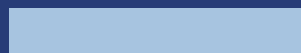




THE ROYAL
COLLEGE OF
ANAESTHETISTS

PERIOPERATIVE MEDICINE

THE PATHWAY TO BETTER SURGICAL CARE





STATEMENT OF SUPPORT

I welcome the vision of the Royal College of Anaesthetists to develop a national programme for the future delivery of perioperative medicine. The proposed work encompasses the principles of enhanced recovery that we know can deliver better patient experience as well as a more efficient elective care pathway and can lead to the delivery of the best possible quality of care for patients.

Sharing examples of good practice provides an opportunity for colleagues to review their own pathways in light of the importance of integrated and person-centred care. It will also provide commissioners with the information they need to support the commissioning of high quality care.

I commend the Royal College of Anaesthetists' Perioperative Medicine Programme which I believe could reduce variation and improve patient outcomes after surgery.

Celia Ingham Clark MBE MChir
Director for Reducing Premature Mortality
NHS England



FOREWORD

The Royal College of Anaesthetists is committed to developing a collaborative programme for the delivery of perioperative care across the UK; to deliver more efficient healthcare to improve patient outcomes and quality of life.

As the largest single hospital specialty, we are uniquely placed to lead the future development of perioperative medicine. Anaesthetists provide care to patients across all age ranges and a spectrum of co-morbidities. We have a long and established track record in enhancing patient safety. Our current work in updating the curriculum for anaesthetic training to reflect developing practice in perioperative medicine ensures that we will continue to meet future needs in healthcare provision.

We have not underestimated the challenges that we face in delivering this agenda. Resource limitations and increasing service pressures, coupled with high public and political expectation, require a real need to demonstrate through organisational flexibility and joined-up working, that we can develop efficient and effective pathways for every patient presenting for surgery in whatever situation.

There are already many excellent examples of good models and pathways of perioperative care. Common to these is the concept of enhanced multi-disciplinary working and shared decision making – patients being given a stronger voice in decisions and ‘choosing wisely’ against an environment of improved co-ordination of services and an integrated sharing of knowledge and data.

In developing this agenda, we have produced a short animated film to accompany this document, outlining the case for change and highlighting existing good models of practice and how they can be coalesced to form a coherent policy for the delivery of perioperative medicine across the UK. I hope you will share our vision with colleagues, policy makers and commissioners, making use of these materials to start the conversation on what perioperative care should look like and turning this vision into action.

We look forward to working with you.

Dr J-P van Besouw
President, RCoA

DESCRIBING THE NEED

“His surgery was urgent and there wasn't time to see him in clinic. In the end, I didn't meet him until the morning of surgery, when I realised that he had lots of other medical problems. Cancelling the case just wasn't an option, so we went ahead and did our best. We got him through surgery without too many problems, but a few days later he developed pneumonia and ended up on intensive care. I can't help but feel he would have coped better if we had been able to also offer more basic medical care.”

Consultant Anaesthetist

Around 10 million patients undergo surgery each year in the NHS, and any healthcare pathway catering for a population of this size must be simple, safe and efficient. However, problems arise when we identify individual patients on this pathway who have complex medical needs. This simple care pathway can then feel inflexible, as we attempt to address different medical problems for each patient we see.

Fortunately, the great majority of patients are well served by existing NHS surgery pathways. However, there is a growing body of evidence that the needs of the high-risk surgical patient are not being met. As a result, patients who are older or have significant medical problems are offered major surgery in a system that cannot adapt to minimise their risk of complications.

Around 250,000 high-risk patients undergo surgery each year in the NHS, this is approximately 15% of all those who need surgery as a hospital inpatient. **We believe these patients need extra care to ensure they have the best possible recovery after surgery**, but any solution to this problem must function well within the existing high-volume NHS surgical service.

Traditionally, the care of patients undergoing major surgery has been tailored to the operation itself and the index disease being treated by the procedure.

However, the majority of complications, which occur after surgery are not due to technical errors or failures

by the surgical team, but are medical complications such as pneumonia or myocardial infarction.

The prevention and treatment of these medical complications requires a broader approach than we currently take to the care of the surgical patient.


The scale of this unmet need is becoming increasingly clear, and with 10 million patients undergoing surgery each year in the NHS, **even a low rate of avoidable harm will be associated with many preventable complications and deaths**. The long-term impact of this short-term postoperative harm is also increasing.

Some surgical specialties have already made good progress in improving the quality of perioperative care. Cardiac surgery provides an excellent example of an efficient patient centred care pathway led by a multi-disciplinary team, achieving better outcomes than many other types of major surgery. We need to take a similar approach for patients undergoing all forms of surgery. To achieve this, we need to define an **integrated agenda** for healthcare policy around the challenge of providing healthcare to patients undergoing major surgery.

We believe that **perioperative medicine provides a solution to the unmet need**, using existing skills and expertise within the NHS to **reduce variation and improve patient outcomes after surgery**.

