Richards CBE**  
National Cancer Director and Chair of  
the Enhanced Recovery Partnership

# INTRODUCTION

Change is hard. However, the Enhanced Recovery Partnership Programme demonstrated our capacity in the NHS to change. In just two years, from May 2009, enhanced recovery pathways have been established in the vast majority of NHS hospitals in England. Now, in 2012, enhanced recovery for surgery is becoming standard practice. Length of hospital stay has dropped to target levels set down at the launch of the Enhanced Recovery Partnership Programme, without increase in readmissions and with high levels of patient satisfaction.

The Enhanced Recovery Partnership Programme that ran until May 2011 was undoubtedly a great success but there was still plenty of room for improvement. There had not been total adoption as some groups were taking a more cautious approach or a 'wait and see' stance. This is why the Enhanced Recovery Partnership is still actively driving further improvements to support the spread and adoption of enhanced recovery as best practice. The energy and enthusiasm of the early adopters is infectious and their results speak for themselves.

There is continued support from the Department of Health and clear backing from the Royal Colleges. So can we expect complete adoption soon? A better published evidence base and more effective collection and reporting of outcomes will undoubtedly help to achieve this goal.

We know that commissioners want to commission pathways that improve outcomes and support their local QIPP plans. We hope that this publication will provide all health professionals and importantly commissioners with an overview of the benefits of enhanced recovery as best practice. Commissioners are part of the team and are important to enhanced recovery for its continued implementation and sustainability.

We have seen the spread of enhanced recovery pathways to many surgical specialties beyond the original four main areas of colorectal, gynaecology, orthopaedics and urology. There is now a serious move to adoption of similar principles in acute medicine as is already happening in other countries in Europe

Successful adoption and application of enhanced recovery pathways will result in more empowered patients and a better functioning team, with increased bed capacity, fewer postoperative complications and an overall reduction in hospital costs.

The future delivery of medical care will need to focus, not only on the development of innovative treatments, but on reducing the levels of stress associated with the delivery of in-patient care. The enhanced recovery pathway provides an evidence-based means of achieving this within an increasing number of surgical and medical subspecialties.

**Monty Mythen,**  
Professor of Anaesthesia and Critical Care, University College London Hospitals and National Enhanced Recovery Partnership Clinical Lead

**Alan Horgan,**  
Consultant Colorectal Surgeon, The Newcastle upon Tyne Hospitals NHS Foundation Trust and National Enhanced Recovery Partnership Clinical Lead

### DID YOU KNOW?

**The Enhanced Recovery Partnership membership includes: Department of Health, NHS Improvement, National Cancer Action Team, Advancing Quality Alliance, National Enhanced Recovery Clinical Leads and Advisors, NHS Improvement Associates, SHA Enhanced Recovery Leads and Patient Advisors**

EVIDENCE  
BASED CARE

ENHANCED  
RECOVERY

LESS DRIPS  
AND DRAINS

INVOLVED IN  
DECISIONS  
ABOUT YOUR  
CARE

## SECTION I ARE YOU GETTING THE MESSAGES ABOUT ENHANCED RECOVERY?

The evidence base for enhanced recovery is clear and continues to be strengthened with the ongoing spread and adoption of the pathway across the country.

### ENHANCED RECOVERY IS FOUNDED ON FOUR WORKING PRINCIPLES



1. **All** patients should be on a pathway to enhance their recovery. This enables patients to recover from surgery, treatment, illness and leave hospital sooner by minimising the physical and psychological stress responses.



2. **Patient preparation** ensures the patient is in the best possible condition, identifies the risk and commences rehabilitation prior to admission or as soon as possible.



3. **Pro-active patient management** components of enhanced recovery are embedded across the entire pathway; pre, during and after operation/treatment.



4. Patients have an active role and take responsibility for enhancing their recovery.

### DID YOU KNOW?

- Enhanced recovery (ER) was developed in Copenhagen by Professor Henrik Kehlet and has been used in the UK since the early 2000s
- ER can be used with laparoscopic or open surgery
- ER is an integrated care pathway that takes a multi-modal, evidence based approach to optimise the patients recovery.

## ENHANCED RECOVERY MAKES A DIFFERENCE

- Enhanced recovery (ER) is common sense
- In simple terms, it improves the quality of care, and supports patients to get better sooner after major surgery
- It improves the delivery of care, reduces complications, improves the patient experience, reduces unnecessary lengths of stay and makes efficiency gains for Trusts
- In addition to the quality improvements, enhanced recovery makes a significant contribution in reducing morbidity translating into real cost savings.

### ENHANCED RECOVERY IMPROVES THE QUALITY OF CARE.

“Clinical commissioning groups have an opportunity to take responsibility for the improvement of care quality.”

**Paul Zollinger-Read**  
HSJ, 15 March 2012

### Enhanced recovery messages are instantly recognisable...

<p><b>A best practice care pathway with a compelling evidence base</b></p>	<p><b>Patient partnership at the heart of the pathway</b></p>	<p><b>ER minimises the stress patients go through</b></p>
<p><b>Patient preparation is the key</b></p>	<p><b>ER involves a number of components, when implemented as a group demonstrates a greater impact than individual parts</b></p>	
<p><b>Patients get better sooner, fitter sooner and return home sooner, returning to normal life, work and play</b></p>		<p><b>Access and equity in care... age is not a barrier</b></p>
<p><b>ER is an excellent example of QIPP in practice</b></p>	<p><b>ER supports the spread of innovation as an integral part of the pathway e.g. intra-operative fluid management technologies<sup>1,2,3</sup></b></p>	
<p><b>ER is the right care pathway - fewer complications, better outcomes, cost effective and better patient experience = key outcomes for commissioners</b></p>		<p><b>ER is one solution that supports many priorities, locally and nationally<sup>4</sup></b></p>
<p><b>Two choices of best practice - day case or enhanced recovery</b></p>	<p><b>The clinical case for ER being standard practice for all patients and representing good care is clear</b></p>	

<sup>1</sup> CardioQ-ODM oesophageal doppler monitor: Medical Technology guidance 3, National Institute for Health and Clinical Excellence (March 2011)

<sup>2</sup> NHS Innovation, Health and Wealth: Accelerating Adoption and Diffusion in the NHS (2011)

<sup>3</sup> National Confidential Enquiry into Patient Outcomes and Death, Knowing the risk: a review of the peri-operative case of surgical patients (2011)

<sup>4</sup> NHS Evidence Oesophageal Doppler-guided fluid management during major surgery: reducing postoperative complications and bed days (2011) [www.evidence.nhs.uk/QIPP](http://www.evidence.nhs.uk/QIPP)

**THE WIDER APPLICATIONS AND OPPORTUNITIES FOR ENHANCED RECOVERY**

The National Enhanced Recovery Partnership (ERP) has focused on specific areas of surgery namely colorectal, major joint, urological and gynaecological surgery. It is clear that the enhanced recovery principles and components are common to all surgical patients (Figure 1 on page 9).

The ERP is now exploring with clinical teams the transferability of the principles and components into other areas including; emergency surgery, vascular, AAA, oesophago-gastric, lung, liver, pancreatic and caesarean sections. Some teams are already testing in these areas with early indications of good results.

**CASE STUDY**

**Enhanced recovery in oesophagogastric surgery**

**Dr Michael Scott**, Consultant in Anaesthesia and Intensive Care Medicine Department of Anaesthesia. Royal Surrey County Hospital

The whole team (surgeon, anaesthetists, ICU nurse, dietician, physiotherapist and manager) visited a unit in Seattle known for the best outcome for oesophagectomy in world. The Surrey team adapted the Seattle pathway to include the elements of enhanced recovery such as; early mobilisation, nutrition, exercise and the Seattle team adapted our goal directed fluid therapy! Although early days, the first 12 patients has seen a reduction in length of stay from 18 days to six or seven days.

**CASE STUDY**

**Abdominal aortic aneurysm repair**

**University Hospitals of North Staffordshire NHS Trust**

The principles of enhanced recovery are being tested in the field of vascular surgery. Using the open abdominal aortic aneurysm repair procedure as a pilot, the Trust have developed a pathway which aims to reduce the length of inpatient stay in hospital as well as improving quality by providing additional discharge support.

The length of stay for this group of patients was 7 to 11 days. The redesign of the pathway aims to achieve a five day inpatient stay. Patients will receive a follow up telephone call service, two week open access to the surgical assessment unit, as well as access to a 24 hour dedicated enhanced recovery helpline on discharge.

**CASE STUDY**

**Enhanced recovery and breast reconstruction**

**Oxford University Hospitals NHS Trust**

Oxford University Hospitals NHS Trust undertook a survey of all UK centres performing breast reconstruction surgery to define current UK practice with respect to the preferred anaesthetic technique, the peri- and post-operative approach to thermoregulation, haemodynamic monitoring, fluid therapy, transfusion practice and analgesic strategy and demonstrated that there is huge national variation in UK<sup>1</sup>.

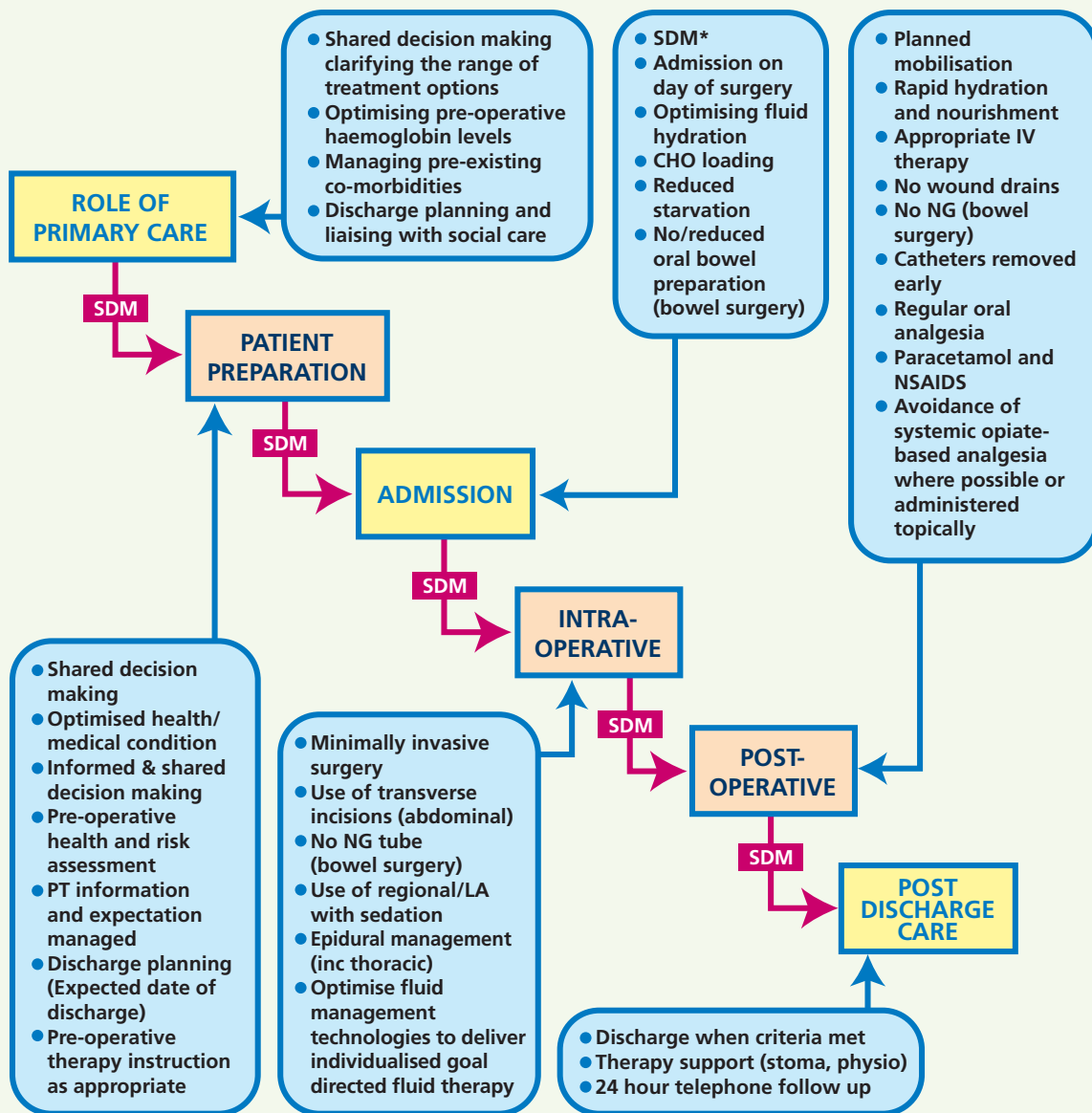
Oxford as run a pilot modified enhanced recovery (ER) regime to evaluate the feasibility of introducing an ER protocol into practice for patients undergoing breast free flap reconstructive surgery. The early preliminary results have been encouraging. The current length of stay for these patients in Oxford is 7 to 10 days. The preliminary results from the pilot have shown that patients can be safely discharged as early as day five. The Oxford team is keen to test this further working closely with the other specialties across the Trust.

<sup>1</sup> Results of the survey were presented earlier this year at the Congress of the International Confederation for Plastic Reconstructive and Aesthetic Surgery in Vancouver.

**The term Individualised goal directed fluid therapy used within the case studies in this publication represents the use of intra-operative fluid management technologies as identified in 2012/13 NHS Operating Framework, Innovation, Health and Wealth Review (2011) and N.I.C.E. Guidance MTG3.**



Figure 1: The enhanced recovery surgical pathway



**\*Shared decision making (SDM)** means involving the patient as an active participant in their care, first clarifying the range of clinically acceptable treatment options for them and then the patient working in partnership with their clinical team in choosing the best treatment for them at the time, the treatment which best meets their individual needs, values and preferences.

Shared decision making is a journey and runs throughout the pathway from self care through to highly specialist care. It is not just about whether surgery is right for that patient at that time but how they want to be treated and managed and supporting them to be an active partner throughout their health care journey.

**Shared decision making is integral to the enhanced recovery pathway.**

## CONSIDER THE QUESTION: IF ENHANCED RECOVERY HAS PRODUCED SUCH DRAMATIC IMPROVEMENTS IN SURGERY... WOULD ALL INPATIENTS, INCLUDING ACUTE MEDICINE, BENEFIT FROM A SIMILAR APPROACH?

### Enhanced recovery in acute medicine

Some clinicians have now started to consider the above question as any acute illness can trigger a reduction in functional capacity similar to that following surgery.

## CASE STUDY

### Pulmonary rehabilitation support for curative lung cancer surgery: Heart of England NHS Foundation Trust

Babu Naidu, Associate Professor at the University of Warwick and Consultant Thoracic Surgeon at Heart of England NHS Foundation Trust and his team, in conjunction with Pan Birmingham Cancer Network, have introduced a patient preparation programme for patients undergoing curative lung surgery.

The rehabilitation programme is a multi-stranded chronic obstructive pulmonary disease (COPD) type programme that optimises health and prepares patients for surgery and continues to support recovery after patients return home. The programme has four key elements:

- Pulmonary rehabilitation exercise programme
- Smoking cessation advice and support
- Nutritional status assessment to identify nutritionally depleted patients
- Patient self management and education which covers all aspects of surgery and recovery.

### Impact to date

- The post-operative pulmonary complication rate (PPC) has reduced from 18.7% to 11.4%
- The hospital re-admission rate has been reduced from 16.1% to 5.7%
- The mean hospital length of stay (LOS) has been reduced from 7.2 days to 5.7 days
- The ITU admission rate has reduced from 3.2% to 2.9%
- In addition, the mean ITU LOS has been reduced from 3.6 days to two days
- On their return from surgery all patients spend at least one night in ward 4 High Dependency Unit (HDU)
- The mean HDU LOS has been reduced from 2.4 days to 1.9 days.
- Delivered cost savings in the region of £44,000 over an 11 month period
- £36,700 of this saving has been cash releasing to PCTs. The savings have been made through reductions in ITU, HDU admissions and hospital readmissions. There have also been savings made through reduced hospital LOS.

There is currently little research evidence in this area, but potentially useful strategies which could be implemented from the moment of admission, these could include:

- Prescription of high value nutrition from the moment of admission
- Active exercise programmes designed to prevent muscle loss
- Better fluid management
- Full engagement of patients and carers
- Provision of information about managing the acute episode and about actions that could prevent a repeat admission.

If strategies of this nature were to have the anticipated effect, both patients and the service would benefit and:

- Patients would leave hospital less debilitated
- Some patients could avoid the 'tipping point' into temporary or permanent dependency
- Primary and social care would have less dependent patients to provide services for
- Discharge planning could be started at the point of admission
- Trusts would benefit from reduction in length of stay and therefore be able to reduce beds.

This fits well with the current emphasis on out of hospital care and moving care 'closer to home'.

The potential for active rehabilitation has already been recognised in various areas of medical care:

- The emerging role of acute physicians with an active approach from the moment of admission to hospital
- Outreach teams in some health communities prevent unnecessary admission and support early discharge
- Many stroke services adopt a pro-active approach to re-ablement
- NICE<sup>1</sup> guidance published recently identifies the need to reduce debility following episodes in critical care and individual sites are starting to design appropriate pathways.

These useful strategies may be simple and obvious, but as in surgery, will require a change in the culture and behaviours of care-givers of all disciplines to engage more with patients and their carers as active participants as a way to improve quality of care.

Enhancing recovery in acute medicine would support the concept of *'No decision about me, without me.'*<sup>2</sup> Involvement of patients has been described in papers such as the Institute of Healthcare Improvement's *'Transforming care at the bedside'*<sup>3</sup> and The King's Fund *'Patient-Centred Care' Programme.*<sup>4</sup>

Active research is urgently needed to assess the potential for enhanced recovery strategies to impact on all inpatients.

**Kerri Jones**, Associate Medical Director for Innovation and Improvement, South Devon Healthcare NHS Foundation Trust and advisor to the Enhanced Recovery Partnership.

<sup>1</sup> <http://guidance.nice.org.uk/CG83>

<sup>2</sup> Liberating the NHS. Department of Health, (2010)

<sup>3</sup> The Institute of Healthcare Improvement's 'Transforming care at the bedside' (2004). [www.ihl.org](http://www.ihl.org)

<sup>4</sup> The King's Fund 'Patient-Centred Care Programme' (2011). [www.kingsfund.org.uk](http://www.kingsfund.org.uk)

## ENHANCED RECOVERY IN EMERGENCY SURGERY

The Association of Surgeons of Great Britain and Ireland (ASGBI) guidelines<sup>1</sup> points out that although enhanced recovery pathways have been primarily studied in the elective setting, they should still be applied to the emergency 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. The ASGBI are currently updating the guidelines to include a section on emergency care.

## CASE STUDY

### Emergency Fractured Neck of Femur Pathway The Royal Liverpool and Broadgreen University Hospitals NHS Trust

The Royal Liverpool and Broadgreen University Hospitals NHS Trust have applied the principles to the unplanned hip fracture pathway.

