

UK HEART SURGERY

WHAT PATIENTS CAN EXPECT FROM THEIR SURGEONS

HEART OPERATIONS 1st APRIL 2001 - 31st MARCH 2011



SCTS
Society for Cardiothoracic Surgery in Great Britain & Ireland



The Society for Cardiothoracic Surgery in Great Britain and Ireland (SCTS) is a charity that exists to promote the specialty of cardiothoracic surgery (surgery on the heart, lungs, chest wall and oesophagus). It has members who are doctors, nurses and other professionals allied to medicine. More recently it has been welcoming patients as associate members. Most consultant cardiac surgeons in the UK are members of the Society. It provides the clinical leadership for the National Adult Cardiac Surgery Audit.

www.scts.org



The National Institute for Cardiovascular Outcomes Research (NICOR) is part of the Centre for Cardiovascular Preventions and Outcomes at University College London. It is a partnership of medical professionals, IT experts, statisticians, academics and managers. It manages six cardiovascular clinical audits, including the National Adult Cardiac Surgery Audit. NICOR's mission is to provide information that can be used to improve quality of care and outcomes for patients with heart disease.

www.ucl.ac.uk/nicor



The Northwest Institute for BioHealth Informatics (NIBHI) is an informatics research and e-Health innovation hub, centred at the Manchester Academic Health Science Centre (MAHSC) within the University of Manchester. Founded in 2004, NIBHI now has a portfolio of grants in excess of £25M and employs around 40 staff from a broad range of disciplines. Its environment is deliberately multi- and trans-disciplinary, harnessing computational thinking for public health. It carried out the analysis for this report.

www.nibhi.org.uk



The Healthcare Quality Improvement Partnership (HQIP) was established in April 2008 to promote quality in healthcare, and in particular to increase the impact that clinical audit has on healthcare quality in England and Wales. It is led by a consortium of the Academy of Medical Royal Colleges, the Royal College of Nursing and National Voices, and funds and commissions NICOR's management of the National Adult Cardiac Surgery Audit.

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We would especially like to thank both the surgeons and database managers who submit data to the National Adult Cardiac Surgery Audit. Without their input, we could not continue to produce the analyses required to effectively monitor and improve the standard of adult cardiac surgery in the United Kingdom.

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FOREWORD

James Roxburgh, President of the Society for Cardiothoracic Surgery (SCTS)



The Society for Cardiothoracic Surgery in GB and Ireland (SCTS) is a charity that exists to promote the specialties of cardiac

surgery, lung/oesophageal surgery and surgery on the chest wall. Our members are the surgeons and other professionals who provide care for patients who are unlucky enough to suffer from the diseases we treat.

Like much of medicine, we have been coming to terms with improvements in the medical profession's ability to treat patients alongside changing expectations of society in a world driven by 24 hour news and instant communications. The days of Dr Findlay and Sir Lancelot Sprat are long gone!

Within the SCTS we embrace these changes and are working hard to ensure that we, as professionals, are acting first and foremost in the interests of our patients and their carers at all times. This has required a marked shift in our attitudes and priorities, and to some extent we hope that this book is evidence of those changes; until now we have directed all our publications and communications primarily towards our professional colleagues; with this report we are now trying hard to put the patients first in all our activities.

In cardiac surgery there has been a tendency for us to look back at the events that happened in children's cardiac surgery in Bristol in the 1990s and argue that, whilst they occurred in our speciality, they could have happened and been exposed in any branch of medicine at that time.

The recommendations following on from Bristol, which involve the need to publish outcomes for individual clinical teams, were generalised for all medicine and not specific to cardiac surgery. Indeed the recent events at Mid Staffordshire NHS Foundation Trust, which are in many ways more profound, were not in any way related to cardiac surgery and have come some 10 years after Bristol. However, because Bristol was about cardiac surgery, we as a professional group have been held to account by society (through politicians and the media) and have felt an important obligation to respond and publish our results by named hospital and consultant since 2005.