PERIOPERATIVE MEDICINE

THE CHALLENGES



£16Bn
IS SPENT ON ELECTIVE
SURGICAL CARE IN ENGLAND
EACH YEAR



10 million
PATIENTS
HAVE SURGERY
EVERY YEAR AND THIS
NUMBER IS RISING

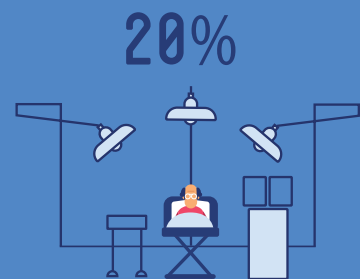


25%
OF THE POPULATION
IN ENGLAND HAVE A
LONG-TERM CONDITION

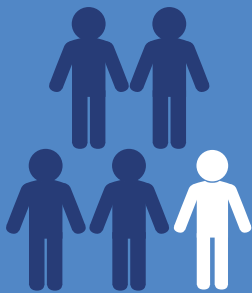


**OUR POPULATION IS
GETTING OLDER**

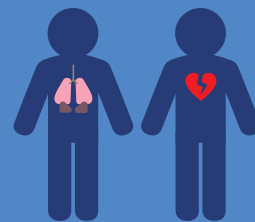
THIS IS GREAT NEWS
BUT LEAVES US
WITH CHALLENGES



20%
LESS THAN 1 IN 5
NON-CARDIAC SURGERY
INPATIENTS ARE
ADMITTED TO ICU



HIGH-RISK PATIENTS
ARE A MINORITY BUT ACCOUNT
FOR 4 OUT OF 5 DEATHS
AFTER SURGERY



THERE IS NO SYSTEM FOR SCREENING
PATIENTS FOR LONG-TERM HARM
AFTER SURGERY (E.G. HEART FAILURE
OR DETERIORATING KIDNEY FUNCTION)



PERIOPERATIVE MEDICINE: BUILDING MODELS OF CARE



The aim of perioperative medicine is to deliver the best possible care for patients before, during and after major surgery. Perioperative medicine is a **natural evolution in healthcare using existing skills and expertise within the NHS** to provide an improved level of care throughout the perioperative period.

The **multi-disciplinary perioperative medicine team** can be led by doctors from various specialties, including anaesthesia, surgery, acute medicine, cardiology, and care of the elderly. They will provide evidence based perioperative care, driven by robust audit data. GPs and surgeons will have a single point of contact to ensure the **individual needs of complex patients are carefully co-ordinated from the decision to offer surgery, through to the weeks and months after the procedure.**

Perioperative medicine teams will lead the assessment and preparation of patients for surgery to optimise the treatment of co-existing medical disease. Teams

will plan care in hospital, provide advice and support during the days after surgery, and review patients in clinic when they return home to ensure all harmful consequences of surgery are fully resolved.

The perioperative medicine team would provide an additional level of care for those patients who need it. This would include assessment and treatment before surgery, as well as individualised care in the days, weeks and months afterwards. Perhaps most importantly, this team provides a **single point of contact for surgeons and GPs co-ordinating the care of these complex patients.**

This complete model of care does not yet exist in the NHS, but there are numerous examples of hospitals, which have successfully implemented some of its key components. In the pages that follow, we describe some of these success stories, as well as identifying the gaps in care and exploring how a joined-up pathway would work.



BEFORE SURGERY

Major surgery may trigger a deterioration in long-term illness and delay patient recovery. We must use the time between the decision to perform surgery, and the procedure itself to assess the needs of individual patients, and to optimise treatment of long-term disease. There are many examples that show how we modify perioperative care to the benefit of both the patient and the healthcare system.



DURING SURGERY

Safe surgery is one of the greatest successes of modern healthcare. The challenge of care during surgery is now to improve the quality of patient care, as well as preventing medical error. The presence of an experienced anaesthetist supported by a multi-disciplinary team, provides an opportunity for the delivery of treatments which need significant medical input, without disrupting the surgical care pathway.



EARLY AFTER SURGERY

Surgeons are increasingly diversified in their technical expertise, whilst care of acute and long-term medical disease is ever more sophisticated. It is no longer realistic to expect surgeons to have an in-depth knowledge of recent advances in the management of patients with complex needs, who develop acute medical problems. Improving the quality of care early after surgery represents a major challenge.



LATER AFTER SURGERY

As we work to ensure patients recover quickly and return home early after surgery, primary and secondary care services will need to work more closely together to address the needs of surgical patients with long-term disease. Even several months after they return home, complex patients need ongoing care from experts who understand the impact of major surgery on long-term health.