Patients are:

- Fast tracked from the emergency department (ED) to the neck of femur unit within two hours by early notification from the paramedic to emergency department
- Nursed on pressure relieving mattresses
- Operated on within 24 hours.

Patients' health is optimised pre operatively with visits from the consultant ortho-geriatrician and anaesthetist. Pain is controlled through a locally produced, evidence based algorithm. Nutrition status is optimised with minimal starvation times. Patients are mobilised early, either day of surgery or morning after, facilitating early rehabilitation. The pathway was facilitated by an advanced nurse practitioner and use of electronic tracker to fully inform the MDT.

Patients operated within 24 hours of admission has increased from 33 to 71%. Median LOS has reduced from 27 to 14 days.

<sup>1</sup> Guide for Implementation of Enhanced Recovery Protocols Association of Surgeons of Great Britain and Ireland guidelines (December 2009)

## CASE STUDY

### Emergency laparotomies: Development of an enhanced recovery care pathway Royal Surrey County Hospital NHS Foundation Trust

Emergency laparotomy is a high risk procedure, leading to high mortality rates most notable in the elderly population, requiring high utilisation of critical care and ward bed days.

Local problems with pathway were identified

- Poor identification of high risk patients
- Less experienced trainees treating patients
- Frequent rotation of trainees
- Delays in diagnosis and resuscitation of patients
- Increasing frequency of out of hours operations
- Increasing use of resources.

#### Care bundle approach supporting enhanced recovery

Anaesthetists at the Royal Surrey County Hospital recognised the need to change their emergency surgical care pathway and implemented care bundles to improve co-ordination of care and consistency of evidence based care delivery.

A multidisciplinary team developed a five stage care bundle based on previous experience with colorectal, oesophagectomy and hepatobiliary tract surgery, Goal Directed Fluid Therapy standard and national and local trials, such as OPTIMISE and local liver resection randomised control trials.

The pathway was also designed to capture the data set required for HQIP National Emergency Network audit.<sup>1</sup>

#### Results

Initial results showed that in the highest risk patients the adoption of the pathway resulted in a dramatically reduced length of stay from 20.5 days to 12 days.

<sup>1</sup>National Institute of Anaesthesia Health Services Research Centre [www.niaa-hsrc.org.uk/article.php?newsid=299](http://www.niaa-hsrc.org.uk/article.php?newsid=299) (accessed 21/02/2012)

## ENHANCED RECOVERY IN OBSTETRICS

Whilst there is no research specifically looking at enhanced recovery in obstetrics it is reasonable to assume many of the principles used in gynaecology can be applied in obstetrics. Elective caesarean sections would seem the most obvious place where these principles can be used in clinical practice.

Women frequently have their operations delayed by emergency procedures, meaning they spend long periods without food or drink. Postnatally, this may delay mobilisation and discharge as well as establishment of breastfeeding. By ensuring women are in the optimum condition pre-operatively these effects can be minimised.

## PRINCIPLES THAT CAN BE APPLIED

### ANTENATAL

- Maximise antenatal well-being; ensure Hb optimised, consider prophylactic iron
- Proactive breast-feeding tuition antenatally
- Creation of an elective caesarean list with designated times to attend, rather than all coming in at 8am
- Encourage women to eat and drink right up to the cut off times (i.e. six and two hours before their report time)
- Give energy drinks to have two hours before proposed section time. Give further drinks if procedure delayed
- Appropriate psychological preparation, with an expectation of going home after 24 hours and explanation of what to expect with regards to pain.

### PERI-OP

- VTE prophylaxis
- Prophylactic antibiotics
- Careful haemostasis and use of cell salvage where appropriate.
- Operative techniques to minimise pain such as not dissecting the sheath posteriorly<sup>1</sup> and using Cohen's entry<sup>2</sup>
- Use of carbitocin instead of syntocinon infusion may allow quicker return to the ward and establishment of breast feeding.<sup>3</sup>

### POST-OP

- Remove catheter after 12 hours (regardless of time). Women's discharge is frequently delayed as they have not completed the appropriate number of voids. Women will be up in the night with a new baby so waking them to perform this will not be necessary
- Regular analgesia and tuition as to how best to administer it
- Good breastfeeding support
- Home after 24 hours
- Good community midwife support.

<sup>1</sup> Kadir RA, Khan A, Wilcock F, Chapman L Is inferior dissection of the rectus sheath necessary during Pfannenstiel incision for lower segment caesarean section? A randomized controlled trial Eur J Obstet Gynecol Reproduct Biol 2006 Sep-Oct;128(1-2):262-6.

<sup>2</sup> Hofmeyr GJ, Mathai M, Shah A, Novikova N, Techniques for caesarean section. Cochrane Database Syst Rev 2008 Jan 23;(1):CD004662

<sup>3</sup> Attilakos G, Psaroudakis D, Ash J, Buchanan R, Winter C, Donald F, Draycott T Carbetocin versus oxytocin for the prevention of postpartum haemorrhage following caesarean section: the results of a double blind randomised controlled trial BJOG 2010;117:929-936

## ENHANCED RECOVERY: SAFE CARE SEVEN DAYS A WEEK

There is a growing body of evidence to suggest that where there is a lack of access to clinical services over a seven day period, patients do not always experience parity of access to the optimum treatment or diagnostic test. This can result in delays to their treatment that can contribute to less favourable clinical outcomes. However, some clinical services are responding very positively to seven day demand for their services and can clearly demonstrate the benefits for both patients, their carers and often staff.

The principle of 'equality of treatment or clinical outcome regardless of the day of the week' may be delivered without necessarily providing all services at the same level. It may be that elective services require different service delivery models than acute services, but that the level of service provided should ensure that the patients continue to 'flow' through the system and match capacity to demand.

More detailed descriptions of seven day working and case studies can be found at:

[www.improvement.nhs.uk/7dayworking](http://www.improvement.nhs.uk/7dayworking)



This initiative  
has my full  
support.

**Professor Steve Fields**  
Chairman, NHS Future Forum

## CASE STUDY

### Enhanced recovery: Safe care, seven days a week Rehabilitation seven days per week for elective orthopaedic patients: Golden Jubilee National Hospital Scotland

The enhanced recovery model has been rolled out for elective orthopaedic surgery of the hip and knee across Scotland to ensure that the quality of care is maintained for every patient with an agreed criteria for elective surgery and bespoke plans in place, leading to no delays in treatment, therapy or discharge, a reduction in length of stay with fewer hospital acquired infections being contracted as a direct result. The patients experience continuity of care as early discharge is facilitated by care of community therapists as required. Nine out of 12 boards are implementing the enhanced recovery pathways. The average length of stay (LOS) for hip replacement is 3.6 days and knee replacement 3.8 days.

A one-stop pre-operative assessment clinic has been implemented during which post operative equipment and social care needs are identified and arranged across 37 social services departments across Scotland.

Data shows there was no increase in either complications or readmissions. Additionally, patient satisfaction improved:

- £20,000 can be saved per annum by moving to seven day working rather than overtime rates for weekends
- Savings of approx £35 per patient on consumables (drugs and wires) identified
- Restricting the choice of prosthesis to two for both hip and knee replacements has enabled savings of over six figure sums.

Physiotherapists, occupational therapists and rehabilitation assistants work seven days a week to mobilise patients and discharge across the week following elective orthopaedic hip and knee replacements. The surgeons operate Monday to Friday with a current activity of 60-70 joint replacements per week (approximately 3,000 per year).

Further work using lean principles is being undertaken to identify any overlap of work and see if time can be released between the physiotherapists and occupational therapists.

West Scotland are looking to roll this out across heart and lung surgical transplants.

**David McDonald**, Caledonian Coordinator, Physiotherapist and Enhanced Recovery Lead, Golden Jubilee National Hospital Scotland

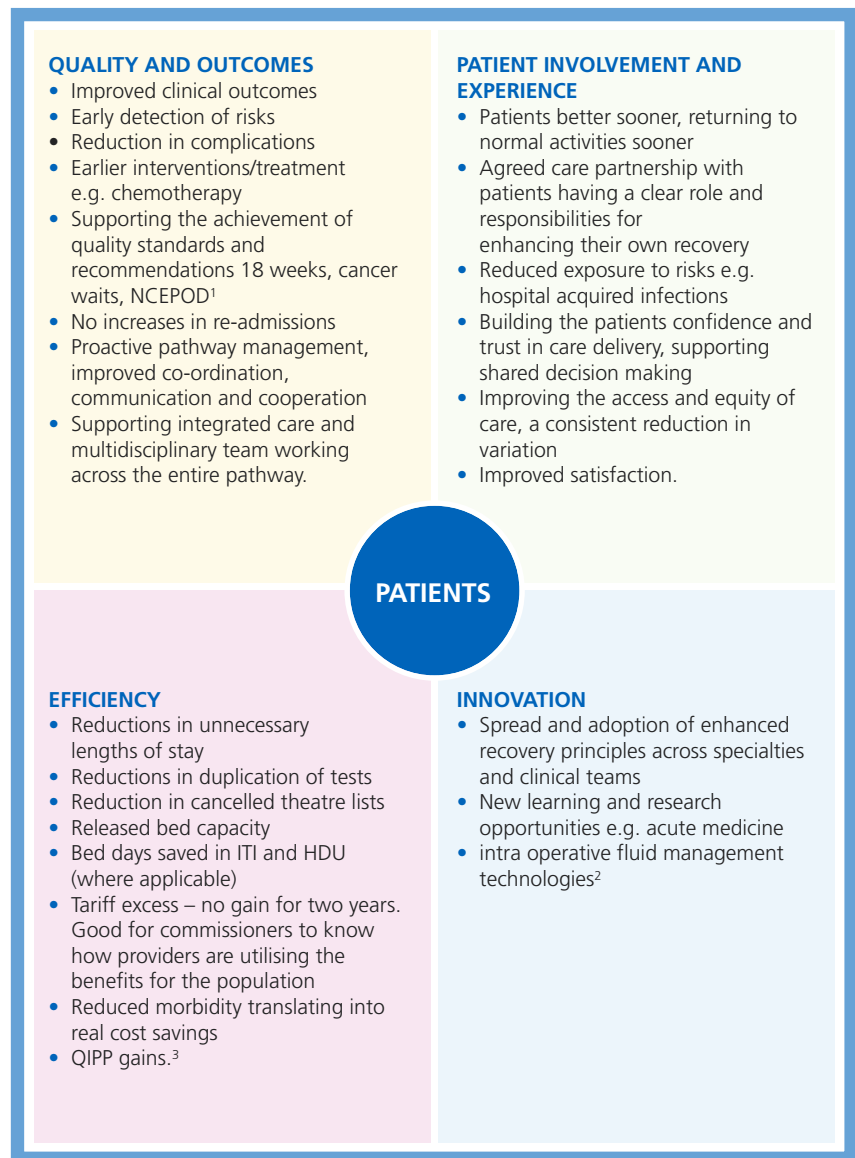
## WHY CHOOSE ENHANCED RECOVERY... THE BENEFITS

- The adoption of enhanced recovery continues to build momentum across the country
- Clinicians, managers, commissioners and patients are recognising the benefits of ER and its value
- Improvements in the quality of care, outcomes, patient expectations, experience, and efficiency with reductions in unnecessary lengths of stay have been highlighted by organisations who have embedded the pathway into day to day practice<sup>1</sup>.

“Enhanced recovery is great for cancer patients and for QIPP and from an NHS Commissioning Board point of view - a proof of principle to be emulated.”

**Ciaran Devane**, Chief Executive Macmillan Cancer Support and Non Executive Director of the NHS Commissioning Board

## WHERE ENHANCED RECOVERY HAS BEEN EMBEDDED, ORGANISATIONS, CLINICAL TEAMS AND PATIENTS HAVE REPORTED A RANGE OF NATIONAL AND LOCAL BENEFITS.



Sections 2, 3, 4 and 5 continues to provide further details on the benefits of enhanced recovery.

<sup>1</sup> National Confidential Enquiry into Patient Outcome and Death (2011). Knowing the risk: a review of the peri-operative case of surgical patients

<sup>2</sup> NHS Innovation, Health and Wealth. Accelerating Adoption and Diffusion in the NHS (2011)

<sup>3</sup> Department of Health - Quality, Innovation, Productivity and Prevention (2010)



## PROFESSIONAL COLLEGES AND ASSOCIATIONS RECOGNISING THE BENEFITS AND SUPPORTING ENHANCED RECOVERY AS THE SENSIBLE WAY FORWARD

### British Association of Urology Surgery - keen to adopt

BAUS aims to ensure the highest standards of care and encourage contemporary practice with best outcomes, recognising that patients are central to our practice. BAUS is keen to both create new evidence of best practice as well as promote the adoption of learning from others. The ERPP is a national collaborative approach to try and improve clinical outcomes for individual patients, which enables them to be fitter, return home sooner and improve the overall patient experience for those undergoing surgery.

BAUS is keen to see national adoption of such evidence-based programmes with a view to reduction in variation of care across the NHS and supports the integration of national audit to enhance the evidence base.

BAUS wishes to be in the vanguard to deliver a formal SpR education programme integrated into their training to ensure that the next generation of Urologists continue to promote enhanced recovery programmes and best practice measures to encourage the population of the evidence base for future practice. We also want to ensure that the next generation are trained to deliver the sort of care that contemporary modern practice demands.

**Adrian Joyce**, President of the British Association of Urology Surgery

“

Enhanced recovery continues to demonstrate the benefits of its evidence-based team approach to practice improvement - with the patient at the heart of that team. The challenge now is widespread implementation of this good practice in a robust and supported way, ensuring all eligible patients have access to the highest standards of care.”

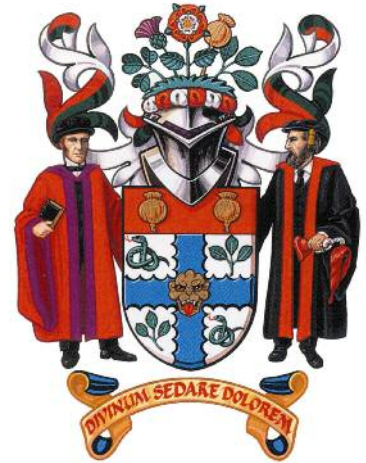
**Professor Norman Williams**,  
President, The Royal College of Surgeons



“

The Royal College of Anaesthetists strongly supports integrated care pathways; the enhanced recovery programme offers both medical and patient engagement in a process of identifying needs and tailoring care from referral to recovery. ”

**Dr Peter Nightingale**, Royal College of Anaesthetists



“

Enhanced recovery of orthopaedic patients, especially those having replacement of painful arthritic joints has demonstrated an improvement in several ways. It has made patients feel better sooner and as a consequence has reduced the recovery time in those units using it fully. The British Orthopaedic Association has supported all elements of enhanced recovery and outreach support for patients who have had surgery for their musculoskeletal disorders and are exploring how this can be extended to trauma surgery. We believe this will improve the quality of care our patients receive and would support evaluation and translation of findings into practice improvements. We have recommended the incorporation of enhanced recovery aspects into the Best Practice Tariff for primary hip and knee arthroplasty. ”

**Professor Joseph Dias**, President of the British Orthopaedic Association.

“

From a BASO point of view, we would whole heartily support this. Enhanced recovery is being introduced in other specialties and there is much to learn from international practice. BASO will make sure enhanced recovery becomes a standing item on the College Cancer Services Committee agenda. ”

**Mr Mike Hallisey**, BASO - ACS President,  
BASO - The Association for Cancer Surgery

“

The Enhanced Recovery Programme is an important

The Faculty of  
**Intensive Care Medicine**



development in improving the care of patients undergoing surgery, particularly given increasing patient dependence and complexity of healthcare. For those who require intensive care as part of the postoperative pathway, there are three strategies which improve outcomes: early intervention to optimise physiology; prevention of complications including infection and immobility; and integration of care over time and across disciplines and locations. These principles are well-exemplified in the Enhanced Recovery Programme, and it is likely that they are generalisable to other domains of healthcare including emergency medical admissions. Reliable delivery of current best practice within the framework of enhanced recovery also permits the continued research evaluation of specific components to ensure that new knowledge can be incorporated and adopted rapidly. ”

**Professor Julian Bion**, President, Intensive Care Medicine

## SECTION 2 **ENHANCED RECOVERY: EVERYDAY PRACTICE FOR EVERY PATIENT - FULFILLING THE POTENTIAL**

“**Enhanced recovery requires the building of a multidisciplinary team, that crosses organisational and functional boundaries, it is about the entire pathway of care, from home to home.**”

Alan Nye, National Primary Care Clinical Lead

The Enhanced Recovery Partnership programme 2010 guide: Delivering enhanced recovery: helping patients to get better sooner after surgery<sup>1</sup> acted as a starting point for clinical teams and organisations committed to providing the highest quality of care.

This section aims to address some of the clinical practice aspects that may hinder the adoption of enhanced recovery as everyday practice.

### **Increasing equity of practice**

Currently at least 50% of NHS Trusts have fully implemented enhanced recovery across one specialty. During 2012, the Enhanced Recovery Partnership aims to maximise adoption across the original eight procedures, colectomy, excision of rectum, prostatectomy, cystectomy, hysterectomy (vaginal and abdominal) and hip and knee<sup>1</sup> and encourage lateral adoption into emergency surgery.

### **Supporting the patient to be in the best possible condition**

For patients to achieve the best results from enhanced recovery, it is vital that assessment and preparation starts with the GP assessment<sup>2</sup>.

### **PATIENT PREPARATION IS THE KEY TO SUCCESS.**

#### **Preparation includes:**

- 1. Provide health screening** prior to referral. This helps to identify causes of increased morbidity – such as anaemia,<sup>3,4,5</sup> (Figure 2 on page 21) sub-optimal diabetic control<sup>6</sup>, hypertension, reduced renal function, obesity, smoking and general low levels of physical and psychological fitness.
- 2. Review and actively manage existing long term and mental health conditions.** Advise and support on diet, smoking, alcohol intake and exercise is ongoing and not only prior to admission into hospital but at this time changes in life style supports recovery.
- 3. Discuss treatment options and choices** as part of shared decision-making<sup>2</sup>, The GP helps the patient to understand the treatment options available and supports the patient in making the right decision to proceed or not.

<sup>1</sup> Enhanced Recovery Partnership: delivering enhanced recovery: helping patient to get better sooner after surgery (2010)

<sup>2</sup> Shared decision making NHS Operating framework 2012/13.