Whilst this was initially uncomfortable, we have come to understand an important principle; patients come first. The only people who can define the technical aspects of what quality of care the patients should get are the cardiac surgeons, who must make those decisions in partnership with patients. We therefore have an overwhelming obligation to work with patient representatives to define those standards clearly, and to monitor care to check those standards are always achieved. We know also that we must take action where they are not.

There is accumulating evidence that this process gives clear benefits to patients, with



MORTALITY is another word for death. When we talk about mortality rates in this report we are talking about the percentage of patients from a specified group who die after cardiac surgery. Mortality rates are calculated for specific time periods after surgery; for example before discharge or within a certain number of days.

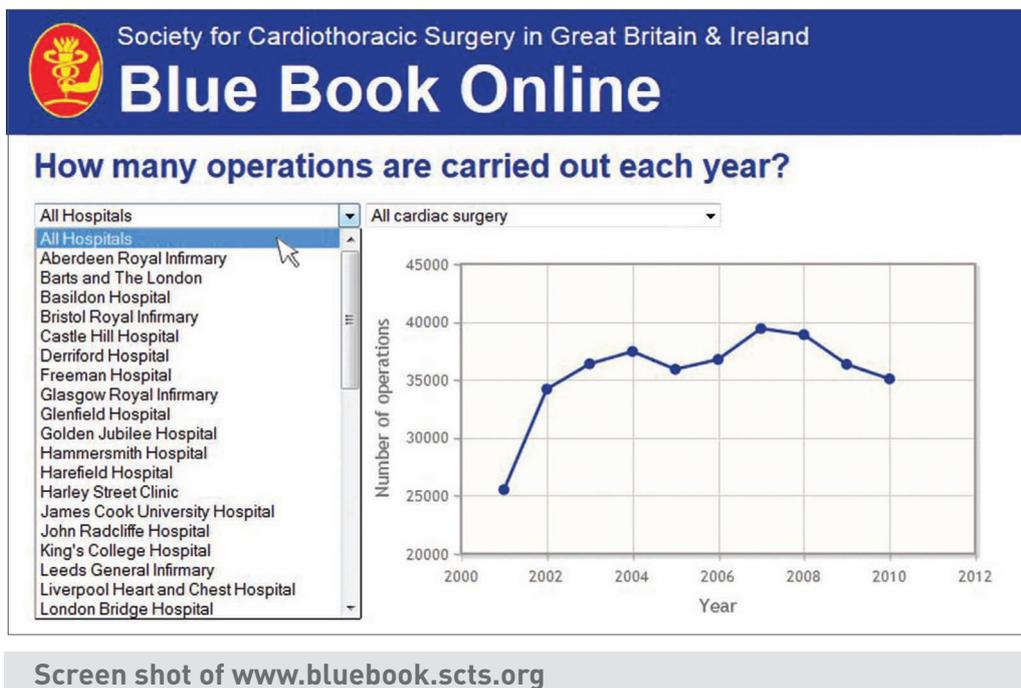
the in-hospital mortality rates in the UK (after making appropriate adjustments for changing complexity of surgery), being about 1/3rd of what they were 10 years ago.

Putting patients first is what we are now trying to do. We have published our results of surgery by hospital and consultant at www.scts.org/patients, which we hope will drive further improvements in quality and allow people to make informed choices about their care. We continue to collect information on all operations undertaken in the UK, and have put that data into the public domain at www.bluebook.scts.org.

We accept that clinical outcomes of surgery are only one important facet of care, and believe that measuring patient experience is also important. This should include not just a vague question such as 'were you satisfied', but should feature questions to allow specific aspects of care to be improved where necessary. We also believe that this information should be specific down to

individual doctors, so we can all monitor our own performance from the patient's view. Data on outcomes, experience and other aspects of professionalism should be used to demonstrate that all surgeons are fit to practise through the process of professional revalidation.