SUCCESSFUL PATIENT PATHWAYS

“ Proactive management to help patients get better more quickly has reduced the length-of-stay in hospital. ”

Many components of the perioperative medicine pathway already exist within the NHS, but so far no NHS hospital can provide a complete service to all patients. As we develop this concept, we need to find the best examples of existing care and learn from these successes. Perhaps the best known example of this is **the Enhanced Recovery Programme** launched in England by the Department of Health in May 2009. This approach provided a care pathway consisting of a bundle of 'best evidence-based practices' delivered by a multi-disciplinary healthcare team, with the intention of helping patients recover more quickly after major surgery. This programme **promoted the rapid adoption of care pathways**, that were already being delivered by many teams in the NHS, to produce the best results for patients as well as financial savings for the NHS. The national implementation of the Enhanced Recovery Programme is progressing well in four areas of elective surgery (major joint replacement, colorectal surgery, urology and gynaecology). The pathway itself consists of numerous component interventions throughout the perioperative period, all of which fit around five key areas: fitness for referral to manage patient risk, shared decision making with the patient, assessment and planning before surgery, anaesthesia and pain management, and preparation for hospital discharge. In 2013, the programme reported improvements in both quality of care and patient satisfaction; thousands more surgical procedures were performed whilst saving 170,000 hospital bed-days.



It is particularly important that perioperative medicine pathways work well for older patients, a growing number of whom are now offered surgical treatments. There is good evidence of this from Enhanced Recovery Programmes with patients in their eighties mobilising early after major surgery, and leaving hospital after only five days. Nonetheless, it is increasingly obvious that older patients need additional specialist care during the perioperative period. **Many NHS hospitals now offer specialist ortho-geriatric services, where multi-disciplinary teams provide additional assessment and care for older patients undergoing major orthopaedic surgery.** At one London hospital, the Proactive care for Older People undergoing Surgery (POPS) service led by Dr Jugdeep Dhesi was established to improve outcomes for complex older surgical patients. A multi-disciplinary team, led by a consultant geriatrician, engages with the patient throughout the surgical pathway, from preoperative assessment through

“ I am sure this approach leads to a much speedier recovery – we don’t lie around for ages like the good old days! ”

Patient

surgical admission, to discharge to the community. Before surgery, the team focuses on assessment and optimisation across medical, functional and psychosocial domains. Co-morbidities and diseases are diagnosed, often for the first time, and managed where possible by a single team to improve co-ordination of care. Frailty and cognitive disorders are also identified and actively managed. Together with the patient, the team develops a perioperative care plan, including the most appropriate level of care, management of complications, and rehabilitation, to inform proactive discharge planning. This service provides an excellent example of how a perioperative medicine service can reduce cancellations and complication rates for patients, whilst reducing length of hospital stay.

There is evidence from within the NHS that perioperative medicine can deliver additional benefits for patients, whilst helping the wider surgical service to work more efficiently. However, there is much still to be done before every eligible patient can access care from a perioperative medicine team in their hospital. **Pathways need to be developed to cater for all high-risk patients, regardless of surgical speciality or whether the procedure is performed on an elective or emergency basis.** Ultimately the perioperative medicine pathway must begin with the decision to operate, and continue into the weeks and months after surgery.



BEFORE SURGERY

Most patients make a quick recovery after surgery, but not all. Medical complications such as pneumonia and myocardial infarction are an important cause of poor outcomes after surgery. As a cause of acute illness, surgery has one major advantage over sepsis, trauma and other conditions – we know when and where it is going to happen. This provides an opportunity to assess the needs of each individual patient, to determine the risks of the proposed surgery, and to optimise treatment of any long-term disease. Taking this opportunity will allow both patient and doctor to make fully informed decisions about whether to proceed with surgery, and to plan the necessary care. Many patients who present for surgery have

undiagnosed long-term illnesses such as lung disease or diabetes. Major surgery often triggers a deterioration in long-term illnesses, delaying patients' recovery. It is essential to make the most of the time between the decision to perform surgery, and the procedure itself. Delivering high-quality care in this limited time frame may be challenging, but there are many examples of it in the NHS today, which show how we can modify perioperative care to the benefit of both the patient and the healthcare system. We need to build on these models of care to embed planning before surgery into a pathway of care that continues until all the consequences of surgery have been addressed.

Multi-disciplinary teamwork in cancer surgery

Despite steady improvements in outcomes, patients undergoing major gastrointestinal surgery are still exposed to a significant risk of complications. Oesophageal and pancreatic surgery have some of the highest mortality rates for elective surgery. These procedures therefore need careful planning.

In many hospitals, anaesthetists now attend multi-disciplinary meetings with surgeons, oncologists, radiologists and specialist cancer nurses. The presence of a diverse group of experts allows the risks and benefits of different treatments to be carefully discussed. In some patients with serious co-morbidity, the risks of surgery may outweigh the benefits, and other less invasive treatments are considered.

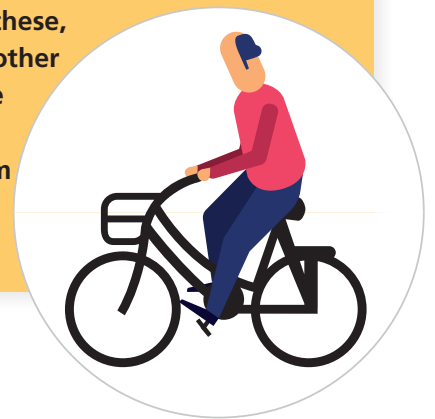
Referrals for more detailed assessment and optimisation before surgery are made on the basis of these discussions and shared with patients. With the increasing use of neo-adjuvant chemotherapy before surgery, the need to tackle the problem of patient frailty is growing. In some centres, this multi-disciplinary approach is extended further to include a Care of the Elderly physician for all patients older than 70 years. The inclusion of perioperative medicine within the cancer multi-disciplinary team is an excellent example of how we can broaden the view of the surgical team to focus not just on the index disease for which the patient is having surgery, but also on the harm associated with surgery itself.