<sup>3</sup> [http://hospital.blood.co.uk/library/pdf/INF\\_PCS\\_HL\\_011\\_01\\_Iron\\_leaflet.pdf](http://hospital.blood.co.uk/library/pdf/INF_PCS_HL_011_01_Iron_leaflet.pdf)

<sup>4</sup> [www.transfusionguidelines.org.uk](http://www.transfusionguidelines.org.uk)

<sup>5</sup> [www.nhs.uk/Conditions/Anaemia-iron-deficiency-/Pages/MapofMedicinepage.aspx](http://www.nhs.uk/Conditions/Anaemia-iron-deficiency-/Pages/MapofMedicinepage.aspx)

<sup>6</sup> UKPDS UK prospective diabetes study, DCCT (Diabetes Control and Complications Trial)

**DID YOU KNOW?**

- Shared decision-making is part of the NHS Operating Framework
- 30 decision aids are being developed over the next 15 months, in addition to the existing nine aids

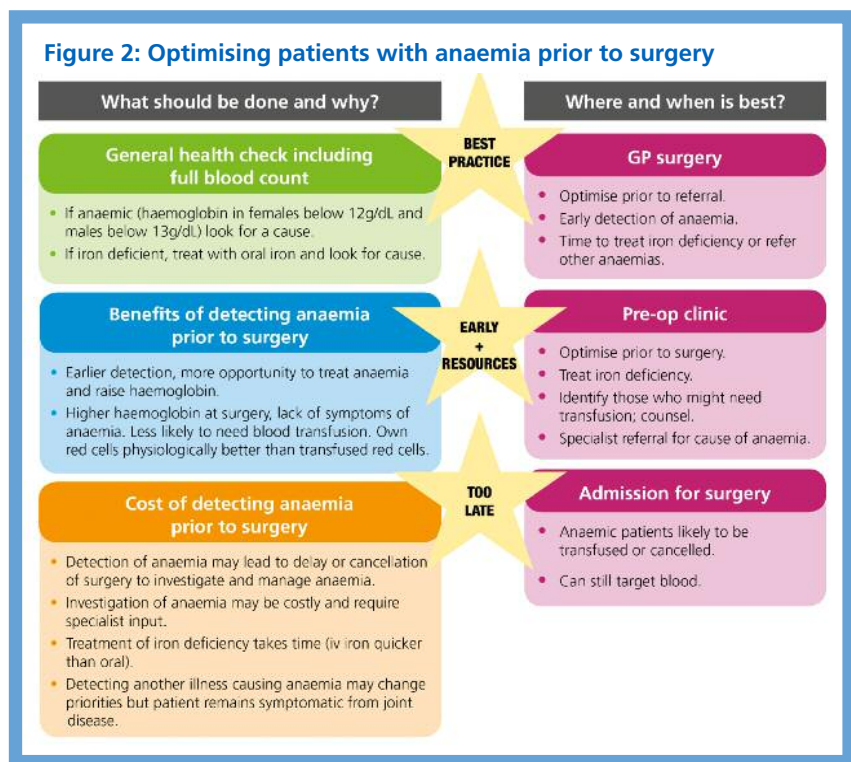
For further information go to: [www.rightcare.nhs.uk](http://www.rightcare.nhs.uk)

4. Promote the patients' understanding of their role and responsibilities in enhancing their own recovery.

5. Bring more aspects of preparation care closer to home.<sup>7</sup>

6. Identify physical, psychological and social risks of recovery early. This can lead to earlier referral to supporting agencies including social care and charities for support. With enhanced recovery, GPs know that the patient will not be in hospital for long and early discussions with the patient on discharge and support can commence, continue to support shared decision-making.

Figure 2: Optimising patients with anaemia prior to surgery



<sup>7</sup> [www.dh.gov.uk/en/Healthcare/Primarycare/Practitionerswithspecialinterests/DH\\_074419](http://www.dh.gov.uk/en/Healthcare/Primarycare/Practitionerswithspecialinterests/DH_074419)

## PATIENT PREPARATION IS THE KEY TO SUCCESS

### Pre-operative assessment

The patient's pre-operative assessment appointment is important because this is about:

- Good planning
- Identifying and managing risk
- Continuing to keep patients fully informed and involved in the shared decision making
- Offering a date for pre-operative assessment when appropriate, in many cases this is on the same day the decision for surgery/treatment is made so therefore a date and time for admission can be agreed with the patient
- Scheduling pre-operative assessment clinics carefully. This will enable timely patient assessment of the patient's 'fitness for surgery.' This helps to reduce operation cancellations, repeated tests,<sup>1</sup> unnecessary procedures and provide timely informed consent
- Giving anaesthetists a key role in pre-operative assessment
- Pre-operative assessment is where discharge planning starts, referrals to agencies can also be made at this point to support discharge where required and patients are therefore prepared for admission on the day of surgery.

### DID YOU KNOW?

**Anaesthetists support shared decision-making in pre-op (major surgery) assessment clinics for high risk patients giving patients an accurate assessment of risk. Patients do not always realise at this point that surgery is not the only option.**

### CASE STUDY

#### Social care referrals made at pre-operative assessment Scarborough Hospital NHS Trust, Yorkshire

Scarborough Hospital NHS Trust involved social services as key members of the Enhanced Recovery (ER) Steering Group. Initially, ER was implemented for patients undergoing hip and knee surgery.

Through the actions of the ER steering group, it was agreed that any patient requiring a social services assessment would have their 'Section 2' referral made at the pre-operative assessment clinic by the pre-operative assessment nursing staff. Providing the patient had an agreed date for admission. Once completed the 'Section 2' referral was faxed across to the Social Services Department.

Length of stay for hip and knee surgery as reduced from 4.5 days to 2.8 days. This improvement has been achieved by the contribution of social services early assessment and providing earlier discharge support.

### PLEASE REMEMBER TO CHECK

**Patients receive a huge amount of information within each contact with the hospital during their pre admission phase. Messages and information given to the patient regarding LOS, their role in recovery etc. must be consistent from across the team. This information comes to a pivotal point at pre-operative assessment where best practice would expect that information and decision making is checked between patient, relative, carer and the hospital team**

<sup>1</sup> NICE clinical guidelines on routine preoperative tests for elective surgery.

## IDENTIFYING THE RISKS

### Peri-operative risk

The structure of the peri-operative risk assessment should be designed to provide both a generic and procedure specific assessment (Figure 3).

Patients should have access to all the necessary information and continue to be actively involved in decision making and informed consent process.

The pre-operative assessment should be carried out by trained and competent pre-operative assessment assessors who should be able to order and perform basic investigations and make referrals according to local guidelines agreed by the clinical team<sup>1</sup>.

Figure 3: Traffic Light Triage Tool - identifying the risk

Preoperative assessment: Triage			
Risk	1	2	3
Age	<78	78–82	>82
IHD		Angina (no MI)	MI/NSTEMI
Heart failure			Heart failure
Creatinine	<90 µmol/L	91-149 µmol/L	>150 µmol/L
TIA/stroke		One TIA	Two TIAs or one stroke
Diabetes		NIDDM	IDDM
Short of breath		SOB	
Confusion		Confusion	
CABG or Stents		CABG or Stents	
PE		PE	
Previous problem		Previous problem	
Malignancy		Malignancy	
Patient request		Patient request	
Worried		Worried	
Falls		Falls	
Revision surgery		Revision surgery	
Bilateral surgery		Bilateral surgery	
Assessment by	Nurse	Nurse + Anaesthetist	Anaesthetist – CPX

## CASE STUDY

### Traffic Light Triage Tool at pre-operative assessment (Figure 3) South Devon Healthcare NHS Foundation Trust

South Devon Health Care NHS Foundation Trust uses a traffic light triage tool at pre-assessment (Figure 3) for patients undergoing hip and knee surgery. The tool provides:

- The identification of potential risk
- Determines who should conduct pre-operative preparation, e.g. nurse, anaesthetics.
- Identifies the level of risk of mortality and morbidity following surgery
- Identified the HDU resources potentially required
  - **Green:** risk of mortality less than 1:200, risk of serious mortality less than 1:100 with no need for HDU facility for elective surgery
  - **Orange:** risk of mortality 1:200 and serious morbidity 1:100
  - **Red:** risk of mortality 1:100 and serious morbidity 1:50
  - **Orange and Red** potentially need HDU facilities post operatively.

<sup>1</sup> BV Murthy (2006). Improving the patients journey: The role of pre-operative assessment team. The Royal College of Anaesthetists, Bulletin May 2006. [www.roca.ac.uk/docs/Bulletin37.pdf](http://www.roca.ac.uk/docs/Bulletin37.pdf)

Improvements in pre-operative assessment and preparation, peri-operative care and post-operative support have provided an important reduction in the mortality rate, which has in turn provided savings in terms of ICU/HDU bed days per patient, as well as decreasing the number and severity of complications suffered by patients following surgery.

## CASE STUDY

### Risk assessment in pre-operative assessment clinic improve outcomes for patients

#### South Devon Healthcare Foundation NHS Trust

South Devon Healthcare Foundation NHS Trust reviewed the outcome of 314 patients who had a colorectal resection for an adenocarcinoma following introduction of the enhanced recovery pathway. Analysis of data revealed there was an association between attending a high risk pre-operative assessment clinic and long term survival.

Attendance of patients at the pre-operative assessment clinic enabled pro-active planning for the postoperative HDU stay compared to those patients who were not seen in the clinic.

Overall the cost of critical care was greater in those that did not attend the high risk clinic and had a worse survival.<sup>2</sup>

<sup>2</sup> Carlisle J, Swart M, Dawe E, Chadwick M. Factors associated with survival after resection of colorectal adenocarcinoma in 314 patients. BJA 20012; 108: 430-5



### Cardiopulmonary exercise testing (CPET)

Objective assessment of functional (or exercise) capacity using cardiopulmonary exercise testing (CPET)<sup>1</sup> is increasingly being used to assess peri-operative risk in major surgery. Consideration should be given to performing a CPET in any pre-operative patient who has increased risk or is scheduled to undergo a high risk surgical intervention. CPET benefits patient by helping to stratify them into post operative care in a ward, high dependency or intensive care setting.

### Risk Assessment and Prediction Tool (RAPT)

This is a simple risk tool that identifies those patients who may be at the highest risk of delayed discharge due to post operative rehabilitation needs. The RAPT<sup>2</sup> tool has been used on hip and knee arthroplasty surgery patients. It is used to measure risk and predict potential outcome. Risk is based on age, gender and ability to get around without help

Knowing the potential outcome ahead of time could help family members and carers prepare better for the patient's care.

### Knowing the risk - National Confidential Enquiry into Patient Outcome and Death: A review of the peri-operative care of surgical patients (December 2011)

Enhanced recovery pathways could provide the solution for meeting the NCEPOD recommendations.

## CASE STUDY

### Use of CPET to define level of post-operative care for elective major abdominal surgery Frimley Park Hospital NHS Foundation Trust

Patients for elective major abdominal surgery over the age of 60 years attend pre assessment clinic to undergo CPET. Each patient will take 10-12 minutes for exercise protocol, however, the total test takes around 30-45 minutes including preparation. Those with unstable angina, fixed cardiac output states like severe aortic stenosis and those who cannot perform cycling are excluded.

For postoperative care, patients are categorised in three groups:

- i) Ward-based care postoperatively (AT >11, VO<sub>2</sub>Max >15, Ve<sub>q</sub> O<sub>2</sub> <35, Ve<sub>q</sub> CO<sub>2</sub> <42, good increase in oxygen pulse from their base line)
- ii) HDU post-operative care -those who may have an AT >11 but with cardiac ischaemia or abnormal ventilatory equivalents of either O<sub>2</sub> or CO<sub>2</sub>
- iii) ICU post operative care - those who have AT <11, VO<sub>2</sub> <15 or with other significant cardiac or pulmonary abnormality.

### "1. Identification of the high risk group

The first challenge is to reliably and accurately identify the patient group that is at high risk of mortality and morbidity. Whilst this might seem obvious, the literature is full of differing descriptions, scoring systems and tests to meet this aim. They are largely based on assessment of comorbidities alone or combined with a classification of surgical intervention. Tests of organ function and more recently of physiological reserve are also used to try to address this issue."

### "2. Improved pre-operative assessment, triage and preparation

Measures to improve fitness for surgery can be targeted and applied if the identification of these high risk patients can be performed in a

suitable timescale. Usually, this process is thought of as having started once the patient has been accepted for surgery but more recent developments identify primary care as a key partner in identifying fitness for surgery. As well as specific optimisation of comorbidities it is important to manage volaemic status and nutritional status. Recently there has been interest in improving physiological reserve, using exercise regimens, where appropriate. There is also the opportunity to consider if surgical intervention is the best course of action due to the risk of adverse outcomes".

National Confidential Enquiry into Patient Outcome and Death (2011): A review of the perioperative care of surgical patients [www.ncepod.org.uk](http://www.ncepod.org.uk)

<sup>1</sup> Smith TB et al. Car diopulmonary exercise testing as a risk assessment method in non cardiopulmonary surgery: a systematic review. Anaesthesia 2009. Aug; 64(8): 883-93.

<sup>2</sup> Leonie B. Oldmeadow, MCLinEduc, et al. Targeted Postoperative Care Improves Discharge Outcome after Hip or Knee Arthroplasty. In Archives of Physical Medicine and Rehabilitation. September 2004. Vol. 85. No. 10. Pp. 1424-1427.

### Patient preparation promotes continual assessment in managing the risk

#### Joint schools

Joint schools are becoming common practice in a number of organisations, they are viewed as a key part of the pathway for patients undergoing total hip and knee replacements. These schools are where patients meet with members of the clinical team on either a one to one basis or in groups to receive information, instruction and exercise aimed at optimising the patients condition physically and psychologically, pre and post operatively.

A variety of models and tools for patient pre-operative education for patients are evolving and increasingly patients undergoing surgery will receive information via use of DVDs to help them understand not only the pathway of enhanced recovery but their role and responsibilities in enhancing their recovery.

## CASE STUDY

### DVD films for patients undergoing hip/knee replacement surgery

#### Robert Jones and Agnes Hunt Orthopaedic District Hospital

For patients undergoing enhanced recovery hip and knee replacement surgery at the RJAH, a DVD has been produced to help patients understand the process.

There are two DVDs; one for patients undergoing total hip replacement and a further one about knee replacement surgery. They have been produced by NHS Digital Services. The DVD provides reassuring information for patients. The films feature a selection of patients talking about their personal experience of rapid recovery joint replacement, alongside surgeons and a physiotherapist and an anaesthetist, who explain why it is good for patients and the number of benefits they are likely to experience.

Patient David, 69, from Cheshire was followed by the film crew on the day. The DVD shows him before going to theatre, in the anaesthetic room, awake but sedated in the operating theatres having his operation with consultant orthopaedic surgeon Mr Tony Smith and returning to the ward, eating and then getting out of bed to walk just a few hours after surgery.

## CASE STUDY

### Preparation for breast surgery

#### Royal Marsden NHS Foundation Trust

Patients are taught the basic arm and breathing exercises in group classes at pre-operative assessment. The physiotherapists have produced a DVD of exercises which patients can take home with them and use in the comfort of their own living room. The DVD also contains advice and tips from clinicians on maximising speed of recovery for patients post-surgery.

*"It has proved a huge hit with our patient cohort and has ensured that we are giving them the care they need without delaying their discharge home,"* says Kate Jones, Clinical Specialist Physiotherapist at the Royal Marsden.

Delivering major breast surgery safely as a day case or one night stay. [www.improvement.nhs.uk](http://www.improvement.nhs.uk)

## CASE STUDY

### Focused pre-operative patient stoma education, prior to ileostomy formation after anterior resection, contributes to a reduction in delayed discharge within enhanced recovery Ashford and St. Peter's NHS Foundation Trust

Stoma formation is a well-known cause for delayed discharge following colorectal surgery. This has been addressed by the enhanced recovery programme (ERP) pre-operatively through stoma counselling sessions. These aim to promote independent stoma management post-operatively, thus expediting hospital discharge. We compared the numbers of patients with prolonged hospital stay secondary to delayed independent stoma management prior to and following the introduction of an enhanced recovery programme with pre-operative stoma education.

#### Methods

A retrospective data collection on 240 patients undergoing anterior resection with the formation of a loop ileostomy (September 2008 to October 2010) of which 120 patients were pre enhanced recovery and 120 patients post introduction of ER. Comparisons were made in patients with prolonged hospital stay (defined as hospital stay of more than five days) secondary to stoma management.

#### Results

17.5% of patients in the pre-ERP group experienced postponed hospital discharge due to a delay in independent stoma management, compared to 0.8% of patients experiencing such a delay after the introduction of ERP.

#### Conclusions

Delayed discharge secondary to independent stoma management can be significantly reduced with pre-operative stoma management teaching as part of an enhanced recovery programme.

Younis J, Salerno G, Fanto D, Hadjipavlou M, Chellar D, Trickett JP. International Journal of Colorectal Disease, 2012, 2012 Jan;27(1):43-7.

### Proactive care of older people going to have surgery (POPS) team

The Guys and St Thomas' POPS service works closely with the surgical teams along the enhanced recovery pathway, providing ward-based education that focuses on elderly care and surgical issues. The multi-disciplinary team provides pre-operative assessment for patients aged over 65 years with multiple complex comorbidities or functional problems. Patients are optimised for anaesthetic and surgery.

The team then follows the patient through the surgical admission, addressing medical, functional and discharge planning concerns. The POPS team provides structured support for the following surgical specialties: orthopaedics urology vascular upper and lower gastrointestinal surgery ear, nose and throat surgery head and neck, and maxilo-facial surgery.

## ENSURING THE PATIENT HAS THE BEST POSSIBLE CARE, MANAGEMENT AND REHABILITATION: PUTTING THE SPOTLIGHT ON THE FREQUENTLY ASKED QUESTIONS

### SPOTLIGHT ON ANAESTHETICS

#### Minimising the risk of post operative nausea and vomiting

- Avoid use of nitrous oxide
- Consider the use of intra-operative anti-emetics and prescribe first-line and rescue anti-emetics routinely.

#### Anaesthetics a key role in enabling early mobilisation

- Analgesia must be effective to allow early mobilisations
- Where possible regional anaesthetic techniques or nerve blocks should be used and long acting opiates usage should be avoided or minimised where possible
- Regular paracetamol and a non-steroidal anti-inflammatory agent (NSAID) will reduce opiate requirements
- Where regional analgesia cannot be used, patient controlled analgesia (PCA) using intravenous morphine with a combination of analgesic regime e.g. paracetamol and ibuprofen (if not contra-indicated) can be very effective at reducing morphine usage. Mobile delivery systems are helpful
- The advantages of using of spinal analgesia include lower insertion failure rate, lower rate of complications and patients can mobilise sooner

- Traditionally, epidurals can provide excellent analgesia. However, they do not always maximise mobilisation. Other approaches include local anaesthetic injection techniques, rectus sheaths or TAP block, with or without in dwelling catheter.

#### Effective analgesia in abdominal surgery

- In open abdominal surgery a variety of epidural analgesia can provide optimal post-operative analgesia. Sited in the thoracic region of the spine maximising pain relief to the abdominal area
- The use of Transversus Addominus Plane (TAP) blocks are popular with laparoscopic surgery.

#### Maintain normothermia pre and post operatively

- This reduces the risk of bleeding and wound infection.
- Hypothermia can be prevented by routinely monitoring the patient's temperature in theatre and utilising an air-warming system, along with intravenous fluid warmers, as per NICE guidance<sup>1</sup>.