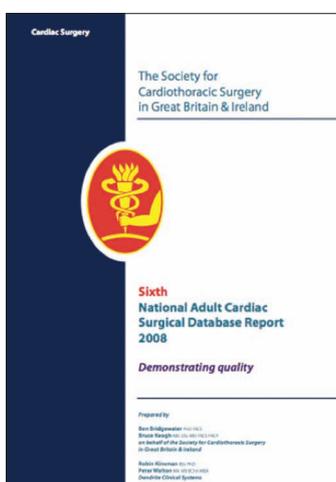
We have described these initiatives in the pages of this report, and hope that you will find it of interest. Key to us putting patients first is improving our understanding of what patients want. We already have patient representatives who work with us. One of them, Mike Fisher, has written a contribution for this report (page 10). But we would very much like to get further input about what we are doing well, what we should do better, and what we should be doing but are not yet doing at all. We would therefore seek feedback from this report, either through www.scts.org, where we have a patient discussion forum, or by using the contact details given at the end of this report.



INTRODUCTION

What is the 'Blue Book'?

The 'Blue Books' have been a series of large documents designed for people who work in healthcare. They contain lots of detailed analyses of data collected about heart operations carried out in the United Kingdom. They have been produced by the SCTS in partnership with Dendrite Clinical Systems Ltd, and can be downloaded from www.scts.org.



Sixth Blue Book, 2008

It is written for people with little or no knowledge of cardiac surgery, and aims to show only the information that is useful to patients.

This report presents selected findings from the National Adult Cardiac Surgery Audit for heart operations that took place between 2001/2 and 2010/11, alongside other information about cardiac surgery in the UK.

Where you see **words highlighted like this**, a description of a term is given.



TIP: SCTS have made an online version of the Blue Book, which you can visit by going to www.bluebook.scts.org. Here you can see up-to-date and patient friendly analysis of National Adult Cardiac Surgery Audit data.

What is Cardiac Surgery?

The heart is a muscle in the body that is responsible for pumping blood containing nutrients and oxygen around the body.

Cardiac surgery is an operation related to the heart. There are lots of different types of cardiac surgery, designed to treat various problems with the way that the heart works. In this report we focus on the most common heart operations.



TIP: More information about different types of heart surgery can be found at www.scts.org/patients.

What is the National Adult Cardiac Surgery Audit?



MAJOR ADULT HEART OPERATIONS

are where the chest and the tough sac containing the heart (called the pericardium) is opened to perform a procedure on the heart. This is different from what is called 'minimally invasive' cardiac surgery, where instruments are passed into the body through small incisions and guided by cameras. Adults are classed as patients who are 18 years old and over.

Most of the tables and graphs in this report are based on data that is collected by the National Adult Cardiac Surgery Audit. The audit is managed by the National Institute for Cardiovascular Outcomes Research (NICOR), with professional leadership provided by the SCTS.

The audit has been running since 1977, with a more complete set of data being collected since 1996.

It securely collects data on all **major adult heart operations** from the 35 NHS hospitals in the UK that carry them out. A number of Irish and UK private surgical units also voluntarily submit data.

All collection and use of data is in line with strict government guidance and legislation about patient confidentiality and data protection. When we use data for analysis it is completely anonymised. This means that individual patients cannot be identified from the data.



The aims of the audit are to:

- Understand how cardiac surgery is changing over time, to enable better planning for the future.
- Analyse how different patient characteristics (age, sex, status of the heart and presence of certain diseases other than heart disease) affect the outcomes of surgery.
- Support hospitals and surgeons to continually improve the quality of care that is given to patients.
- Detect hospitals or surgeons where patients aren't doing as well after cardiac surgery as we would expect. This allows for better understanding of the issues, and triggers appropriate action to be taken as necessary.
- Track and publish the outcomes of cardiac surgery to provide information for patients that will help them to make informed choices.
- Publish the outcomes of surgery for hospitals and consultant surgeons to drive the development of cardiac surgery services. Publishing the outcomes of surgery can also reassure the public that quality of care is being actively monitored and is of a high standard.