Assessing patient risk before surgery

Assessing the risk of complications following major surgery is a key part of perioperative care. All NHS hospitals provide nurse-led preoperative assessment, and four out of five also provide consultant anaesthetist led clinics to assess complex patients before surgery. This ensures all relevant medical problems are identified and treated in advance, so there are no surprises for the team on the day of surgery.

The approach to risk assessment is becoming increasingly sophisticated. Many hospitals offer Cardiopulmonary Exercise Testing (CPET) to assess physical fitness. This accurately quantifies exercise capacity, which has been used for many years as a guide to perioperative risk. Other forms of risk assessment include simple blood tests used elsewhere to assess heart failure, kidney disease and other acute and chronic conditions. The UK is participating in a major international research project to compare these different approaches. In one hospital in the south-west of the UK, risk-assessment data are used to generate survival curves using a statistical model. Surgeons and anaesthetists use this to help in deciding which patients require postoperative critical care, as well as other support.

Early evidence suggests that patients who are assessed in clinics like these, have a higher rate of survival, although this may also be affected by other aspects of care. The obvious benefit of preoperative assessment is the opportunity to optimise treatment of existing disease, and plan for care during and after surgery. However, these assessments also inform the discussions between doctor and patient, on whether surgery is the best option if the risks outweigh the benefits.



“All NHS hospitals provide nurse-led preoperative assessment but four out of five also provide consultant anaesthetist-led clinics for complex patients.”

“Preoperative assessment provides an opportunity to optimise treatment of existing disease, and make a detailed plan for care during and after surgery.”

DURING SURGERY

Safe surgery is one of the greatest successes of 20th century healthcare. The profession of anaesthesia has led a programme of innovation and safety, and permanent harm caused by technical errors during surgery is now considered to be rare. Whilst the need to maintain the highest safety standards will never cease, the greatest challenge of care during surgery has now become the need to improve the quality of patient care. There are numerous examples of developments in perioperative care which are based

on interventions started in the operating theatre. The presence of a highly-trained anaesthetist, supported within a multi-disciplinary team, provides an easy opportunity for the delivery of treatments which are complex or need significant medical input, without disrupting the surgical care pathway. It is increasingly necessary to see the care provided during surgery, not as an isolated episode, but as part of a continuum starting with the decision to operate.

Reducing the impact of acute pain after surgery

Despite the efforts of doctors and nurses, many patients still experience acute pain after surgery. For these patients, pain is much more than an unpleasant experience. Severe pain delays patient recovery, and prevents adequate breathing leaving patients more at risk of pneumonia and myocardial infarction, and in some cases it develops into chronic pain which can cause life-long disability. As many as one in ten patients having a knee replacement experience long-term pain afterwards.

As perioperative physicians, anaesthetists are ideally placed to prevent and treat pain following surgery. The anaesthetist takes primary responsibility for assessing the risk of acute and chronic pain and for developing a robust plan for pain management. In almost all NHS hospitals, patients at risk of severe pain are reviewed on the surgical ward by a multi-disciplinary acute pain team, providing expert advice and training for the doctors and nurses from the surgical team. This approach to effective pain management helps to reduce the risk of complications such as pneumonia, and speeds patient recovery. It also reduces the risk of debilitating chronic pain problems.

The prevention and treatment of pain is an excellent example of perioperative medicine. Whilst not a fundamental part of treating the index disease (such as cancer or arthritis), we all recognise that it is essential to treat this consequence of surgery in order to give the patient the best chance of a safe and speedy recovery. Acute pain teams also offer a model of care for the multi-disciplinary perioperative medicine team early after surgery. Whilst not leading the care of every patient, they provide expert advice and guidance as well as seamless continuity of care from surgery to patient discharge.

“Patients at risk of severe pain are reviewed on the surgical ward by a multi-disciplinary acute pain team.”

Simple tools to make surgery safer

Although harm due to medical error during surgery is now rare, it remains important. There is growing recognition that safety and quality of care are at two ends of a single continuum that ensures the best possible outcomes for patients. Research led by the World Health Organisation (WHO), suggested that adverse incidents in the operating theatre may be reduced by a simple checklist to confirm that basic safety procedures are complete before surgery begins. The Department of Health then directed that the WHO Surgical Safety Checklist was to be used in all NHS hospitals.

During implementation, local variation of the layout and content of the checklist allowed hospitals to tackle their individual needs, promoting a sense of ownership, and improving adoption. The three core components of the checklist are: the sign in before anaesthesia, time out before surgery begins and sign out before any member of the surgical team leaves the operating theatre. Participation in the WHO checklist is now included in the curriculum for anaesthesia, in good practice guidelines and in the Anaesthesia Clinical Services Accreditation (ACSA) standards.