<sup>1</sup> National Institute for Health and Clinical Excellence, Inadvertent perioperative hypothermia, The management of inadvertent perioperative hypothermia in adults: guidance 2008

**The Enhanced Recovery Partnership fully supports the use of intra-operative fluid management technologies to deliver individualised goal directed fluid therapy. This is recommended in the 2012-13 NHS Operating Framework<sup>1</sup>, in the Innovation, Health and Wealth Review<sup>2</sup> and in NICE Guideline MTG3<sup>3</sup>.**

### GENERAL PRINCIPLES OF ENHANCED RECOVERY FLUID MANAGEMENT

- Maintain good pre-operative hydration
- Give CHO drinks pre-op
- Use intra operative fluid management technologies to deliver individualised goal directed fluid therapy
- Avoid crystalloid excess (salt and water overload)
- Avoid post-operative i.v. fluids
- Encourage early post-operative drinking and eating.

**The Enhanced Recovery Partnership recommends the development of local guidelines and algorithms for fluid management and regular audit of compliance, in line with national guidelines, NICE recommendations and the Innovation, Health and Wealth Review (2011).**

### Aims of enhanced recovery fluid management (by the end of surgery)

- Patient is warm and well perfused with no evidence of hypovolaemia and/or tissue hypoperfusion/hypoxia
- Hb > 7g/dl
- No clinically significant coagulopathy
- 'Zero balance' (i.e. less than 1 litre positive fluid balance)
- Minimise use of vasopressors.

*Predictors of poor outcome<sup>2</sup> include: greater age, higher ASA status, high blood loss, longer than expected surgery, evidence of hypovolaemia and/or hypoperfusion (e.g. metabolic acidosis, blood lactate > 2 mmol/litre, central venous O<sub>2</sub> < 70%), greater use of vasopressors, high volumes of i.v. fluids (> 3.5 litres total), positive fluid balance (> 2 litres positive on day of surgery).*

Failure to achieve these aims suggests quality of care should be reviewed, and/ or the need for ongoing care in a higher care environment (e.g. extended recovery, HDU or ITU).

### Intra-operative fluid management

**The Enhanced Recovery Partnership recommends the use of intra-operative fluid management technologies to enhance treatment with the aim of avoiding both hypovolaemia and fluid excess. This should be decided on a case-by-case basis adhering to local guidelines in the context of NICE recommendations, national guidelines and the Innovation, Health and Wealth Review.**

Indicators of central hypovolaemia include:

- Blood and/or fluid loss
- Tachycardia
- Hypotension
- Cool peripheries
- Low CVP
- Low cardiac output
- Reduced stroke volume
- Pulse pressure variation (during IPPV)
- Pre-load responsiveness
- Low central venous O<sub>2</sub> saturation.

Central hypovolaemia should respond to volume therapy (i.e. a fluid bolus).

**The Enhanced Recovery Partnership recommends that all anaesthetists caring for patients undergoing intermediate or major surgery should have cardiac output measuring technologies immediately available and be trained to use them.**

The use of intra-operative fluid management technologies is recommended from the outset by NICE guidelines in high risk surgery and in high risk patients undergoing intermediate risk surgery. This includes the following types of cases:

- Major surgery with a mortality rate of > 1%
- Major surgery with and anticipated blood loss of greater than 500mls
- Major intra-abdominal surgery
- Intermediate surgery in high risk patients (including patients aged > 80 years)

- Unexpected blood loss and / or fluid loss requiring > 2 litres of fluid replacement
- Patients with ongoing evidence of hypovolaemia and or tissue hypoperfusion (e.g. persistent lactic acidosis).

Perceived lack of resources is not a viable excuse in the NHS. NICE have concluded that we can't afford NOT to have cardiac output measuring technologies available<sup>2</sup>. The challenge is using the resources in a targeted fashion and being able to escalate level of monitoring as deemed appropriate. Practitioners should not be constrained by lack of availability of such monitors.

**What NICE<sup>3</sup> said about Cardio-Q Doppler:**

*"...The case for adopting the CardioQ-ODM in the NHS...is supported by the evidence.*

*1.1 The CardioQ-ODM<sup>1</sup> should be considered for use in patients undergoing major or high-risk surgery or other surgical patients in whom a clinician would consider using invasive cardiovascular monitoring. This will include patients undergoing major or high-risk surgery or high-risk patients undergoing intermediate-risk surgery."*

**The GIFTASUP<sup>4</sup> guidelines said:**

*"In patients undergoing some forms of orthopaedic and abdominal surgery, intra-operative treatment with intravenous fluid to achieve an optimal value of stroke volume should be used where possible as this may reduce postoperative complication rates and duration of hospital stay."*

**What the 2010 Enhanced Recovery Implementation Guide<sup>5</sup>: Delivering enhanced recovery<sup>3</sup> said:**

*"Individualised goal-directed fluid therapy..."*

*When intravenous fluid is given, the benefits of maintaining circulatory filling and organ perfusion must be weighed against the risk of excess fluid accumulation in the lungs causing hypoxia, and, in the gut, causing nausea and delayed return of gut motility (ileus)."*

**The Enhanced Recovery Partnership recommends the regular audit of practice and outcomes benchmarked against national data for surgical procedures.**

This should ideally include:

- 30 and 90 day mortality rate (ideally risk adjusted)
- Length of hospital stay
- Same day admission rate
- Readmission rate
- Patient reported outcomes.

We propose that any NHS Trusts that wish to opt out of applying the principles of enhanced recovery should be able to demonstrate that:

- Their mortality rates are better than national average
- Their lengths of stay are comparable with the best 20% of NHS Trusts in England
- Readmission rates are better than average
- Patient satisfaction is high.

<sup>1</sup> NHS Operating Framework 2012-13

<sup>2</sup> DH Innovation, Health and Wealth Review (2011)

<sup>3</sup> NICE (2011) CardioQ-ODM oesophageal doppler monitor: Medical Technology guidance 3. National Institute for Health and Clinical Excellence, March 2011.

<sup>4</sup> British Consensus guidelines on intravenous fluid therapy for adult surgical patients, March 2011

<sup>5</sup> DH (2010) Delivering enhanced recovery: Helping patients to get better after surgery, Department of Health, March 2010.

## SPOTLIGHT ON UROLOGY

### Blood conservation

NICE guidance recommends routine use of intra-operative cell salvage in cystectomy and radical prostatectomy<sup>1</sup>. It has been shown to reduce the need for allogeneic blood transfusion and, in other specialties, has been associated with a reduced length of stay. It also avoids transfusion reactions/wrong blood etc.

### Effective opiate sparing analgesia

Bilateral rectus sheath catheters have been used successfully in open pelvic surgery to minimise epidural and opiate usage.

### New surgical techniques

In cystectomy, incision length is minimised and exenterative steps are performed with an extra-peritoneal approach.

A laparoscopic or robotically-assisted approach can also be used for suitable cases. In the case of radical prostatectomy, a minimally-invasive approach is the preferred option.

### Minimise the use of drains

Specific urological operations may require the use of drains for example, cystectomy – the drain can usually be removed in the early post-operative period (between 24 and 48 hours). Placement of a drain following radical prostatectomy is not required in all cases and should be reserved for situations where a urine leak is deemed more likely.

### Minimise the use of nasogastric tubes in abdominal surgery

Routine placement of a nasogastric tube is not required peri-operatively in patients undergoing radical cystectomy though it may be required in the later post-operative period if an ileus develops.

### Early rehabilitation in urology

To enable mobilisation, adequate analgesia is necessary. The regime chosen will be proportionate to the magnitude of the surgery and may include epidural, spinal, PCAS or local anaesthetic infusion catheters. In suitable cases, spinal anaesthesia and mobile infusion techniques (PCAS or anesthetic catheters) may offer improved mobility and a reduced failure rate compared to epidural.

<sup>1</sup> National Institute for Health and Clinical Excellence intra operative red blood cell salvage during radical prostatectomy or radical cystectomy: guidance 2008

## SPOTLIGHT ON GYNAECOLOGY

### Standardised approach

- Procedure specific pathways should be agreed by the gynaecology department for all patients undergoing inpatient gynaecological procedures
- Standardisation of peri- and post-operative pathways gives the opportunity to embed safety and quality measures such as antibiotic and VTE prophylaxis, and postoperative management as outlined in the following sections.

### Pre-operative assessment

- Information needs to be provided to patients about their procedure specific pathway to enable active participation in their recovery by reinforcing the rationale for early mobilisation, feeding, and how their pain will be managed
- Bowel preparation and pre-operative sedation are seldom indicated, and it has been shown to be safe to allow patients to drink clear fluids up to two hours prior to surgery
- The use of complex carbohydrate drinks has been shown to reduce the effects of the physiological stress response to surgery and aid recovery.

### Operative technique

Standardisation of the pathway for operative procedures within a department is very important to ensure the provision of safe, reproducible and high quality care:

- Use of minimal access surgical techniques are associated with decreased length of stay. If appropriate, open surgery should be performed through a transverse incision
- There is no evidence to support the routine use of nasogastric tubes and drains.

### Post-operative care

- Standardise the post-operative care for patients on the ward.
- Gain departmental agreement on e.g. the timing of catheter removal to allow the application of a consistent approach to managing post-operative recovery.

### Discharge

- Discharge should be criteria based: patients are discharged when they are mobilising, can control their pain by oral analgesia, are able to eat and drink. Occasionally, patients are sent home with a urinary catheter which is removed at an outpatient visit days later
- 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 post-operative work for primary care.



This is an excellent initiative with significant benefits for patients and the British Gynaecological Cancer Society wishes to lend its support. ”

**Professor Sean Kehoe**, President of the British Gynaecological Cancer Society.



## SPOTLIGHT ON MUSCULOSKELETAL

### Applying enhanced recovery to trauma procedures in musculoskeletal surgery leads to highly significant improvements to quality of care and productivity

To date, the focus within orthopaedics has been on implementing enhanced recovery to hip and knee joint replacement pathways. The Enhanced Recovery Partnership helped to; raise the profile of enhanced recovery within orthopaedics, increase the evidence base for it's implementation, engage multi-disciplinary teams and key stakeholders, and create some important drivers for change<sup>1</sup>. Consequently, the results achieved by pioneering sites<sup>2</sup> have been replicated widely across the country, and a national reduction to average LOS with high levels of patient experience has been achieved<sup>3</sup>.

However, whilst the results for hip and knee replacement patients are encouraging, two key challenges remain if we are to further improve patient outcomes and significantly increase hospital productivity throughout the country. The first challenge is that more work is required to support the adoption of enhanced recovery as the standard practice for all hip and knee

#### DID YOU KNOW?

**NHS South East Coast Orthopaedic Enhanced Recovery Programme is recommended as best practice by NHS Evidence. The savings delivered were a result of reducing the length of stay in hospital. There was a range of length of stay savings across the 11 different Trusts. The gross savings at £275 per bed are £247,500 or £5893 per 100,000 population.**

**The savings delivered were a result of reducing the length of stay in hospital. There was a range of length of stay savings across the 11 different Trusts. The gross savings at £275 per bed are £247,500 or £5893 per 100,000 population.**

replacement patients across all units. This is because there remains evidence of considerable variation in outcomes, such as case-mix adjusted length of stay across units, and also variations in pathway content, with non-adoption of recognised enhanced recovery steps in some units<sup>4</sup>.

Secondly, the challenge for hospitals that have successfully implemented enhanced recovery for hip and knee replacement patients is for them to apply the same principles to other orthopaedic procedures. Importantly, this work should not be limited to elective surgery, especially given that exemplar units are now reporting excellent results when implementing enhanced recovery pathways for their fractured neck of femur patients.

For example, at Poole Hospital, LOS has reduced and the number of patients discharged home has increased following the introduction of enhanced recovery principles. The average LOS at Poole for fractured neck of femur patients is now 12 days which is 9.3 days lower than expected for their case-mix and 8 days less than the national average of 20 days<sup>5</sup> (Figure 4 on page 34). They are further applying the principles of enhanced recovery in orthopaedic trauma, and have significantly increased the number of trauma procedures completed as day surgery over the last two years<sup>6</sup>. This has improved both patient experience and improved efficiency. This success is not in isolation; other sites such as Torbay are also reporting reduced LOS for fractured neck of femur patients following the implementation of enhanced recovery<sup>7</sup>.

<sup>1</sup> Department of Health (2011) Enhanced Recovery Partnership Programme Report - March 2011. Accessed on 12th April 2012 from [www.dh.gov.uk/prod\\_consum\\_dh/groups/dh\\_digitalassets/documents/digitalasset/dh\\_128707.pdf](http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/documents/digitalasset/dh_128707.pdf)

<sup>2</sup> Wainwright T, Middleton R (2010) An orthopaedic enhanced recovery. *Current Anaesthesia and Critical Care*. 21: 114-120

<sup>3</sup> Gordan et al. (2011) Implementing the Rapid Recovery Program in primary hip and knee arthroplasty in a UK state run hospital. *European Journal of Orthopaedic Surgery and Traumatology* 21 (3): 151-158

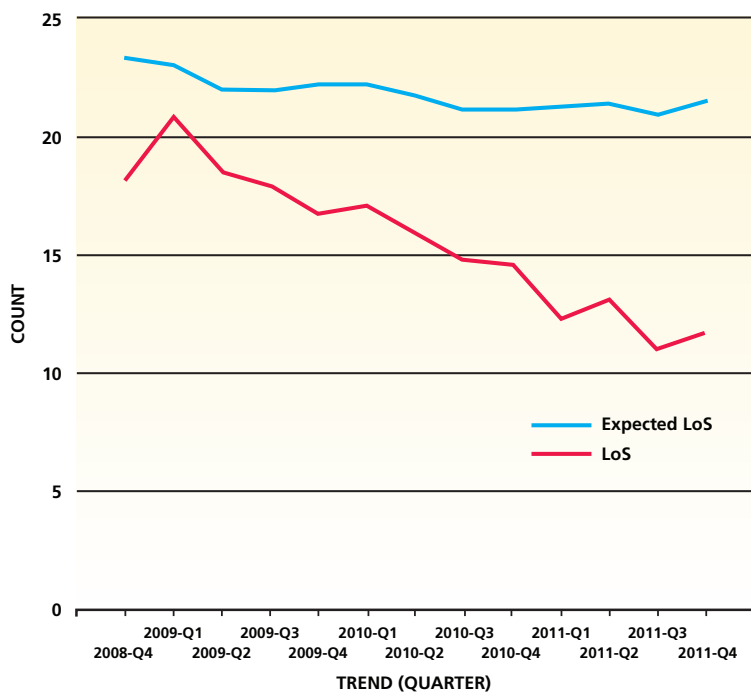
<sup>4</sup> Dr Foster (2011) Inside your hospital. Dr Foster Good Hospital guide 2001-2011. Accessed on 12th April 2012 from [www.drfoosterintelligence.co.uk/wp-content/uploads/2011/11/Hospital\\_Guide\\_2011.pdf](http://www.drfoosterintelligence.co.uk/wp-content/uploads/2011/11/Hospital_Guide_2011.pdf)

<sup>5</sup> Data from Dr Foster Practice and Provider Monitor Tool. Accessed on 12th April 2012.

<sup>6</sup> Lloyd et al. (2012) How to cut overnight stays and improve trauma pathways. *Health Service Journal*. 23rd February 2012.

<sup>7</sup> Swart M (2011) Enhanced Recovery for Patients with a Fractured Neck of Femur. Presented at the AAGBI Annual Conference 2011, Edinburgh. Accessed on 12th April 2012 from <http://videoplatform.aagbi.org/videoPlayer/?vid=53&class=videoThumb>

**Figure 4 – Actual length of stay (LOS) against case-mix adjusted LOS for fractured neck of femur patients at Poole Hospital. The introduction of enhanced recovery principles has resulted in a dramatic reduction to LOS**



The potential impact, if this work in fractured neck of femur is replicated across the country is highly significant. This is because of the high volumes of fractured neck of femurs that occur annually (there were 62,453 inpatient spells in 2011) and the current variations in LOS and mortality rates. Whilst implementing enhanced recovery within trauma surgery will present different challenges, the factors that have underpinned success in hip and knee replacement such as strong clinical and managerial leadership, a multidisciplinary team approach, a standardised pathway, and a highly organised logistical framework, remain the same.

We therefore propose that the immediate focus of our efforts should be not only to ensure the spread of enhanced recovery through elective care, but more importantly to improve clinical outcomes and patient experience for our most vulnerable patients such as those with a fractured neck of femur. It is here that we will have the biggest impact on improving the quality of care for patients, and the potential for productivity gains across the country is highly significant.

**Robert Middleton**

Director of Trauma and Consultant Orthopaedic Surgeon at Poole Hospital NHS Foundation Trust and The Royal Bournemouth and Christchurch Hospitals NHS Foundation Trust.

**Tom Wainwright**

Clinical Researcher at The Royal Bournemouth and Christchurch Hospitals NHS Foundation Trust, and Visiting Associate at Bournemouth University.

<sup>5</sup> Data from Dr Foster Practice and Provider Monitor Tool. Accessed on 12th April 2012.

## GENERAL QUESTIONS

**Carbohydrate drinking (CO loading) is safe, humane and patient's feedback indicates they like it.**

### Pre-operative

Patients are encouraged to eat up to six hours before and can drink clear fluids until two hours before. A suitable carbohydrate drink is administered to the patient the evening before surgery and on the morning of surgery (two hours before going to the operating theatre). This ensures complete gastric emptying is achieved prior to anaesthesia and removes the risk of aspiration.

### Post-operative

Patients are encouraged to commence drinking as soon as possible after surgery and build up to a full diet progressively as soon as tolerated. Post-operatively a low volume, high calorie supplement can be prescribed on a daily basis to supplement postoperative calorie intake.

**How to stop implementation of carbohydrate loading being difficult? - Adopt for every patient at pre-op and take the barriers away!**

### DID YOU KNOW?

**At Torbay Hospital, every surgical patient gets a 'doggy bag' at pre-operative assessment containing their carbohydrate drink.**

## CASE STUDY

### Pre-operative assessment clinic carbohydrate drinks Royal Devon and Exeter NHS Foundation Trust

All patients at the Royal Devon and Exeter Hospital receive carbohydrate drinks as part of their pre-operative assessment clinic visit. The patients when seen at the assessment clinic are given a bag containing two carbohydrate drinks with instructions on when and how to consume them. Also contained in the bag is an information leaflet on what is ER and what is expected of them, a leaflet on anaesthetics and if they have not had an information leaflet on their operation.

They also get a 'ticket to go' which is a summary of all the salient points we want them to adhere to, i.e. starving times and pre-op instructions and then on the reverse the discharge instructions and expectations.

#### Patient instructions

Patients are advised to take drinks before 06.30 hours, if on the morning operating list and before 11.30 hours if on the afternoon operating list. Patients are advised to consume the drinks over a period of 20 minutes.

Patients with diabetes also get two carbohydrate drink. Blood sugars are monitored on admission and all patients who have major surgery have sliding scale insulin regimes, if necessary. Guidelines for management of patients with diabetes are agreed and reviewed regularly.