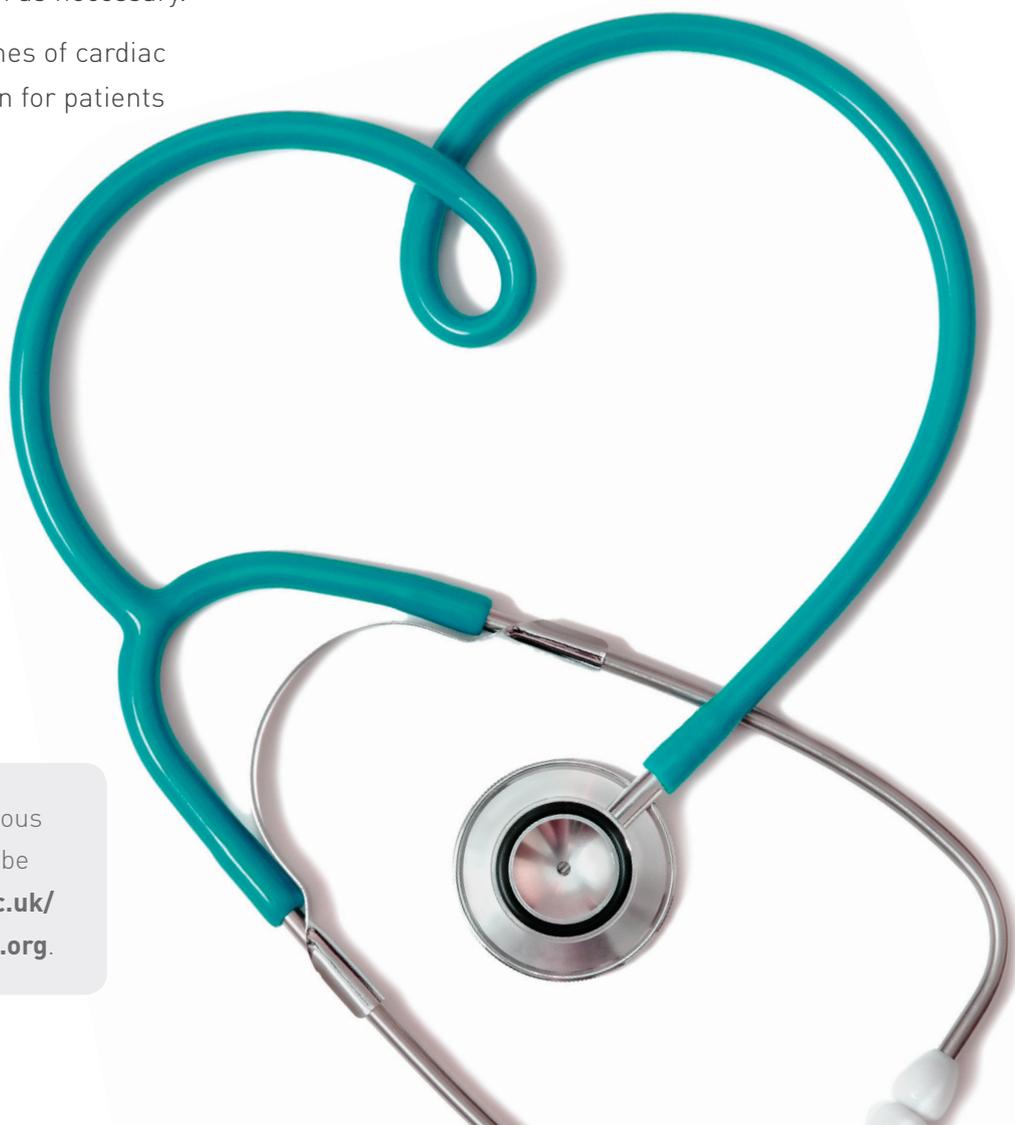


TIP: Results of previous analysis of data can be found at www.ucl.ac.uk/nicor and www.scts.org.