Recent research across Europe has shown significant international variation in use of the surgical checklist, and vitally that exposure to a checklist is associated with reduced mortality after surgery. Compliance with the checklist in the NHS is greater than 90% although regulators sometimes report some variability. We don't know whether the checklist itself prevents frequent harm, or that it is used more commonly where the quality of care is higher. However, it is clear that the need to improve the quality of perioperative care is as important as maintaining high standards of safety.

“ Maintaining high standards of care for patients with long-term disease, becomes a major challenge as they undergo surgery. ”



EARLY AFTER SURGERY

“All the time I needed people, they were very attentive.”

Patient

All hospitals deliver a package of perioperative care that is focussed on the needs of the individual patient, as determined by the specific surgical procedure.

Specialised surgical wards are a historic feature of the NHS, delivering expert management of the common problems that may occur after surgery. However, as surgeons become more diversified in their technical expertise, and the care of acute and long-term medical disease becomes ever more sophisticated, a clear gap has opened in terms of the ability of the surgical team to provide care to the surgical patient with complex medical needs, such as heart failure or pneumonia. Physicians are well trained in the management of acute and chronic medical disease, but may have less insight into how major surgery may modify such conditions. Anaesthetists have an

excellent understanding of how complications develop after surgery, but are rarely given the time to review and assess patients on the general surgical ward.

Improving the quality of care early after surgery is perhaps the biggest challenge we face as we work to make perioperative medicine a reality. But again, we can identify many examples of care within the NHS today which convince us that effective change is worthwhile and achievable.

The Faculty of Intensive Care Medicine (FICM) has commissioned a national review of the current provision of critical care services. The review will last until the autumn of 2015 and will be considering a number of areas, including the role of enhanced care between the ward and the High Dependency Unit.

Caring for long-term disease after surgery

Twenty years ago, it was very common to find that patients were not offered surgical treatments because of increased risk due to co-morbid disease. As perioperative care has improved, we find that these patients are now offered surgery as a matter of routine, with the same expectations of success as the wider surgical population. Maintaining high standards of care for patients with long-term diseases, becomes a major challenge as they undergo surgery.

Diabetes care is an important example. This disease is associated with increased rates of cancellation before surgery, complications such as wound infections, and prolonged hospital stay after surgery. Patients are now routinely admitted on the day of surgery, even for major procedures, creating particular challenges for diabetic patients. One NHS trust in the south of England has set up a service to tackle this. All diabetic patients are offered an additional screening test called HbA1c as part of their routine preoperative assessment. Those with high values are seen by the diabetic team within ten days, to review their diabetic medication in the context of surgery, as well as to offer other routine care that diabetic patients need.

This service provides important support, but requires on average only one day each week from the diabetic nurse specialist to accommodate referrals. The service promotes communication between diabetes experts, surgeons and anaesthetists to ensure high quality care within an efficient surgical service. Importantly, colleagues in primary care have also commented on the utility of this approach which provides a valuable model of care for the short-term management of surgical patients with long-term disease. The introduction of perioperative medicine teams would help us to ensure that all long-term diseases are managed in this way during the perioperative period.

Extra care for the high-risk patient

Many patients need extra care immediately after surgery, particularly if they need major surgery. For many years, we have admitted these patients to a Critical Care Unit for 24–48 hours after surgery. However, despite increased resources the demands on these services remain high. When critical care beds are not available, clinicians must decide between cancelling surgery, or proceeding with less care than they believe the patient needs. This situation is bad for patients, bad for the NHS and very stressful for hospital staff.

However, surgical patients don't need all the facilities that a modern intensive care unit offers. In fact, a much simpler facility would be more efficient and still offer the care patients require. After cardiac surgery, all patients are admitted to critical care as standard. However, in most hospitals this is part of a nurse-led, protocol-driven form of care known as 'fast-track' cardiac surgery. One hospital in London has for many years admitted all high-risk patients to an 'Overnight Intensive Recovery' unit which functions much like a normal post-anaesthetic care unit. Patients are admitted for up to 24 hours before they are discharged to the ward or to a fully-equipped intensive care unit, depending on need. This provides a facility for the provision of cardiac or respiratory organ support (much like a critical care unit), as well as a focus on pain management and other common postoperative problems (much like a post-anaesthetic care unit). Patient flow is not a problem because places in the unit are not considered to be hospital 'beds'.

There are now several NHS hospitals that use this model of care for patients who would traditionally be admitted to a critical care unit after surgery. This ensures all patients receive the level of care they need whilst avoiding the need to cancel procedures when critical care beds are not available.

“Cancelling surgery, or proceeding with less care than needed, is bad for patients, bad for the NHS and very stressful for staff.”