#### Cost

The cost of the bags are £12.34 for 250 bags and the drinks are 1 tray of 20 drinks = £36.00. Each patient gets two drinks.

### Avoid bowel preparation

Evidence is now accepted that the use of bowel preparation prior to colorectal surgical procedures has no effect on the rate of anastomotic dehiscence and carries the risk of fluid and electrolyte imbalance prior to surgery.

### Admitting on the day of surgery

Same day admissions are safe if you have a good pre-operative assessment service. Many patients do not need a bed when they arrive, they can walk to theatre or wait in an admissions lounge.

Staggered admission times and no late changes to the theatre list will support this.

Admitted on the day of admission should be standard practice rather than the exception.

### Minimise complications

To help prevent wound infection, antibiotics should be given 60 minutes or less before 'knife to skin' as per the WHO Safer Surgery Checklist<sup>1</sup>.

<sup>1</sup> National Patient Safety Agency, WHO Safety Surgical Checklist (2009)

## ENSURING THE PATIENT HAS THE BEST REHABILITATION

Preparing for rehabilitation and re-ablement commences with the GP and continues throughout the pathway. Encouraging patients to have a role and understanding their responsibility for enhancing their own health and recovery is a vital component.

### Goal setting

Individual patient 'goal setting' is another important element of enhanced recovery. Goal setting encourages and motivates the patient. It helps patients to daily self-assess and gain confidence with their progress, as well as provide clinical teams with an assessment of progress and risk.

Anecdotal evidence has highlighted that family and friends have become actively involved in encouraging the patient to achieve their goals daily and weekly.

“ I checked how my husband was doing at every visit. It helped me know what he would be able to do when he comes home - can he still do the washing up? ”

Patient diary entry

PATIENT GOALS				
Day of surgery	Day 1	Day 2	Day 3	Day 4
<ul style="list-style-type: none"> <li>• Sit out</li> <li>• Drink</li> <li>• Eat</li> </ul>	<ul style="list-style-type: none"> <li>• Sit out</li> <li>• Eat</li> <li>• Walk</li> </ul>	<ul style="list-style-type: none"> <li>• Self wash</li> <li>• Eat</li> <li>• Walk</li> </ul>	<ul style="list-style-type: none"> <li>• Walk</li> <li>• Shower</li> <li>• Dress</li> </ul>	<ul style="list-style-type: none"> <li>• Shower</li> <li>• Dress</li> <li>• Home</li> </ul>
				

### CASE STUDY

**Integrated care pathways improve goal setting for professionals**  
**East Kent Hospitals University NHS Foundation Trust**

Introduced an integrated care pathway (ICP) documentation for gynaecological oncology patients. The ICP is goal-defined and time specific. It is being used by the surgical and nursing team, guided by target parameters to be achieved by certain pre-and post operative days. The ICP has encouraged much clearer documentation and chronological information, which has improved communication and the review of care.

### Pro-active discharge planning – Avoiding unnecessary delays

Best practice is to create a discharge plan at pre-operative assessment clinic, in collaboration with the patient and relatives/carer. Early discharge planning can identify and address any specific discharge needs.

It is important to consider who needs to be informed prior to discharge of patients, including the GP, district and community nurses. The patient also needs to be aware of their responsibilities.

The patient should be aware of the expected length of stay, and proposed discharge date. Setting this expectation and encouraging patients to actively participate in their care helps with motivating patients to achieve their goals towards the planned discharge date.

Timely patient discharge can be aided by professional teams agreeing discharge criteria guidelines. Such guidelines aid staff to take shared responsibility for the decision to discharge. They also ensure decisions are not reliant on one individual, which may delay discharge.

Delays in ordering of patient medications for discharge may also contribute delays in patient discharge. Implementation of nurse led prescription pharmacy prescriptions can avoid this, the pre-ordering of medications in the pre-operative assessment clinic can make a significant difference as can wards having pre-packed routine medication.

Clinical teams are testing patient self-medication with 'over the counter' simple analgesics provided by pharmacy. This is to promote patient self-management of their pain control and build patient confidence to avoid delays in discharge due to concerns about pain control.

#### Patients better and home sooner

Enhanced recovery promotes that the patient is better sooner, but as a safety precaution all patients, should be made aware of who and where to contact for advice and guidance if needed.

Primary care colleagues should also be informed of the patient discharge, who to contact and how to fast track patients into hospital, if necessary. They should also know what information the patient has been given.

## CASE STUDY

### Nurse-led prescriptions ordering system speeds up discharge planning

#### Taunton and Somerset NHS Foundation Trust

This nurse-led prescriptions ordering system, in combination with frequent and sustainable clinical pharmacy visits and a improved service dispensary, have maintained low levels of dispensing errors and allowed rapid prescription turnaround, with the majority of work being completed earlier in the day rather than much later. It affects missed doses and timely discharge, both of which are important quality factors.

Nurse-led prescription ordering avoids the need for additional pharmacy staff, and allows clinical pharmacists to focus on complex clinical issues rather than transcribing prescriptions. Required work is presented to the dispensary more quickly, making better use of staffing resources earlier in the day and avoiding the need for overtime later in the day.

NHS Evidence [www.evidence.nhs.uk/QIPP](http://www.evidence.nhs.uk/QIPP)

Pharmacy management and nurse-led medicines ordering: To improve efficiency and aid patient discharge.

#### Patient follow-up

Avoid unnecessary follow-ups for patients and where follow-ups are necessary a range of different approaches are being applied to the ER pathway such as:

- Patients triggered follow up, self-managed follow-up where patients ring a number to discuss any concerns or have access to an open access follow-up clinic
- For example, a 24-hour contact telephone number staffed by ward nurses may be used.

## CASE STUDY

### Patient activated telephone follow up

#### University Hospital of North Staffordshire NHS Trust

University Hospital of North Staffordshire NHS Trust provide not only a nurse activated follow up call service but also patient activated follow up. This means patients have open access to the surgical assessment unit as well as a 24 hour dedicated helpline run by nurses during office hours and the surgical nurse practitioners out of hours.

**CASE STUDY**

**Nurse activated telephone follow-up**  
**East Lancashire Teaching Hospital, Salford Royal and Wirral University Teaching Hospital**

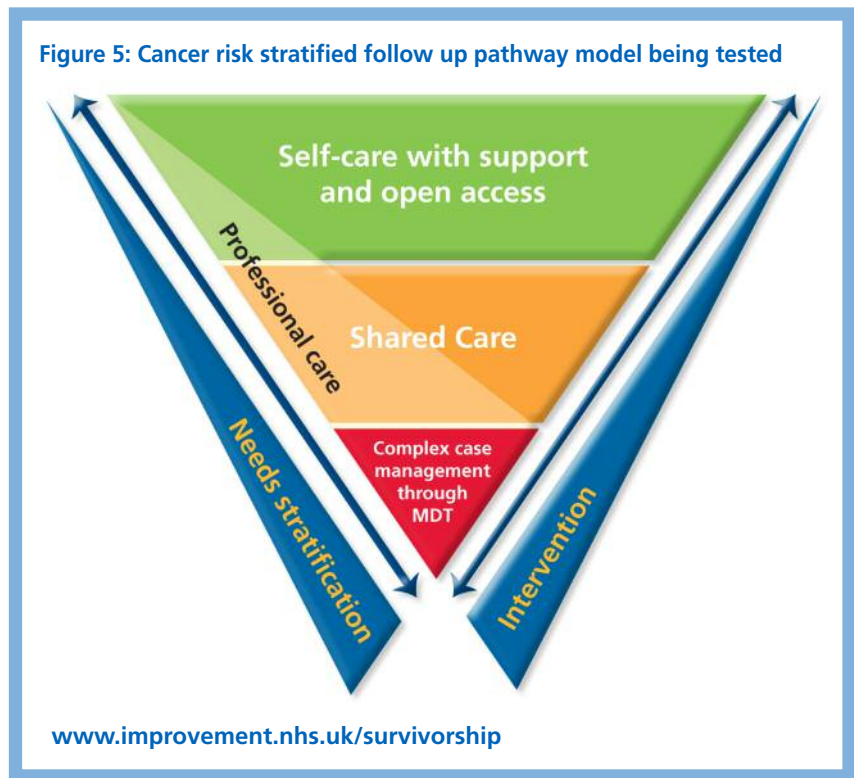
Patients described their phone calls from the nursing staff to be really helpful in continuing to rehabilitate at home. Patients feedback has indicated the calls provide reassurance and support to their family and carers.

*Videos of these patients describing their enhanced recovery experience are available on the North West SHAs DVD-rom Enhanced Recovery Training Resource.*

Email:  
[kin.lee@northwest.nhs.uk](mailto:kin.lee@northwest.nhs.uk)  
[wendylewis1@nhs.net](mailto:wendylewis1@nhs.net)  
 Web:  
[www.advancingqualityalliance.nhs.uk](http://www.advancingqualityalliance.nhs.uk)

**Professionally led follow-up**

Patients are contacted by telephone, at a specified time post discharge, for example day one, three or seven days post-discharge. This telephone consultation with patients not only enables continuity of care, education and support for patients, where needed, but also promotes patient confidence and self management. It also avoids unnecessary visits to the hospital.



**Cancer risk stratified follow up pathways (Figure 5) are currently being tested**

As best practice, healthcare professionals should discuss the purpose, duration, frequency and location of follow-up with patients and carers.

The current development of cancer risk stratified pathways and an IT based remote monitoring system aims to lead to safe, convenient and cost effective follow-up for patients. This initiative supports patients to receive care closer to home as well as providing commissioners with a more efficient pathway of care.

**Why is this relevant to enhanced recovery pathway?**

- Enhanced recovery is about the entire pathway

- There are various late effects associated with cancer where surgery may be required e.g. obstruction, hormone therapy increasing the risk of osteoporosis leading to a raised fracture risk elevated cardiovascular risk, increase risk of other cancer requiring surgery/treatment. Awareness and monitoring the risk could reduce emergency admissions
- For many patients this is the continuation of their care plan, building on the principle 'optimisation for life'.
- For some patients surgery may be the only treatment they choose or option available. Post-treatment patients are assessed and put onto the appropriate pathway
  - Self management
  - Shared care
  - Complex care
  - Transition to end of life care.

# SECTION 3 THE PATIENT ROLE AND RESPONSIBILITIES IN ENHANCING THEIR OWN RECOVERY...

BY THE ENHANCING PATIENT EXPERIENCE WORKING GROUP

“  
**No decision  
made about  
me, without  
me.**”

**Liberating the NHS:**  
Department of Health: 2010

**Patients are the reason the health service exists and current health policy explicitly recognises that we should be at the heart of the services we use.**

Service redesign and improvement of the sort provided by taking forward enhanced recovery generates opportunities to involve service users in a number of ways which contribute to its effective delivery.

**Patients have an active role in enhanced recovery**

The most important involvement is along the care pathway itself. The enhanced recovery pathway asks patients to play an active role in their care before, during and after hospital admission. Given that this model differs markedly from the more 'traditional' approach to surgery, where patients in the past have been ascribed a more passive role, the 'sick role'. Aligning patient expectations with those who are delivering the service is clearly critical to success.

**Enhanced recovery is not just patient-focused, it is patient-centred**

That is to say, its approach goes beyond just delivering the best possible clinical outcome for the patient, crucially important though that is. It exceeds this aspiration by also recognising that for the person experiencing the surgery, the clinical aspects of the whole process are just some of the means to an optimum recovery in the shortest possible time.

**What does patient empowerment mean for enhanced recovery?**

To achieve optimal recovery in the shortest possible time, as patients we will need to draw on a number of resources to help us along the different stages of the pathway.



The Enhancing Patient Experience Working Group have produced information supporting the patients' role. [www.improvement.nhs.uk/enhancedrecovery](http://www.improvement.nhs.uk/enhancedrecovery)

## EIGHT TOP TIPS FOR PATIENT EMPOWERMENT

### 1. Having ownership of the decision to opt for surgery:

If the patient has made an active decision in electing for surgery, rather than having 'been referred', then this sets the tone for an active role along the rest of the care pathway (see case study: *Shared Decision Making in Urology on page 42*).

### 2. Good communication from the GP at the time of referral about what to expect from enhanced recovery:

If expectations are aligned at the earliest stage, the whole journey is less stressful for the patient, who in turn feels more in control and better able to play their part in their recovery.

### 3. Quality assured information soon after referral:

This might be provided by the local service, with a view to a face to face follow up (e.g with a specialist nurse) to ensure that the person understands what will be involved and, most importantly of all, is comfortable with what will be expected of them. If patients 'own' the process at this stage, they will drive it more strongly later.

### 4. Practical support in advance to make post-operative recovery less difficult:

Many providers of enhanced recovery invite pre-operative patients to the hospital to meet staff and learn coping and recovery techniques such as physiotherapy before post-operative pain and distress make absorbing this new information more challenging.

### 5. Peer and/or family support:

Relevant patient groups play an important part in reinforcing positive messages of support around self-management, via a helpline service, written information or by putting people in touch with others who have benefited from self-management. Involving carers, partners, other family or close friends can also help provide a network which gives the person confidence to feel they will have support even when not in direct contact with their health professional team.

### 6. Positive reinforcement from the anaesthetist and surgeon:

It is extremely reassuring for the patient, before and during admission, to hear their specialist health professionals describe enhanced recovery techniques as normal in getting the best outcome for patients.

### 7. Knowing who to ask:

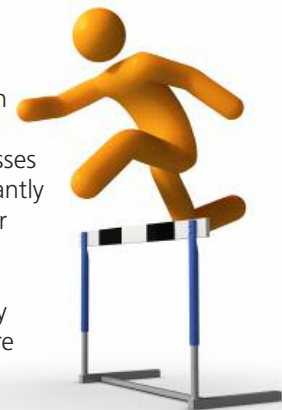
Whether the patient be at the pre, peri or post-operative stage they will have questions arising or anxieties forming which, if left unattended, could jeopardise their recovery process. It is one of the most empowering things of all to feel confident that at such times you know where you can turn to for answers, advice or support.

### 8. Anticipating a rapid recovery positively:

Whether it is early post-operative mobilisation in the ward or making the journey home, the patient will be more able to get better sooner if they have previously considered all that will be involved and know that they can access support to deal with the unexpected.

## THE BARRIERS AND ENABLERS TO AN OPTIMUM RECOVERY

- Patient's level of confidence
- Getting the right information at the right time
- Getting easy access to support along their journey; or for social and practical issues when at home
- Knowing how to cope at home whilst continuing to recover
- Social care arrangements being made in the first part of the pathway is not only reassuring for the individual, but addresses an issue which unattended can significantly increase the risk of delay in discharge or unplanned readmission
- Empowering people to help themselves throughout the pathway becomes a key determinant in the overall quality of care ultimately experienced as a result of enhanced recovery.





**Learning from patients: Using the past to improve the future**

Patients' experience of the service can be very different from what was intended and it would run contrary to the principles of continuous improvement merely to assume a high quality experience. Only by providing structured consultation using a variety of methods can they tell us what works, what doesn't and what could be done better.

**DID YOU KNOW?**

The enhanced recovery partnership supports the implementation of the 14 NICE Quality Statements.

Patient Experience in Adult Services, NICE, February 2012.

**FIVE ELEMENTS OF SHARED DECISION MAKING**

- Inform patients when there is a choice about their treatment
- Explain what options are available to them
- Explain the possible benefits and risks of each option
- **Find out what is important to the patient - what are their values?**
- Engage with the patient to reach a decision that is right (and safe) for them.

**SHAPING THE FUTURE**

The Wirral Hospital Enhanced Recovery Team run 'patient parties' to seek feedback: so much more inviting and engaging than just sending a cold contact questionnaire or running something which might otherwise be termed a focus group.

In February 2012 for instance, around 100 patients were invited to an event, informal in tone but highly structured, to provide feedback from their experience of enhanced recovery. Senior clinicians from relevant specialties were also present, as were members of the national advisory board for enhanced recovery. Their views were therefore used to review service delivery not only in the region, but also contributed to developing enhanced recovery information nationally through the *'My role and my responsibilities in helping to improve my recovery'* leaflet.

**ARE WE GETTING IT RIGHT? PATIENT FEEDBACK**

Danny felt that the enhanced recovery admission letter was excellent and informed him what to expect during his stay in simple laymen's terms.

Sam thought that the pre-load drinks gave him an extra boost and he wasn't kept starving for 12 hours prior to surgery like in the past. Being able to have a drink of 400mls of clear fluid 90 minutes before surgery was great as he usually drinks plenty of water in a day - "It felt like normal."

Tom said the 'big plus' was having no pain following surgery. He was surprised at this.

Derek felt that his daily goals were a great incentive to his recovery. He felt this gave him greater involvement in getting better.



Arthritis Care is delighted to see enhanced recovery becoming ever more widely used for people with arthritis undergoing joint surgery. We believe service users should always be informed of their choices and given clear information about what will happen before, during and after their hospital stay. This allows them to support themselves and makes for a better experience during a stressful period in their lives. The person-centred approach taken by enhanced recovery is one we wholeheartedly commend.



#### Arthritis Care

Sue thought the pro-cal shots were a very good idea. She felt that the daily goals inspired her to get 'up and around' and get ready for home.

Paul stated he would have preferred to come into hospital on the morning of surgery as he 'would have had a better night's sleep at home.' He felt he was hanging around on the ward waiting for something to happen.

#### The role of the patient and the quality of their outcome and their experience from start to finish is at the heart of enhanced recovery

However, this section stands alone because all of the components of enhanced recovery described elsewhere ultimately converge in one place only: the life of the patient who, as a result of those components, is better sooner.

The above are taken from real patient feedback on the enhanced recovery pathway

## CASE STUDY

### Shared decision making (SDM) in urology - helping patients to make the right decision for them<sup>1</sup>

The SDM consultation looks at the treatment options for male lower urinary tract symptoms. This is supported using the NHS enlarged prostate booklet for patients.

The patient is not expected to make a decision between possible treatment options at a first face to face consultation, and takes the booklet and DVD home for further deliberation – specifically, he is encouraged to write in the booklet what is important to him in regard to the options and possible benefits and risks. At a follow-up telephone consultation the clinician supports the patient to make a decision based on his knowledge and understanding of the options, referring to his notes on personal values. Through implementing SDM, supported by a patient decision aid, a routine second face to face appointment has in many cases been replaced by the telephone follow-up. If the patient is finding it difficult to make a decision and needs further support, a further face to face appointment is made.

The urology team have found, following implementation of SDM:

- Patient pathways and the consultation itself have been streamlined
- Patients value the decision aid tool and share it with friends and family – it prompts them to ask questions to a degree and depth not previously experienced by clinical staff
- Imparting a full understanding of the implications of treatment choices helps manage patient expectations and reduces the possibility of regret, following irreversible treatment choices as surgery
- Fewer men have opted for surgery as a first treatment choice.