What does SCTS think patients want?

We have been very fortunate as a professional society to benefit from excellent input from patient representatives. Our first was David Geldard, MBE, who unfortunately passed away in 2011. He has been succeeded by Mike Fisher, who has kindly written a section in this book entitled 'A patient's view' (page 10).

Much of what we have learned about what patients expect and want during cardiac surgery has come from our representatives. We have explored some of the issues in detail in our previous publication, '*Maintaining patients' trust*', which can be downloaded from www.scts.org.



We believe that:

- To help patients choose a hospital and surgeon to carry out their heart operation, we must make available as much easy to access, accurate, and clear information as possible.
- We recognise that patient's experience of care starts at the moment of referral and ends at the final discharge. It is the whole of that experience that forms a lasting impression of quality.
- High quality surgery and medical care is clearly important, but this must be combined with great communication, empathy, and a clean and comfortable environment. Much of this is the responsibility of the doctors to ensure, but other areas require nurses and hospital managers to fulfill their roles well.
- Patients expect that the doctor treating them will be up-to-date with their knowledge, and have the ability to apply that knowledge for the benefit of their patients.

- It helps to know that your surgeon will take a personal interest throughout in the progress of your care and act as the point of contact should any problems or queries come up. It is mainly through this relationship that trust between patients and doctors develops.
- Some patients may not want to look in detail at analysis of clinical outcomes and patient experience, but will trust the SCTS to make sure that all hospitals and surgeons are performing well. We must continue to deserve this trust.
- Transparency is a given, not an option.

It is for these reasons that we have put so much effort into establishing and running the National Adult Cardiac Surgery Audit and educational programmes like the SCTS University (page 48).



A patient's view

Mike Fisher, SCTS Patient Representative



There is a well-established saying that “if you do not measure it you cannot manage it.”, and since the mid-1970’s the Society

of Cardiothoracic Surgery (SCTS) has been measuring the clinical outcomes of its cardiac surgery patients. In the early 1990’s Sir Bruce Keogh and Peter Walton developed a comprehensive database that enabled outcomes to be compared, and in 2005 these data were published online at to the level of individual consultant surgeons.

This was a first for the SCTS and has acted as the forerunner for many developments in measurement across the NHS. The results have been very significant for patients. The mortality for all Coronary Artery Bypass Grafts (CABG) has fallen from 2.2% in 2001 to 1.6% in 2011. For isolated first-time aortic valve operations it has fallen from 3.1% in 2001 to 1.7% in 2011 and for combined aortic valve and graft operations from 6.6% in 2001 to 3.8% in 2011.

The focus on measuring mortality outcomes in cardiac surgery has had the desired effect of

significantly improving patient care. Pressure for even further improvement needs to be maintained, which the recent announcement by NHS England that individual consultant mortality rates for ten specialties across surgery and medicine must be published by summer 2013 will help to facilitate, despite the opportunity for “unforeseen consequences”.

The environment in which the NHS now operates is changing significantly, and measurement practices need to reflect these changes. There has to be an emphasis on the whole service provided, not just the clinical outcomes. The ageing profile of patients requires the balancing of personal needs with clinical outcomes. Consultation with patients on the options available to them requires thorough discussion.

All this comes amongst demands to be more cost effective, and rising patient expectations. The Department of Health has recently published its intention to follow a programme entitled “Putting Patients at the Heart of the Information Revolution”. This programme envisages the introduction of a visible service culture in the NHS enabled by well-established technology.

The amount of work required to achieve these changes must not be underestimated, just as the amount of work required to produce this report has been huge. My thanks are due to Professor Ben Bridgewater and his team for all of their efforts, which have made this report possible.