LATER AFTER SURGERY

Trends in perioperative care must mirror those of the wider NHS. Our reliance on care in hospital is unsustainable, inefficient and frequently fails to meet patients' hopes and expectations. As we work to ensure patients recover quickly after surgery, the number of days they spend in hospital will steadily decrease. This in turn places demands on the system to communicate more effectively between primary and secondary care, an interface that most agree does not function as well as it should. As we offer surgery to more older patients, and to those with long-term

disease than we ever have before, it is vital that we consider the impact of major surgery in the context of patients' long-term health. Primary care services need support and excellent communication from a team of experts who understand the impact major surgery has on their individual patients, advising on specific medical problems that have arisen after surgery, co-ordinating onward referrals if specialist input is needed, and ensuring the GP is fully informed of their patient's progress in the weeks and months following surgery.



Kidney injury after major surgery

Acute kidney injury (AKI) is a serious clinical problem which has a significant impact on both short and long-term patient outcomes after surgery. As we offer major surgery to more and more patients with risk factors for kidney disease, more patients experience damage to their kidneys as a result of the systemic inflammatory response to surgery. The rising prevalence of risk factors such as older age, chronic kidney disease, diabetes and hypertension indicates that surgery will have a growing impact on the long-term health of patients.

We now recognise that even mild episodes of AKI trigger step-wise deteriorations in renal function, eventually leading to chronic kidney disease. This in turn results in a dramatic increase in cardiovascular risk, reduced survival, and of course increased NHS resource use. For technical reasons, it is very difficult to predict a patient's risk of kidney disease at the time of hospital discharge. This partly relates to the reliability of routine kidney blood-tests in patients who have major surgery. Local and national collaborations between clinical teams in nephrology, perioperative medicine, intensive care and biochemistry have led to more effective screening systems for AKI and pathways for follow-up.

A major NHS trust in London has taken this a step further by creating an AKI follow up clinic. This is a collaborative venture between several hospital departments, offering patients at risk an expert assessment and screening for the presence or worsening of chronic kidney disease in the months following surgery. This creates key opportunities to improve long-term health by reducing the progression of kidney disease and its cardiovascular consequences. We now realise that many acute illnesses have an important impact on long-term disease. In time, we expect to see routine screening of patients for acute myocardial, kidney and other organ injuries triggered by major surgery. This will allow us to minimise the long-term effects of short-term harm.

“A breathless 86-year-old came to see me with severe heart failure. I started some drug treatments which helped a lot, but she remained anaemic. I asked for an urgent colonoscopy... and guess what... bowel cancer. She felt great on her medications when she went in for her surgery last week. She went to intensive care straight after surgery which was good, but then they sent her home with no medications, still anaemic, and a note saying ‘...follow up with GP’. Her heart failure is now as bad as ever. We really need better teamwork when such complex patients have major surgery.”

General Practitioner

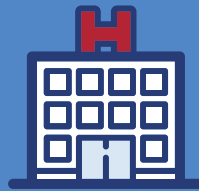
PERIOPERATIVE MEDICINE THE SOLUTIONS

85% OF HOSPITALS IN ENGLAND HAVE IMPLEMENTED AN ENHANCED RECOVERY PROGRAMME



8 IN 10
HOSPITALS OFFER
ANAESTHESIA
ASSESSMENT BEFORE
SURGERY

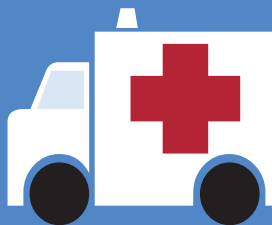
INTEGRATED CARE FOR
ELDERLY PATIENTS
HAPPENS IN SEVERAL NHS
TRUSTS REDUCING
COMPLICATIONS AND
LENGTH OF
HOSPITAL STAY



2 IN 5



HOSPITALS USE EXERCISE
TESTING TO ASSESS RISK
FOR PATIENTS



92 HOSPITALS
ARE TAKING PART IN A
CLINICAL TRIAL TO DEVELOP
PERIOPERATIVE MEDICINE
FOR PATIENTS WHO
NEED EMERGENCY
ABDOMINAL SURGERY



100%
OF ELIGIBLE UK
HOSPITALS
ARE TAKING PART
IN NELA

**OVER
90%**

OF SURGICAL PROCEDURES
IN THE NHS INVOLVE
THE WHO SURGICAL
SAFETY CHECKLIST

DEVELOPING THE RESEARCH AGENDA

Twentieth century advances have ensured that the technical delivery of surgery and anaesthesia is very safe in developed countries. Despite this, in the 21st century hundreds of thousands of patients each year are still subjected to potentially avoidable harm in the perioperative setting. Inpatient mortality accounts for just part of the public health issue: major complications occur in over ten times as many patients, and confer a risk of premature death and reduced health-related quality of life for years after an operation.

The time is right for a focus on research, audit and quality improvement in perioperative medicine. Basic scientists are directing their efforts at understanding the biological mechanisms underlying postoperative morbidity, and why its impact should be so sustained. Clinical trialists are evaluating interventions to mitigate adverse outcomes in pragmatic studies involving tens of thousands of patients. It is recognised that unplanned variations in structures and processes between healthcare providers have a significant impact on outcomes after surgery; thus initiatives within the new field of Improvement Science are focussing on this area.