<sup>1</sup> The MAGIC shared decision making programme is testing how best to implement shared decision making in routine clinical practice. The programme is supported by The Health Foundation. [www.health.org.uk/areas-of-work/programmes/shared-decision-making](http://www.health.org.uk/areas-of-work/programmes/shared-decision-making)

## SECTION 4 **PROGRESS AND FULFILLING THE POTENTIAL: A MEASURED APPROACH**

The Enhanced Recovery Partnership took a measured approach, as one way of assessing the impact and spread:

- Good progress has been made, but there is further to go
- Variation in practice still exists across the country in the four specialties; colorectal, gynaecology, urology and muscular skeletal
- We still need to focus on reducing variation in practice.

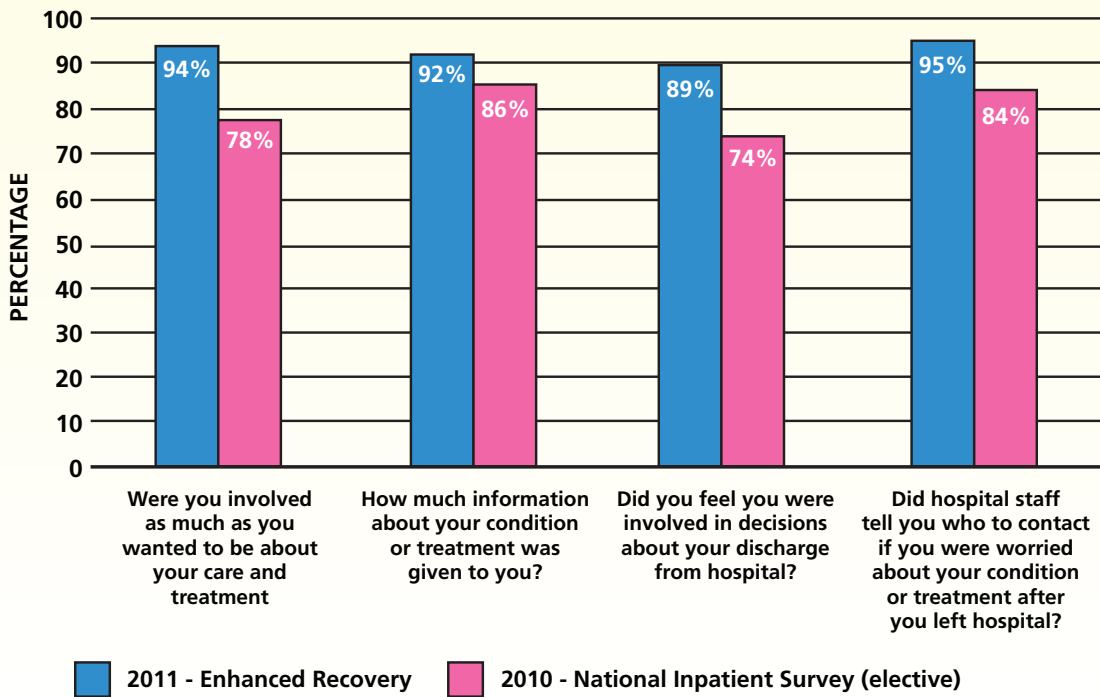
Data was captured relating to patient experience, lengths of stay, day of surgery admissions, re-admissions and compliance with elements of enhanced recovery.

This information in this section was drawn from a variety of sources including Hospital Episode Statistics (HES), the national patient survey and audit data submitted by trusts onto the Enhanced Recovery Toolkit. [www.natcansatmicrosite.net/enhancedrecovery](http://www.natcansatmicrosite.net/enhancedrecovery)

### THE NEWS IS GOOD

- NHS Trusts implementing enhanced recovery score significantly better than the general experience of inpatients captured in the national patient survey
- Lengths of stay for the eight procedures in the Enhanced Recovery Programme have been falling since the 2008-09 baseline
- Readmission rates for organisations known to have implemented enhanced recovery for the eight procedures are not significantly higher or lower than the national average
- Trusts implementing enhanced recovery are able to achieve high levels of compliance with most elements of the ER pathway (13 of 19 elements show at least 80% compliance)
- Good progress has been made in reducing lengths of stay. Despite rises in activity for almost all these procedures, there were nearly 70,000 fewer bed days for these procedures in 2010-11 than in 2008-09.

Figure 6: Patient experience: Enhanced Recovery compared to National Inpatient Survey



**Patient experience**

Figure 6 shows the levels of patients experience reported in trusts who are implementing enhanced recovery. The questions used were taken from the national inpatient survey and so are well validated. These questions have all been used in the national survey since 2007 and show similar levels of achievement each year to the percentages shown for 2010.

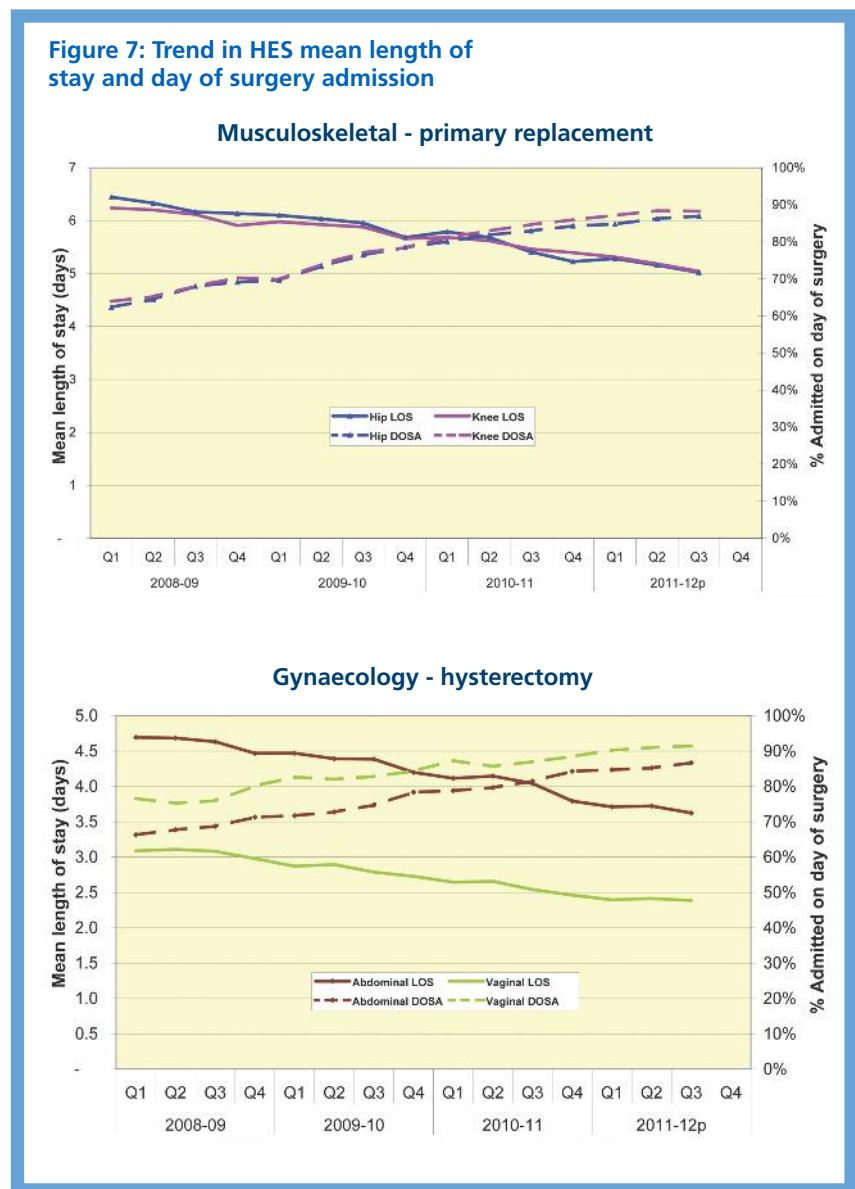
As can be seen from figure 6, trusts implementing enhanced recovery score significantly better than the general experience of inpatients. *The sample size is 2,600 for the enhanced recovery and 24,000 for the National Inpatient Survey.*

**Lengths of stay**

Lengths of stay (Figure 7) for the eight procedures<sup>1</sup> in the Enhanced Recovery Programme have been falling since the 2008-09 Hospital Episodes Statistics (HES) baseline.

Contributing to this is an increase in the percentage of patients admitted on the day of their surgery rather than in advance. However, most of the reduction is accounted for by shorter lengths of stay after surgery.

Sites known to have implemented enhanced recovery for these procedures tend to have lower lengths of stay and higher rates of day of surgery admission than the national average.



<sup>1</sup> Source: Hospital Episodes Statistics, The Information Centre for Health and Social Care. Trends are shown for elective single episode spells with a main operation of Primary hip replacement (the primary part of each OPCS 4.3 code W37 to W39, W46 to W48 and W93 to W95 plus W46.0, W47.0 or W48.0), Primary knee replacement (W40.1, W41.1 or W42.1), Colectomy (H05 to H10), Excision of rectum (H33 except H33.7), Hysterectomy abdominal (Q07), Hysterectomy vaginal (Q08), Bladder resection (M34) and Prostatectomy (M61). 2011-12 data are provisional.

Figure 7 (continued): Trend in HES mean length of stay and day of surgery admission

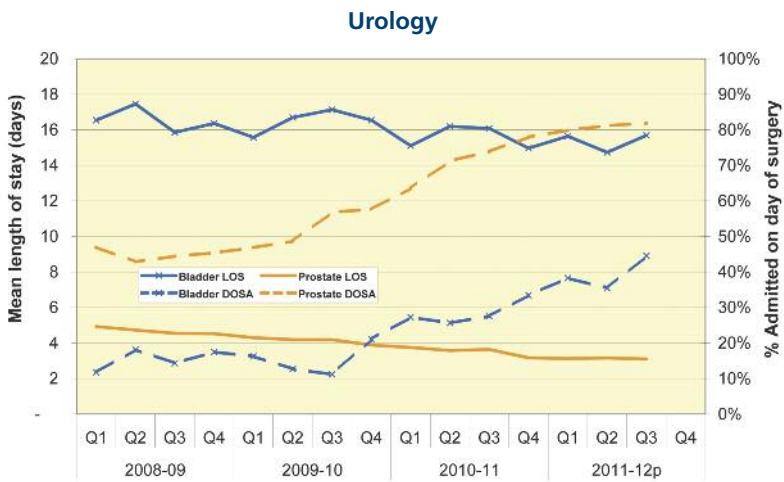
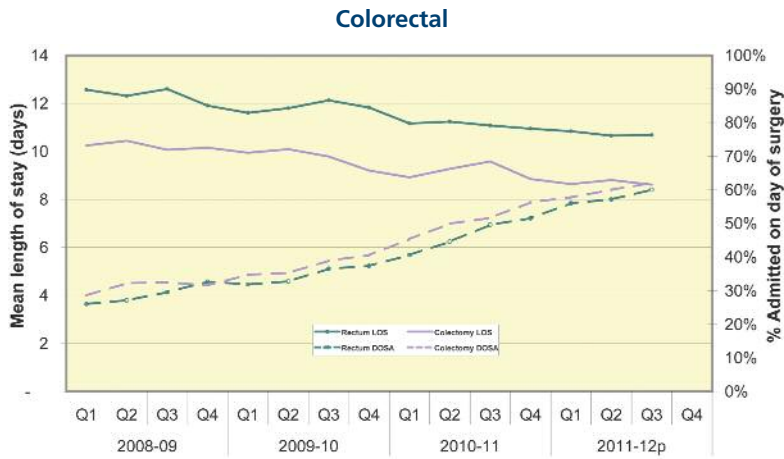
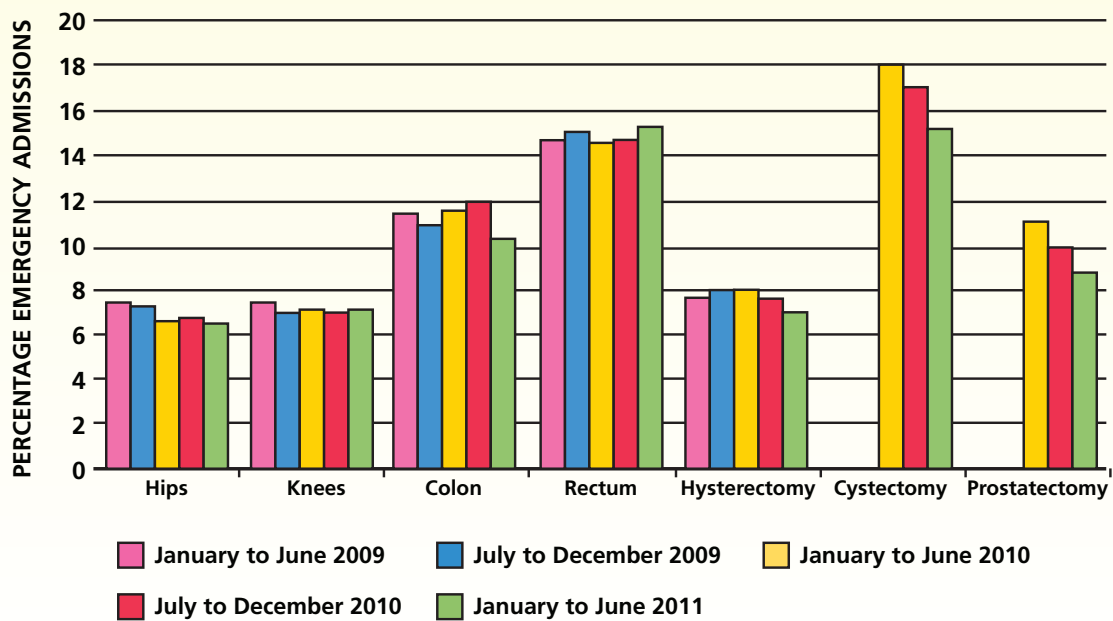


Figure 8: Trend in HES emergency readmissions following surgery



**Readmissions**

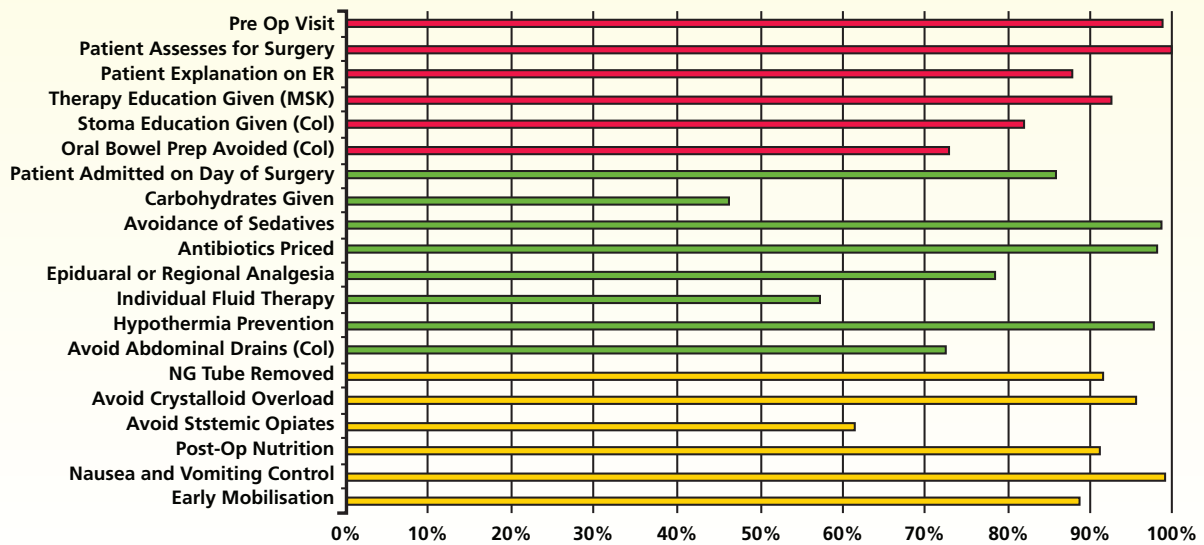
Figure 8 shows changes in readmissions over the period January 2009 to June 2011 in the procedures the enhanced recovery partnership has focussed on over the past two years.

The percentage of patients readmitted as an emergency following a hip replacement has reduced in recent years, with variation in the trend for other operations. The readmission, within six weeks of discharge for hip and knee replacements or 28 days for the other operations, may be for any reason and not necessarily related to the surgery.

Readmission rates for organisations known to have implemented enhanced recovery for these procedures are not significantly higher or lower than the national average.

This demonstrates that as enhanced recovery becomes more widespread, **there is no increase in readmissions** but there is a net benefit to trusts and patients with a reduction in length of stay.

Figure 9: Percentage compliance with enhanced recovery components: October to December 2011



**Compliance with elements of enhanced recovery**

Figure 9 shows the compliance against the elements of enhanced recovery as recorded on the national ER toolkit for patients admitted from October to December 2011. This is shown for colorectal, musculoskeletal, gynaecology and urology patients except where indicated.

The graph shows that sites implementing enhanced recovery are able to achieve high levels of compliance with most elements of the pathway (13 of 19 elements above show at least 80% compliance).

Of the other six elements only one element, carbohydrate given prior to surgery, showed compliance of less than half of patients (46%).

Clearly this is still an area where there is a modest cost involved and some variation in its adoption (outside colorectal) and so is an area which may benefit from further evidence.



### Dr Foster findings

Dr Foster carried out some independent research on the links between a rapid recovery pathway, length of stay, emergency readmissions and re-operation rates in providers of hip and knee replacements. Trusts were asked to identify which elements of a rapid recovery pathway they had implemented locally. The survey showed that hospitals that followed the rapid recovery pathway have significantly lower numbers of patients spending a long time in hospital (Ref: Dr Foster Hospital Guide 2011).

Progress has been made in implementing enhanced recovery and in reducing lengths of stay since the baseline. Despite rises in activity for almost all these procedures, there were nearly 70,000 fewer bed days for these procedures in 2010-11 than in 2008-09. However, estimated annual savings still possible for these specialties, from further implementation of enhanced recovery, amount to 120,000 bed days per year.

### Bed day savings

National implementation of enhanced recovery in colorectal, gynaecology, urology and musculoskeletal surgical specialties was estimated to offer bed day savings of 140,000 to 200,000 per year. This potential impact was based on improvement in elective lengths of stay across most providers to a target level already achieved or exceeded by one in ten providers in the baseline year 2008-09.