PART ONE: LOOKING AT OPERATION DATA TO ASSESS AND IMPROVE CARE

Introduction

Operation types and their outcomes can be measured definitively. This sort of data is a good way of finding out which patients are having cardiac surgery, what sort of surgery they are having, and what the outcomes of surgery are. This information can be used to examine trends in surgery and assess the effectiveness of certain procedures.

 **CLINICAL OUTCOME** is the change in the health of a patient as a result of a cardiac surgery. Examples of good clinical outcomes are a reduction of chest pain, breathlessness, or a longer life-expectancy. Bad clinical outcomes include complications like stroke, and death.

It can also be used to monitor how good the outcomes of hospitals and specific surgeons are.

The type of heart operation that a patient has and their **clinical outcome** is understandably very important to patients. However, there are many other things about coming to hospital to have cardiac surgery that affect patient's experience. Other ways of measuring and improving the quality of care are discussed in part 2 of this book.

What follows is a description of the analysis on National Adult Cardiac Surgery Audit data about operations carried out between 1st April 2001 and 31st March 2011.



How is cardiac surgery changing over time?



CORONARY ARTERY BYPASS GRAFT SURGERY

SURGERY, often abbreviated to CABG, involves taking an artery or vein from elsewhere in the body and attaching (grafting) it to the diseased coronary artery below the point of narrowing. This allows the blood to flow around (bypass) the blockage and reach the heart muscle without restriction.

Cardiac surgery is changing. Ten years or so ago about 2/3 of all cardiac surgery activity was isolated **coronary artery bypass graft surgery** (see page 16). That has now gone down to a half. There are two main reasons for this; firstly there has been a decrease in the number of isolated coronary artery bypass operations and

secondly there has been an increase in valve and **'other' cardiac surgery**. There has also been a big increase in the proportion of patients undergoing **'other the isolated CABG surgery'**.

These changes have come about because different types of patients are now receiving cardiac surgery.



'OTHER' CARDIAC SURGERY

Patients who have operations on the heart that are not coronary artery bypass graft, valve, or major aortic surgery.



OTHER THAN ISOLATED CABG SURGERY

SURGERY: Isolated coronary artery bypass grafting (CABG) is when the surgeon performs only a CABG procedure during an operation. If a surgeon performs another procedure as well as a CABG, or any procedure(s) other than a CABG, this tends to be more complex and can be described as 'other than isolated CABG surgery'.

Figure 1: Number of cardiac operations (UK)