Academic collaboration in perioperative medicine is up, running and flourishing. For example, the

infrastructure provided by nationally funded audits of process and outcomes has been used to support clinical trials of complex interventions aimed at improving these outcomes. Such partnerships ensure that high quality clinical studies reach the majority of hospitals, and thus should lead to widespread patient benefits across the UK.

The time is right for a focus on research, audit and quality improvement in perioperative medicine.

Building on these early successes, sustainable infrastructure will be essential to ensure the realisation of future academic aspirations. The National Institute of Academic Anaesthesia (NIAA) Health Services Research Centre (HSRC) has established a network of Quality Audit and Research Co-ordinators (QuARCs) in over 90% of UK anaesthetic departments, who are

already delivering high quality research and service improvement initiatives in perioperative care. In the near future, a clinical trials group will be established, which will deliver multi-centre studies of novel perioperative interventions across the UK. These networks will work closely with those established by the National Institute for Health Research (NIHR) in order to promote enhanced cooperation between clinicians from across the surgical specialties, and to optimise collaboration with research funding bodies such as the NIHR, Medical Research Council (MRC), the Wellcome Trust and the Health Foundation.



TRAINING AND WORKFORCE PLANNING

High quality training will be required to deliver integrated perioperative care in the NHS. Anaesthetic training shapes medical careers that will span 30 years or more and it is essential that this training reflects the organisation and conduct of clinical practice that will provide the best possible care for patients. Much of the infrastructure and mechanisms are already in place, and many of the skills required are already identified in the Anaesthetics Training Programme. The CCT in Anaesthetics has a fundamental aim to produce well-trained, high-quality clinicians, with a broad range of clinical leadership and management skills and professional attitudes necessary to meet the diverse needs of the modern NHS.

The College is responsible for defining the curriculum for anaesthetic training, and ultimately for setting standards in the provision of perioperative care for patients. Both are being reviewed and updated to reflect developing practice in perioperative medicine. Training in perioperative medicine will be structured in keeping with the spiral learning format, and will include formal assessments and modular sign-offs which will be reviewed as part of the Annual Review of Competence Progression (ARCP) process. Changes to the CCT also align to the recommendations made in the Shape of Training review. Training is embedded in the work of all anaesthetic departments in the UK, and underpins clinical standards, academic quality and

By developing training in perioperative medicine the College will support the development of a future consultant workforce that is able to provide the best possible care for patients in the NHS.

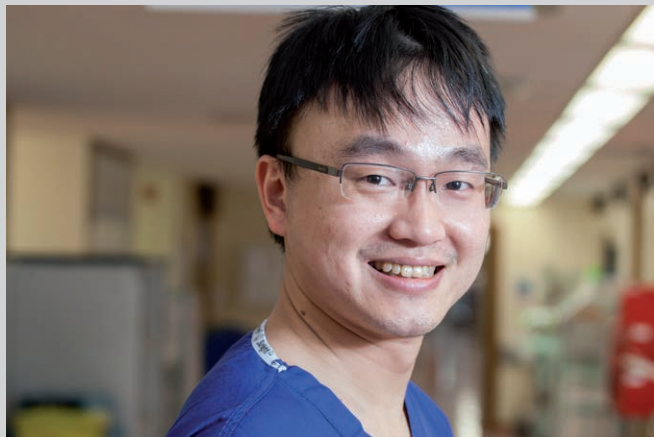
innovation. By developing training in perioperative medicine, the College will support the development of a future consultant workforce that is able to provide the best possible care for patients in the NHS. The trainees themselves recognise this and its importance. The College also recognises the importance of training in perioperative medicine at undergraduate and Foundation level and we hope to work with medical schools and the Foundation Programme to develop this.

In terms of workforce training, perioperative medicine provides both challenges and solutions. The Centre for Workforce Intelligence (CfWI) in-depth review on anaesthesia and intensive care medicine identifies a 25% under supply of anaesthetists and intensivists up to 2033. This projection does not include the need for perioperative medicine positions, which may create further strain on workforce supply. Conversely, improved patient pathways present

an opportunity to use the acute care workforce more effectively. The work of the perioperative medicine team may reduce demand for anaesthesia and intensive care medicine in the future although this is difficult to model. The College hopes to work together with other colleges and specialties, and workforce planners in Health Education England (HEE) and the devolved nations, to explore solutions orientated around perioperative medicine to create a better workforce for the future.

“Unless we re-engage with the wards to provide care before and after surgery, we will lose relevance. A retreat to the operating theatre will be to the detriment of the specialty.”

RCoA Curriculum Survey 2014





“ From contemplation of surgery until full recovery, the perioperative medicine team can ensure that the patient’s care is co-ordinated between all the relevant experts... ”

SUMMARY

Surgery is an important treatment option for a wide range of acute and chronic diseases, and one that we are offering to more patients every year. For most patients surgery is a success, both in terms of the procedure itself and the care before and afterwards. However, many patients are exposed to a high-risk of complications and death after surgery, because of the complexity of their surgery or their co-existing medical problems, or a combination of these factors. We have explained how perioperative medicine may provide a solution by offering an additional level of care throughout the perioperative period. From contemplation of surgery until full recovery, the perioperative medicine team can ensure that the patient’s care is co-ordinated between all the relevant experts, offering additional evidence-based treatments as and when appropriate.