**Table 1: Impact of potential improvements in length of stay assessed using 2010-11 HES data**

Procedure group	2010-11 mean LOS	2010-11 median LOS	No. major providers	No. patients	Target LOS (from baseline)	Potential bed days saved (1)
Primary hip replacement	5.5	5	156	60,600	5.1	31,300
Primary knee replacement	5.5	5	156	67,300	5.0	38,200
Colectomy	9.2	7	147	10,400	7.9	10,200
Excision of rectum	11.1	8	146	10,000	9.1	15,800
Abdominal hysterectomy	4.0	3	156	29,800	3.1	19,700
Vaginal hysterectomy	2.6	2	146	7,000	2.0	3,400
Bladder resection	15.6	13	54	1,300	12.5	3,400
Prostatectomy	3.5	3	64	3,900	3.1	2,300
						<b>124,300</b>

(1) Based on improvements of the majority of providers to the target (LOS)

**Table 2: Annual impact of potential improvements in mean LOS assessed using 2010-11 HES data**  
**Mean LOS improves to best decile or quintile (using 2010-11 as a baseline)**

Procedure group	2010-11 mean LOS	2010-11 median LOS	No. major providers	No. patients	Target LOS (1) (decile)	Target LOS (2) (quintile)	Potential bed days saved (1)	Potential bed days saved (2)
<b>Elective</b>								
Oesophagogastrectomy	17.2	14	36	1,100	5.0	14.1	10,700	3,400
Gastrectomy for cancer	14.0	11	38	900	10.4	11.3	2,400	1,800
Pancreaticoduodenectomy	17.6	14	20	700	13.4	14.0	2,500	2,200
Partial excision of liver	10.2	8	20	1,600	6.7	8.1	4,400	2,600
Excision of lung	8.6	7	31	5,700	6.4	7.7	10,300	4,800
Breast excision and reconstruction	5.1	5	106	4,000	2.6	3.3	6,900	4,800
Breast reconstruction no excision	2.8	2	110	7,700	1.2	1.7	9,300	6,400
Vascular AAA	7.0	5	82	4,700	4.4	5.4	8,400	5,000
<b>Emergency</b>								
Primary hip replacement	16.7	13	139	17,600	11.7	13.0	68,400	50,800
Closed reduction bone fracture	9.2	5	145	30,200	5.0	6.4	96,800	64,500
Primary open reduction bone fracture	6.6	3	150	46,600	4.0	4.9	91,600	60,200
Replacement head of femur	17.1	13	127	15,000	12.6	13.5	52,800	42,900
Colectomy	15.2	11	127	3,100	10.2	11.4	11,800	8,900
Excision of rectum	18.2	14	84	1,700	13.4	14.3	4,500	3,500
Excision of adnexa of uterus	2.4	2	144	7,100	1.8	1.9	3,600	2,800
Therapeutic endoscopic ops on ureter	4.5	3	115	4,600	3.1	3.5	5,200	3,800
Excision of appendix	3.3	3	142	30,300	2.7	2.9	14,000	10,500
<b>Delivery</b>								
Emergency C-section	4.2	3	143	99,500	3.5	3.7	47,000	34,100
Elective C-section	3.1	2	143	66,800	2.5	2.6	29,000	24,000
							<b>479,600</b>	<b>337,600</b>

**FUTURE POTENTIAL**

**Further specialities**

Enhanced recovery may be applied to a range of specialities. Areas where further potential estimated bed day savings have been identified are shown in table above. This excludes operations largely performed as day cases, which may bring other benefits.

As discussed earlier, applying the principles to some emergency admissions, caesarean sections and medical admissions could save more hospital bed days.

This potential impact was based on improvement in lengths of stay across most providers to a target level already achieved or exceeded by between one in five and one in ten providers in the baseline year 2010-11. As before, the potential bed day saving excludes a minority of providers with the longest lengths of stay, which may not be able to achieve such reductions due to local factors such as high underlying levels of co-morbidities or socio-economic factors.

Beyond this, enhanced recovery could come to be applied as standard across a range of surgery and, where appropriate, acute medical healthcare, to improve the patient experience and support earlier discharge home.

# SECTION 5 WHY COMMISSIONERS ARE IMPORTANT TO ENHANCED RECOVERY

“Commissioners have a strong desire to do the right thing.”

Commissioner

### Commissioners have a key role and responsibility

- To ensure that the healthcare they procure for their patients improves outcomes and patient experience.
- To co-ordinate and ensure collaboration across partners.
- Commissioners have a lead role in ensuring that the contractual agreements with providers support the delivery of services.

### Enhanced recovery contractual arrangements and useful levers

There are a number of contractual levers that commissioners may wish to support providers in establishing enhanced recovery as everyday practice these include the use of transformational monies, CQUINs<sup>1</sup> and service specifications.

Incentivising commissioners through the Commissioning Outcomes Framework as it is developed would show a clear commitment to quality improvement and patient experience across the pathway.

### DID YOU KNOW?

Implementation of enhanced recovery will improve outcomes, patient experience and safety and supports the delivery of the NHS Outcomes Framework Domains 3, 4 and 5<sup>2</sup>.

### CQUIN payments to support providers in the establishment of enhanced recovery

NHS London developed the CQUIN shown on page 52, which has been implemented across the capital.

Other CQUINs have been developed from the North West, South East and South West of the country. These are shown on pages 53, 54 and 55.

<sup>1</sup> Department of Health (2010), Using Commissioning for Quality and Innovation (CQUIN) payment framework

<sup>2</sup> NHS Outcomes Framework, Liberating the NHS: Transparency in Outcomes- a framework for the NHS (2010)

## Enhanced recovery and high impact innovations

Innovation, Health and Wealth<sup>1</sup> says:

“It is not our intention, nor is it appropriate, to make judgements about compliance from the centre, but we will require commissioners to satisfy themselves that all eligible organisations are delivering the high impact innovations set out in this report in order to pre-qualify for CQUIN payments. This will take effect in 2013/14.”

Enhanced recovery supports the adoption of one of the high impact innovations, individualised goal directed fluid therapy using fluid management technologies (see section 2).

### The London CQUIN

**In 2011 CQUINs were worth 1.5% of out-turn, rising to 2.5% in 2012/13**

In 2011, London introduced a CQUIN payment to incentivise the adoption of enhanced recovery surgical pathways. The CQUIN covered eight elective operations in four specialities:

- In urology, cystectomy and prostatectomy
- In gastrointestinal surgery, colectomy and rectal resection
- In gynaecology, abdominal and vaginal hysterectomy
- In orthopaedics, hip and knee replacement.

The CQUIN had four components, each worth 25% of the total value.

- 1. Recording of comprehensive information about enhanced recovery patients on the national database**, to allow Trusts to better understand enhanced recovery implementation. The reporting requirement applied to all patients who are treated on a planned basis (i.e. excluding urgent/emergency admissions) undergoing the relevant operations.
- 2. To ensure that the majority of patients admitted for colorectal surgery receive goal directed fluid therapy**, the Trust qualified for full payment if  $\geq 80\%$  of patients undergoing planned colorectal surgery performed receive goal directed fluid therapy.
- 3. Targeted day of surgery admission**, to drive rational peri-operative pathways, the Trust qualified for full payment only if  $\geq 80\%$  of eligible patients were admitted on the day of surgery.
- 4. Targeted length of stay for patients undergoing the eight specified operations**. The target for each procedure was to equal the national median from the previous year. Since average length of stay is longer in London than nationally, for many London Trusts these were challenging stretch targets.

### DID YOU KNOW?

The National Technology Adoption Centre is preparing an 'Adoption pack for intra-operative fluid management technologies'. This should be available by the spring 2012. For further information go to: [www.ntac.nhs.uk](http://www.ntac.nhs.uk)

<sup>1</sup> NHS Innovation, Health and Wealth. Accelerating Adoption and Diffusion in the NHS (2011)

### Kent, Surrey and Sussex approach to CQUIN incentives: 2012/13

CQUIN payments to incentivise improvements in the quality of care have been used by the Enhancing Quality Programme (EQ) across Kent, Surrey and Sussex since 2010. They have proved successful in encouraging clinical engagement and have driven real improvements in the care received across many different clinical pathways.

Enhanced Recovery (ER) formally joined with EQ in 2011, and due to the measurable benefits seen by EQ, there are plans to introduce CQUIN payments for improvements made in 3 of the 4 ER pathways (Colorectal, Orthopaedic and Gynaecology) for 2012/13.

In order to incentivise improvement a baseline minimum data set was agreed with nominated clinical and trust leads, which is completed on a monthly basis. Currently seven out of the ten trusts in the region are collecting data for at least two of the pathways, with the other three looking into ways they can start collecting data imminently. Two months of data have currently been collected.

A process of identifying the areas for improvement has been underway, as there are too many data points to incentivise them all. These areas have been determined clinically, with the input of consultants, nurses, physiotherapists, occupational therapists, other allied health professionals, and with the trust nominated leads. There will be two areas for improvement for each pathway, and although discussions are still ongoing it is likely that these areas will include:

- Patient education of ER and their role in their recovery
- Early mobilisation
- Carbohydrate loading
- The use of a post operative fluid policy
- Peri-operative cardiac output monitoring.

#### CQUIN components

- Each trust will be required to submit data, on an agreed spreadsheet, each month
- Weightings for each pathway were agreed to incentivise data collection prior to the beginning of the financial year 2012/13. Three consecutive month's data must be received in order to establish a baseline.
- CQUIN weighting adjusted according to baseline start date.

The following weightings apply November, December 2011 and January 2012:

- Orthopaedics – 9% of EQ&R CQUIN
- Colorectal – 8%
- Gynaecology – 8%

For trusts establishing their baseline during April, May and June 2012 reduced weightings will apply as follows:

- Orthopaedics – 5% of EQ&R CQUIN
- Colorectal – 4%
- Gynaecology – 4%
- The total EQ&R CQUIN will be worth 0.5% of a trusts SLA (or 20% of the total CQUIN money available, which will be 2.5% of SLA)
- Orthopaedics was weighted slightly higher to reflect the larger volumes of patients going through this pathway (and thus larger amounts of data to be collected).

### Wirral University Teaching Hospital NHS Foundation Trust CQUIN Example 2011/12

The CQUIN, at the Wirral University Teaching Hospital NHS Trust was developed in a collaborative way with ten contractual ERP specialty pathways agreed through a series of meetings between GPs, commissioners and lead clinicians from the acute trust.

- **Colorectal:** All resection surgery and reversal/ closure of stoma
- **Orthopaedics:** Elective primary hip and knee surgery
- **Urology:** - cystectomy and prostatectomy
- **Gynaecology:** Endometrial cancer and anterior/posterior repair prolapse surgery
- **Vascular:** Aortic surgery and amputations.

The CQUIN identified key milestones for providing evidence of implementation of ERP elements within all pathways and achieving agreed targets of length of stay. (Milestones for every pathway = Patient and carer educated pre op, oral bowel prep avoided, DOSA, early feeding, mobilisation within 24 hours and team led discharge). Each pathway had a % of CQUIN scheme available.

A minimum data set (<https://www.natcansatmicrosite.net/enhancedrecovery>) was reported monthly using the national reporting tool and local patient experience measures. Rules for partial achievement of milestone were agreed.

An ERP project board chaired by the Director of Nursing met regularly to monitor progress (against agreed milestones) and support roll out, ironing out any issues and maintaining support for delivery.

#### Milestones

Date/period milestone relates to	Rules for achievement of milestones (including evidence to be supplied to commissioner)	Date milestone to be reported	Milestone weighting (% of CQUIN scheme available)
Q1 2011/12	Identify individual(s) responsible for reporting and analysing ERP data in line with national reporting tool by end of June 2011	July 2011	1.00%
Q1 2011/12	Implement colorectal and gynaecology pathways by the end of Q1	July 2011	4.00%
Q2 2011/12	Implement orthopaedic, urology and vascular pathways by the end of Q2	October 2011	4.00%
Q2 2011/12	Identify baselines for length of stay (LOS) from 2010/11 and agree targets with commissioners for each ERP pathway by end of Q2 2011/12	September 2011	1.00%
Q4 2011/12	Achieve agreed LOS targets for each pathway by end of Q4	April 2012	2.00%
<b>Total</b>			<b>12.00%</b>

### Exeter CQUIN

In the first year (2011), payments were seen as an encouragement to develop pathways in the four surgical areas. Over the next 12 months, enhanced recovery pathways will be rolled out across most elective surgical procedures. NHS Devon would like to incentivise a greater pace of change for benefit across the health system as a whole. Fitness for Surgery measures are included in this CQUIN to help evaluate the impact of measures being taken in primary care to better prepare patients ahead of surgery.

Rules for CQUIN specify elective procedures in those specialties not specify specific procedures but those below reflect actual activity.

Urology: Cystectomy and radical prostatectomy	Colorectal: all elective bowel resections
Gynaecology : abdominal hysterectomy	Orthopaedics: all TKR and THR

The content of the baseline and progress assessments must be at individual patient level. This is supported by internal audit of the components of ER pathways, including surgical risk assessment, Fitness for Surgery assessment tool, procedure, surgeon, anaesthetist, HDU bed days, ITU bed days and length of stay.

#### Numerator

- No. of elective inpatients in the above specialties having a documented enhanced recovery pathway
- %, median and aggregate reduction in length of stay in the above patient groups compared to 2009/10 and 2010/11 for the given procedures
- %, median and aggregate reduction in HDU and ITU length of stay in the above patient groups compared to 2009/10 and 2010/11 for the given procedures.

#### Denominator

- Total number of patients undergoing elective inpatient surgery in each of the specialties identified in this CQUIN incentive scheme.

The following milestones were also linked to CQUIN payments:

Date/periop milestone relates to	Rules for achievement of milestones (including evidence to be supplied to commissioner)	Date milestone to be reported	Milestone weighting (% of CQUIN scheme available)
Q2 (Sept)	Baseline assessment for orthopaedics	Sept 30th 2011	10%
Q3 (Oct)	Baseline assessment for urology, gynaecology, colorectal and one further agreed specialty. Action plan for orthopaedics.	Oct 30th 2011	30%
Q3	Action plan for gynae, colorectal, urology and the one further agreed specialty (November). Progress assessment for orthopaedics (December).	Nov 30th 2011 Dec 31st 2011	20%
Q4	Progress assessments for orthopaedics, colorectal, urology, gynaecology and the one further agreed specialty.	15th Mar 2012	20%
Q4	Achievement of the milestones described in the agreed Q3 action plans.	15th Mar 2012	20%
<b>Total</b>			<b>100%</b>

**Regional Commissioning Frameworks**

NHS Midlands & East has required through their Regional Commissioning Framework 2012/13, that by March 2013 all commissioners have included enhanced recovery in contractual agreements with providers so that all providers implement enhanced recovery for the four clinical specialities identified by the national programme. Suggested key markers for each of the four specialities have been listed as follows:

**Midlands & East SHA Regional Commissioning Framework Service Specification for Enhanced Recovery**

**COLORECTAL**

- Minimum 75% of patients admitted on the day of surgery
- All elective patients seen in a pre-admission clinic and pre-operatively
  - Patients receive pre-op stoma therapy education
  - High risk patients are seen by an anaesthetist
  - Formal, written discharge plans are made pre-operatively
- All patients receive carbohydrate loading pre-operatively
- All patients receive goal-directed fluid therapy using fluid management technologies
- Minimally invasive surgery is offered to all suitable patients (according to criteria defined in the Cancer Manual)
- All patients participate in protocol driven active mobilisation programme available seven days a week
- The hospital has an acceptable median length of stay (calculated according to the national median LOS)
- Patient satisfaction scores are documented and are demonstrably favourable e.g. more than 85% of patients agree or strongly agree that their post-operative pain was managed well
- Re-admission data is acceptable and comparable with the national average
- A discharge protocol is in place which involves a post-operative phone-call and written instructions for the patient on how to contact the team in the event of problems.

**ORTHOPAEDICS**

- More than 95% of patients admitted on the day of surgery
- All elective patients seen in a pre-admission clinic and pre-operatively receive
  - Pre-operative physiotherapy education and occupational therapy assessment is carried out (hip and knee school)
  - High risk patients are seen in an anaesthetic pre-operative assessment clinic
  - A formal written discharge plan is made
- Anaesthetic protocols are in place
- All patients participate in protocol driven active mobilisation programme available seven days a week
- The hospital has an acceptable median length of stay (calculated according to the national median LOS)
- Patient satisfaction scores are documented and are demonstrably favourable e.g. more than 85% of patients agree or strongly agree that their post-operative pain was managed well
- Re-admission data is acceptable and comparable with the national average
- A discharge protocol is in place which involves a post-operative phone-call and written instructions for the patient on how to contact the team in the event of problems.

**UROLOGY**

- More than 95% of patients admitted on the day of surgery
- All elective patients seen in a pre-admission clinic and pre-operatively receive
  - A formal written discharge plan is produced.
  - High risk patients are seen in an anaesthetic clinic
  - If applicable, stoma therapy education should be given pre-operatively
- Anaesthetic protocols are in place
- All patients participate in protocol driven active mobilisation programme available seven days a week
- The hospital has an acceptable median length of stay (calculated according to the national median LOS)
- Patient satisfaction scores are documented and are demonstrably favourable e.g. more than 85% of patients agree or strongly agree that their post-operative pain was managed well
- Re-admission data is acceptable and comparable with the national average
- A discharge protocol is in place which involves a post-operative phone-call and written instructions for the patient on how to contact the team in the event of problems.

**GYNAECOLOGY**

- More than 95% of patients admitted on the day of surgery
- All elective patients seen in a pre-admission clinic and pre-operatively receive
  - A formal written discharge plan is produced
  - High risk patients are seen in an anaesthetic clinic
  - If applicable, stoma therapy education should be given pre-operatively
- Anaesthetic protocols are in place
- All patients participate in protocol driven active mobilisation programme available seven days a week
- The hospital has an acceptable median length of stay (calculated according to the national median LOS)
- Patient satisfaction scores are documented and are demonstrably favourable e.g. more than 85% of patients agree or strongly agree that their post-operative pain was managed well
- Re-admission data is acceptable and comparable with the national average
- A discharge protocol is in place which involves a post-operative phone-call and written instructions for the patient on how to contact the team in the event of problems.



### Positioning enhanced recovery within the integrated system operational plans

Commissioners should identify how the system will collaboratively establish enhanced recovery, ensuring that providers are supported through the implementation phases with initiatives such as use of CQUINs or transformation funds to enable changes in staffing or equipment requirements.

As a part of the plans for the implementation of enhanced recovery, the PCT clusters, as the system managers, will ensure that capacity i.e. bed availability is adjusted to reflect changes in length of stay.

As local health economies review the capacity required in the acute setting the impact of Enhanced Recovery should be factored into any future changes in the bed requirements of acute providers.

### Best Practice Tariffs (BPT)

BPTs are prices set as part of the national tariff list to financially incentivise providers to adhere to evidence based best practice. Such incentives can be useful but there needs to be careful consideration about plans in place to ensure sustainability of good practice post incentive. There are BPTs for hip and knee surgery supporting enhanced recovery. Commissioners need to ensure the sustainability of good practice post incentive.

## BENEFITS FOR COMMISSIONERS

### Cost savings:

Commissioners can make cost savings from fewer complications, reduced length of stay and lower conversion rates. Providers will release capacity as length of stay will fall as part of the implementation of ER. Commissioners will want to work closely with providers to plan for how this capacity should be used for their population.

### Collaboration and partnership working:

Clinically led commissioning requires joint working across public health, social, primary and secondary care. Enhanced recovery encourages clinically led service redesign across all the partners.

### Benefits to patients:

Faster recovery is of enormous benefit to patients. However, there are also less obvious benefits such as a greater degree of informed and shared decision making by patients.