Whilst there are numerous examples of how parts of this system will work, there is a great deal of work to be done to ensure we can offer

the whole pathway of care to every eligible patient. We are beginning to consider how we will tackle the key issues, including education and training, workforce planning, audit and research. Certainly the economic case for change will be important, although it seems likely that perioperative medicine would be a cost-effective solution through reduced costs of treating complications. There are clearly challenges ahead but, working together, there is no reason why we cannot make perioperative medicine a reality for every NHS patient who needs a little extra care to ensure surgery is a safe and effective treatment for them.

Professor Monty Mythen
RCoA Council Member
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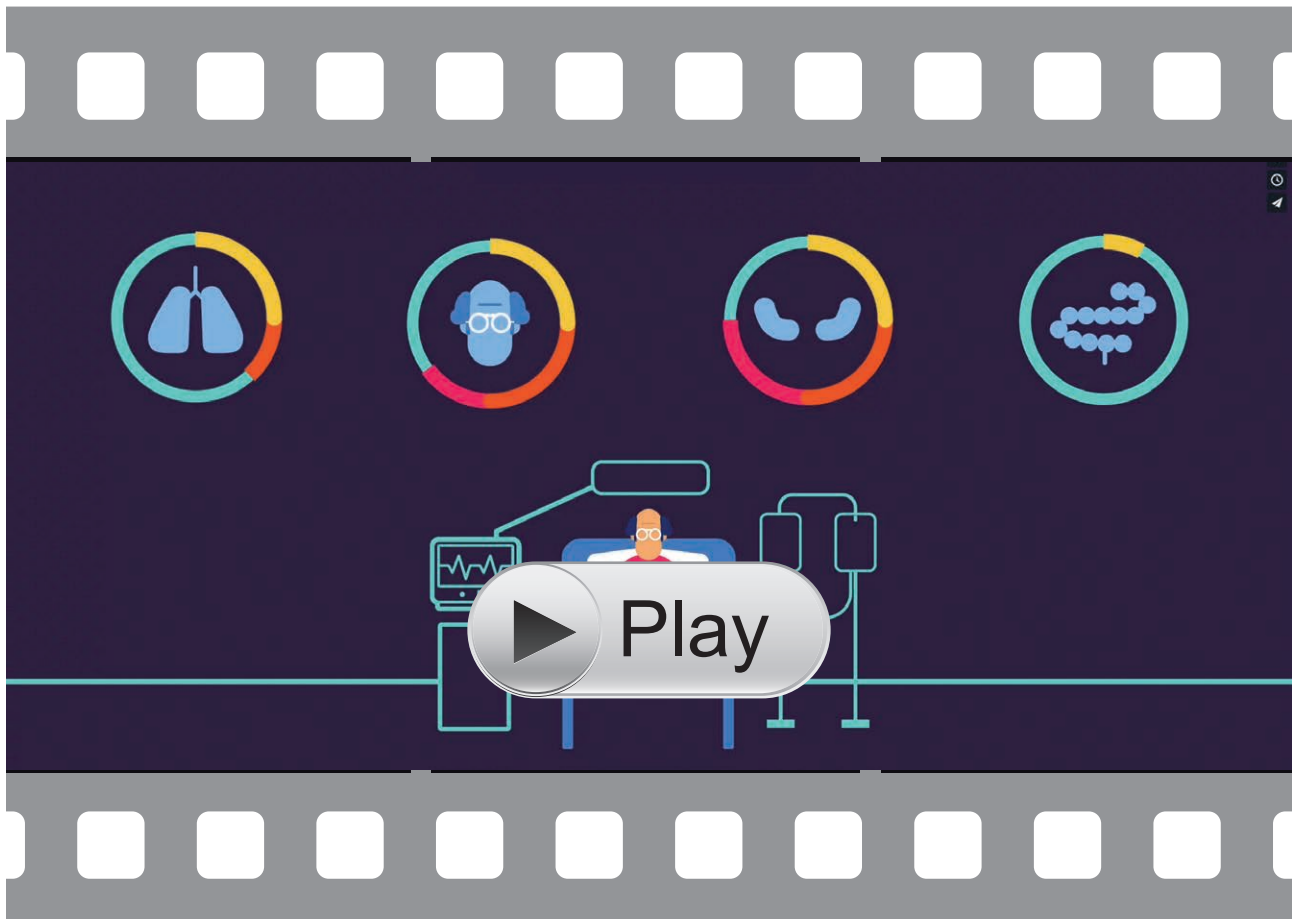
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Perioperative medicine: the pathway to better surgical care

To see what good perioperative care could look like, please view our animated film and follow 'Doug' along his surgical pathway.



Further information

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Visit the perioperative website at www.rcoa.ac.uk/perioperativemedicine and watch the film.





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