### Delivering equity for the population:

The clinical case for enhanced recovery being standard practice of good care for all patients is clear. Taking this as the starting point commissioners will want to commission enhanced recovery for their population to ensure all their patients benefit.

CLINICAL COMMISSIONING GROUPS MAY NEED TO INVEST A LITTLE TIME TO UNDERSTAND WHY COMMISSIONERS ARE IMPORTANT TO ENHANCED RECOVERY.



## THE SIX MINUTE BRIEFING

1. Commissioners and GPs deal with the totality of the patient everyday. How can this way of working and thinking become routine cross primary and secondary care for every patient?

Commissioning enhanced recovery pathways as every day practice continues to support the totality of patient care.

2. As clinical commissioning groups go through an authorisation process to become an independent commissioner, they will need to demonstrate; clinical focus, added value, engagement with patients, clear and credible plans to deliver quality improvements within agreed financial resources, collaborative working arrangements and strong leadership capability.

Enhanced recovery pathways are clinically focused, cost effective, patient driven pathways. With an evidence base, in improving quality outcomes, team working across functional, organisational and professional boundaries. ER is part of the solution.

3. Commissioning aims to promote the spread and adoption of innovation, evidence based pathways and good quality care.

Enhanced recovery supports a wide range of improvements and innovations integrated within the pathway rather than a stand alone ideas, technologies and clinical practices. The success of enhanced recovery is in its entirety.

4. In order to meet the commissioning governance challenge. Commissioners will need to collaborative with other organisations engaging across professional and functional boundaries.

Enhanced recovery promotes the integration of services and team working across professional boundaries, involving health and social care, primary and secondary.

5. Patients trust their GPs and trust that they would contract the best for them.

Enhanced recovery continues to support the patients trust by supporting patient and carer involvement and strengthening the patient's confidence in the pathway and the NHS.

6. Commissioning is ultimately about good outcomes for patients.

Most importantly, enhanced recovery is the right care pathway – fewer complications, better outcomes, more cost effective and better patient experience – these are key outcomes for commissioners.

# COMMISSIONING THOUGHTS FROM THE FRONTLINE

## Involve commissioners and primary care from the start

From the outset (Autumn 2009) we wanted in Exeter to involve commissioning colleagues at the Primary Care Trust to achieve recognition of the enhanced recovery pathway benefits for patients but also in terms of wider NHS resource efficiency.

A commissioning team member attended our clinical meetings to see first hand evidence-based solutions from enhanced recovery for issues which purchasers and providers have to overcome. The evolution of CQUIN payments for enhanced recovery patients has further involved commissioners seeking more efficient ways of working across the healthcare landscape.

Enhanced recovery pathways has been adopted in urology, colorectal, gynaecology, and orthopaedics, though remaining 'procedure specific' to some degree. We now want to roll enhanced recovery out for all inpatient elective surgery and explore further application opportunities in emergency surgery and medicine.

A limited range of original Department of Health dataset indicators is used to measure enhanced recovery. Success is measured (attendance at pre-op clinic, carbohydrate drinks, early mobilisation, reduced length of stay etc). Quarterly reports will become more detailed as the programme evolves beyond initial roll out.

**Dr. Colin Berry**, Enhanced Recovery Clinical Lead, Exeter and Devon NHS Foundation Trust

## How do commissioners support improvement?

As enhanced recovery includes pre and post admission, understanding and supporting the quality of care commissioned at these stages from providers, including community, primary and social care is something only commissioners can fully deliver.

Including enhanced recovery in service specifications, as these are added into the contracts with all providers, will increase the focus. In addition, measurement of the delivery of the enhanced recovery elements of pathways could also be introduced.

Further contractual means to influence providers to improve can be through CQUIN in the early stages of adoption or, as the expectation of enhanced recovery delivery becomes more standard through contractual penalties.

Commissioners can help providers to change by creating these and other contractual incentives that are defined at a level which can be used to overcome internal lack of motivation to change where this exists.

**John Harrison**, Director, Peninsula Cancer Network

## What's really in it for commissioners

For enhanced recovery to deliver the maximal benefits it needs to be across an integrated care pathway and not just delivered from one step in the pathway – i.e the acute trust. Key steps of the pathway lie outside of the acute trust setting – Primary care – screening for fits prior to referral (Hb, BP), optimising Long Term Conditions e.g. Diabetes and shared decision making on elective care pathways prior to referral, also social care with discharge planning of high risk patients prior to admission. The only way this can be achieved is by commissioning an integrated care pathway and not allowing it to be driven as a purely acute trust initiate. There are risks to the commissioner if they allow the implementation of Enhanced Recovery to be purely driven by a provider in that, if successful, capacity will increase and there may be a rise in activity.

Primary Care – may be a LES for pre-referral screening or optimising long term conditions, most of enhanced recovery is core general practice and implementing ER should be part of improving quality and outcomes in primary care – a role of the clinical commissioning groups.

**Dr Alan Nye**, GP and Primary Care Advisor

**Starting to build a track record of capability to commission**

Clinical commissioning groups (CCGs), as part of their authorisation process need to build up a track record of their capability to commission. This includes being able to interpret data and use information to prioritise, redesign pathways that deliver improved outcomes and measure that improvement in QIPP terms i.e. Quality, Innovation, Productivity and Prevention.

CCGs are very keen to use evidence to validate what they have put in their commissioning intentions and QIPP plans as there is sometimes a disconnect between what seems like a good idea and what will deliver the outcomes Commissioners have used in their planning assumptions.

Case studies of where enhanced recovery has delivered will provide the evidence they are looking for particularly if it correlates with comparative LOS/readmission/spend data e.g. Atlas of Variation.

Enhanced recovery is about whole system pathway redesign in order to get to the bigger impact -extending enhanced recovery pathways into primary care and using QP indicators (Quality and Productivity – part of QOF) as the financial incentive. There are plenty of points linked to three planned and three unplanned care pathways.

**Alison Shead**, Commissioning Lead

**Integrated health and social care commissioning is the way forward: A social care perspective**

There are some key interfaces with social care. Improving the patient experience does to some degree depend on social care, especially if there are plans to reduce lengths of stay, move care closer to home and support early discharge. Taking this together with funding pressures, it will require whole systems solutions involving social care.

Data on hospital admissions, readmissions and delays in discharge can underlie to commissioners the value of social care services, specialist housing, installing aids and adaptations etc. Enhanced recovery may be one of the connections between health and social care where services can be aligned as a cohesive approach. Fitting a hand rail for £100 to speed up a patients discharge, frees up a hospital bed saving at least £200.

However, enhanced recovery alone will not make the NHS wealthy. Integrated health and social care commissioning will effectively improve health outcomes and ensure efficiency.

**Simon Williams**, Director of Community and Housing and National Lead for Urgent Care

## GOOD COMMISSIONING

Enhanced recovery is about good practice, good teamwork, good outcomes, good clinical governance and the good use of resources, which underpin the building blocks for good commissioning.



# SUMMARY

The NHS Enhanced Recovery Partnership Programme commenced in 2009 and its first publication in 2010 *'Delivering enhanced recovery – helping patients to get better sooner after surgery'* was produced to act as a starting point for individuals, teams and organisations wanting to implement enhanced recovery. Initially focusing on specific procedures in colorectal surgery, urology, gynaecology and orthopaedics, by 2011 enhanced recovery pathways had been introduced in over 180 NHS Trusts in England.

Clear evidence shows that enhanced recovery pathways are associated with better clinical outcomes and patient experience, fewer complications and are cost effective – supporting the case to make enhanced recovery 'standard practice'.

During the implementation across England it became evident that enhanced recovery principles and components could be applied to all in-patients – emergency or elective, medical or surgical.

The Enhanced Recovery Partnership continues as part of NHS Improvement to support the continued spread of enhanced recovery throughout the NHS, in existing and new specialties. This updated publication: *'Fulfilling the potential – a better journey for patients and a better deal for the NHS'* provides the updated evidence, information and shares the learning from across the country, in order to support the implementation and development of enhanced recovery pathways that continues to build upon the founding principles:

- All hospital in-patients should be on enhanced recovery pathways – these contain a number of interventions which have a greater impact when combined to help patients recover from episodes of inpatient hospital care
- Patients participate as partners in their care from informed decision making right through treatment to recovery and discharge.

Enhanced recovery as a standard approach has been supported by the Royal Colleges and Associations, which is evident in this publication. Successful implementation and sustainability of enhanced recovery pathways involves the commissioners as they are important to ensuring best practice is provided for their patients. The publication also gives emphasis to the role and responsibility of patients in enhancing their own recovery and keeps the patient at the heart of enhanced recovery.

Whilst the publication provides an overview it contains many examples of good practice, which will point you in the right direction. Further resources to support implementation can be found on the NHS Improvement website: [www.improvement.nhs.uk/enhanced-recovery](http://www.improvement.nhs.uk/enhanced-recovery)

**Mr Nigel Acheson**  
 Medical Director, Peninsula Cancer Network, Consultant Gynaecologist Oncologist, Royal Devon and Exeter NHS Foundation Trust and National Enhanced Recovery Advisor

EVIDENCE BASED CARE

EXCELLENT PAIN RELIEF

ENHANCED RECOVERY

INVOLVED IN DECISIONS ABOUT YOUR CARE

LESS DRIPS AND DRAINS

## RESOURCES

Advancing Quality Alliance (Aqua)  
[www.advancingqualityalliance.nhs.uk](http://www.advancingqualityalliance.nhs.uk)

Association of Surgeons of Great Britain and Ireland  
[www.aagbi.org](http://www.aagbi.org)

British Orthopedic Association  
[www.boa.ac.uk](http://www.boa.ac.uk)

British Association of Urology Surgeons  
[www.baus.org.uk](http://www.baus.org.uk)

British Association of Day Surgery  
[www.bads.org.uk](http://www.bads.org.uk)

British Association Breast Surgeons  
[www.baso.org.uk](http://www.baso.org.uk)

Department of Health  
[www.dh.gov.uk](http://www.dh.gov.uk)

Enhanced Recovery Toolkit  
[www.natcansatmicrosite.net/enhancedrecovery](http://www.natcansatmicrosite.net/enhancedrecovery)

National Technology and Adoption Centre  
[www.ntac.nhs.uk](http://www.ntac.nhs.uk)

Kings Fund  
[www.kingsfund.org.uk](http://www.kingsfund.org.uk)

NHS Choices  
[www.nhs.uk](http://www.nhs.uk)

NHS Improvement  
[www.nhs.improvement.uk](http://www.nhs.improvement.uk)

National Institute for Clinical Excellence (NICE)  
[www.nice.org.uk](http://www.nice.org.uk)

NHS Evidence  
[www.evidence.nhs.uk/QIPP](http://www.evidence.nhs.uk/QIPP)

National Confidential Enquiry into Patient Outcomes and Death  
[www.ncepod.org.uk](http://www.ncepod.org.uk)

National Cancer Action Team  
[www.ncat.org.uk](http://www.ncat.org.uk)

Right Care  
[www.rightcare.nhs.uk](http://www.rightcare.nhs.uk)

Royal College of Anaesthetists  
[www.rcoa.ac.uk](http://www.rcoa.ac.uk)

Royal College of Obstetricians And Gynaecologists  
[www.rcog.org.uk](http://www.rcog.org.uk)

Royal College of Surgeons  
[www.rcseng.ac.uk](http://www.rcseng.ac.uk)

The Health Foundation  
[www.health.org.uk](http://www.health.org.uk)

The Institute of Healthcare Improvement  
[www.ihl.org](http://www.ihl.org)

The NHS Institute for Innovation and Improvement  
[www.institute.nhs.uk](http://www.institute.nhs.uk)

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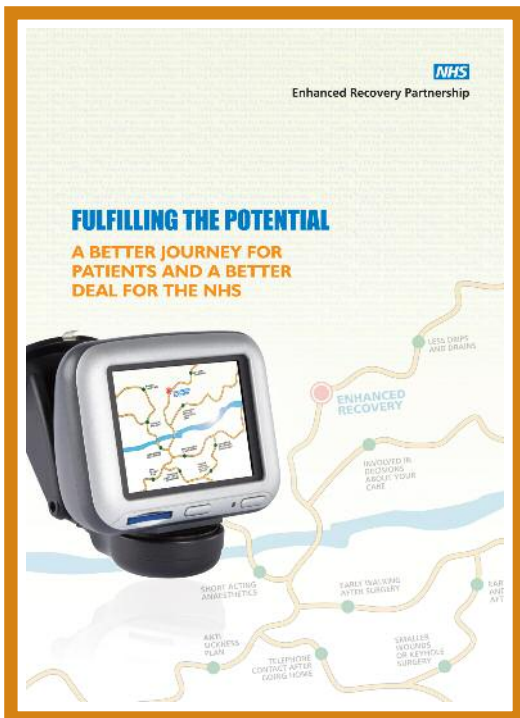
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- Professor Monty Mythen
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- Department of Health
- NHS Improvement
- National Cancer Action Team
- Advancing Quality Alliance (Aqua)
- National Enhanced Recovery Clinical Leads and Advisors
- SHA Enhanced Recovery Leads
- NHS Improvement Associates
- The Enhanced Recovery Partnership Advisory Board
- Operational and Working Groups
- The Enhancing Patient Experience Working Group
- Royal College of Surgeons
- Royal College of Anaesthetists
- Royal College of Nursing
- Association of Surgeons of Great Britain and Ireland
- British Association of Urological Surgeons
- Royal College of Obstetricians and Gynaecologists
- British Orthopaedic Association
- Royal Society of Medicine
- British Gynaecological Cancer Society
- Association of Coloproctology of Great Britain and Ireland
- BASO ~ The Association for Cancer Surgery
- British Association of Day Surgery
- Royal College of Physicians
- Royal College of Radiologists
- Faculty of Clinical Oncology
- Future Forum
- Royal College of General Practitioners
- Faculty of Intensive Care Medicine
- The Allied Health Professional Federation
- Royal Surrey County Hospital
- Scarborough and North East Yorkshire Healthcare NHS Trust
- Pan Birmingham Cancer Network
- Heart of England NHS Foundation Trust
- East Kent Hospitals University NHS Foundation Trust
- South Devon Healthcare NHS Foundation Trust
- Royal Devon and Exeter NHS Foundation Trust
- Peninsula Cancer Network
- Golden Jubilee National Hospital Scotland
- East Lancashire Teaching PCT
- Wirral University Teaching Hospital NHS Foundation Trust
- Royal Marsden NHS Foundation Trust
- University Hospital of North Staffordshire NHS Trust
- The Royal Liverpool and Broadgreen University Hospitals NHS Trust
- Frimley Park Hospital
- Robert Jones and Agnes Hunt Orthopaedic Hospital NHS Foundation Trust
- Ashford and St Peter's NHS Foundation Trust
- Taunton and Somerset NHS Foundation Trust
- Oxford University Hospitals NHS Trust
- NHS London
- NHS South Central
- NHS North East
- NHS Midlands and East
- NHS South East Coast
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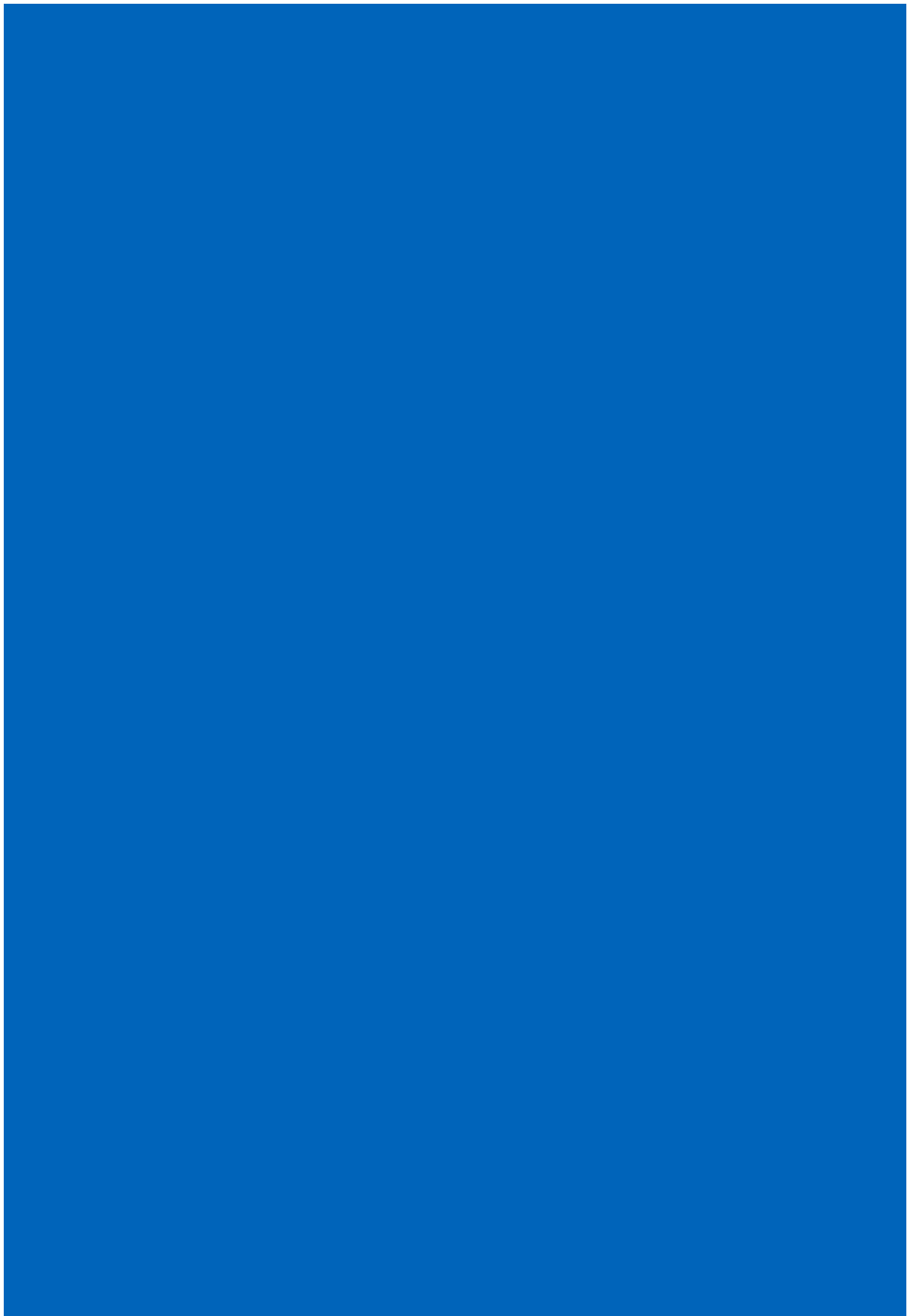
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For further copies of 'Fulfilling the potential: a better journey for patients and a better deal for the NHS', and 'My role and my responsibilities in helping to improve my recovery', visit [www.improvement.nhs.uk](http://www.improvement.nhs.uk), email: [info@improvement.nhs.uk](mailto:info@improvement.nhs.uk) or call 0116 222 5184





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