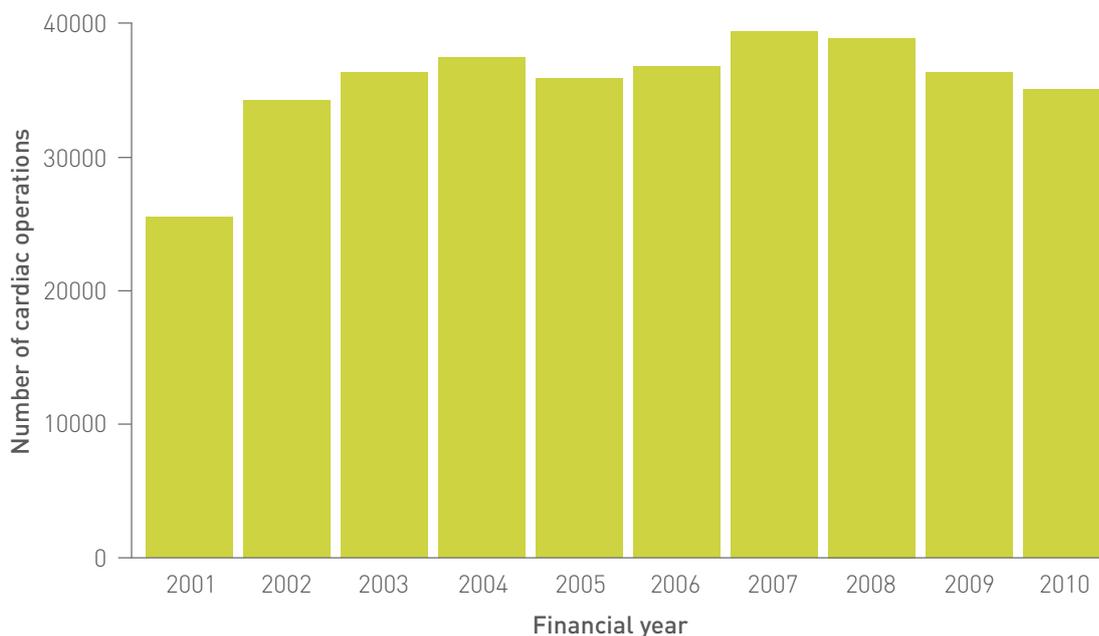
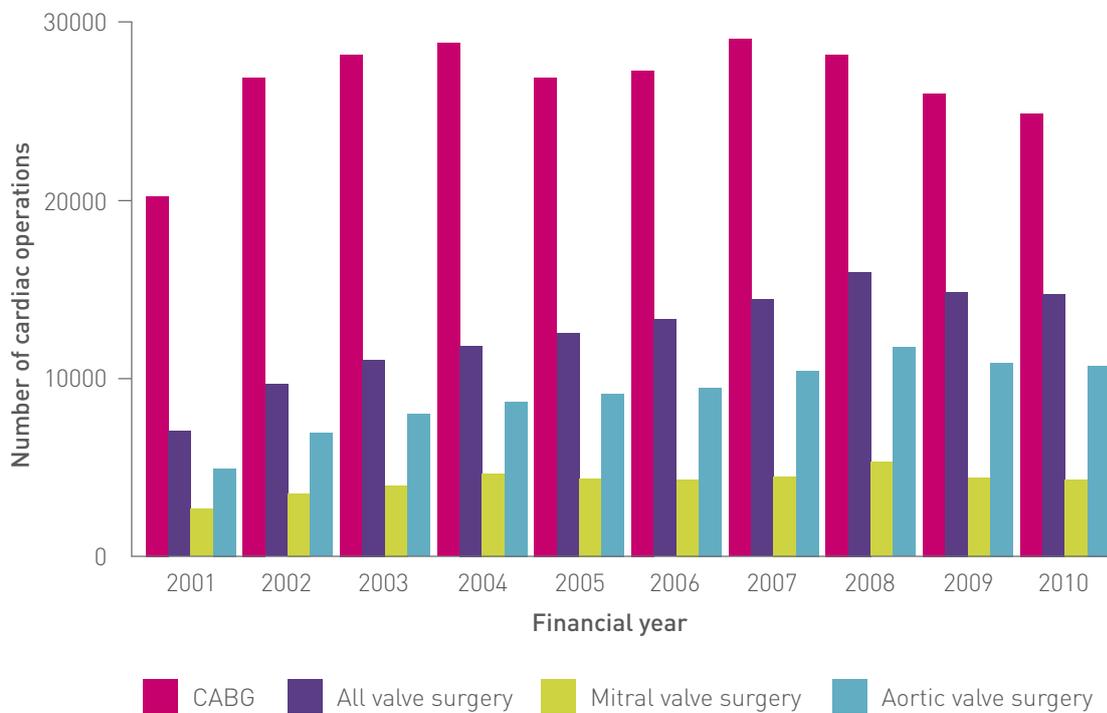


Figure 2: Changes in types of surgery performed over time (UK)



UNDERSTANDING THIS GRAPH:

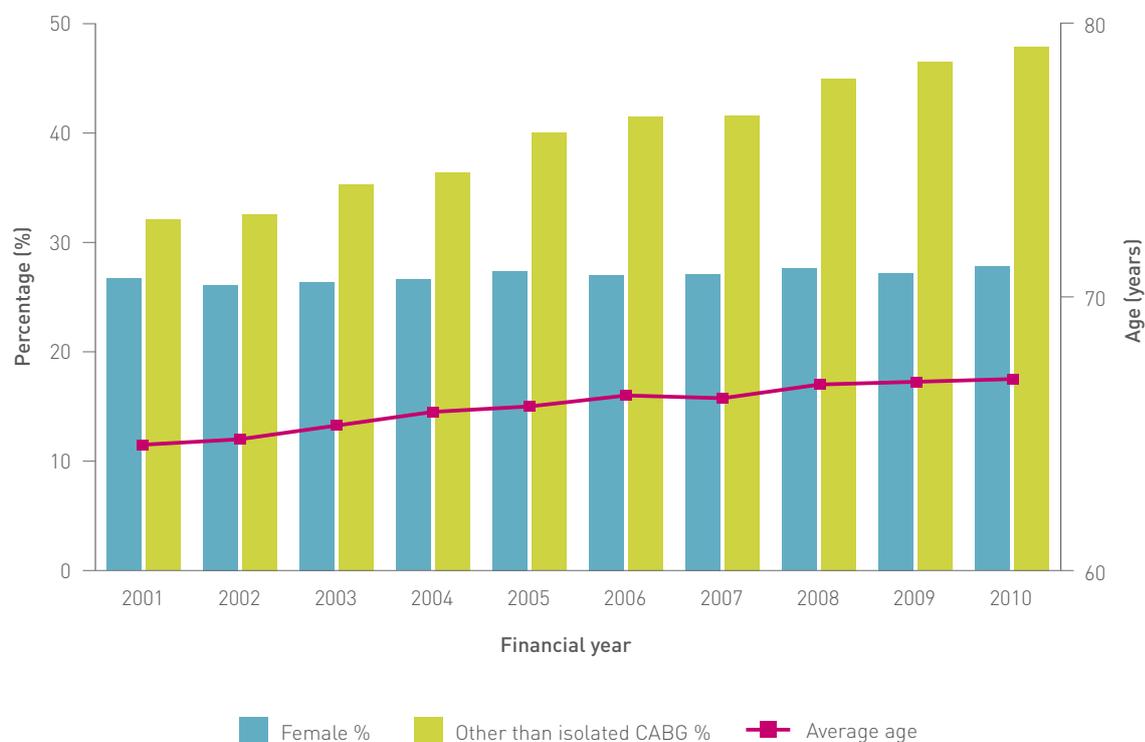
A patient who has combined mitral valve and aortic valve surgery has been counted once in the mitral valve column and once in the aortic valve column (twice overall). The same patient will only be counted once in the 'all valve surgery' column.

The average age of patients who have cardiac surgery is rising, and has increased by 2 ½ years

over the last 10 years. This is probably because people are becoming healthier and living longer. But it is also because surgeons are getting better results when operating on elderly patients with heart disease.

More patients are now female than ten years ago. Women are higher risk when having cardiac surgery compared to men. The reasons for this are not completely understood. The proportion of patients having more complex operations ('other than isolated CABG') has also increased.

Figure 3: Trends in risk factors for adult cardiac surgery (UK)



RISK FACTORS

are patient characteristics that increase the chance of complications during or after surgery. They are things like old age, diabetes, and requiring more complex surgery.

Overall there has been an increase in the complexity of patients coming to cardiac surgery over time, meaning that patient risk is higher than it was. More detailed information about risk factors

can be found at www.bluebook.scts.org.

The following graph (Figure 4) shows how expected and observed mortality has changed over time. Expected mortality is calculated using a

system called EuroSCORE (www.euroscore.org). The EuroSCORE calculates a patient's expected risk of dying by taking their risk factors into account. EuroSCORE expected risk is based on the state of cardiac surgery in 1995.

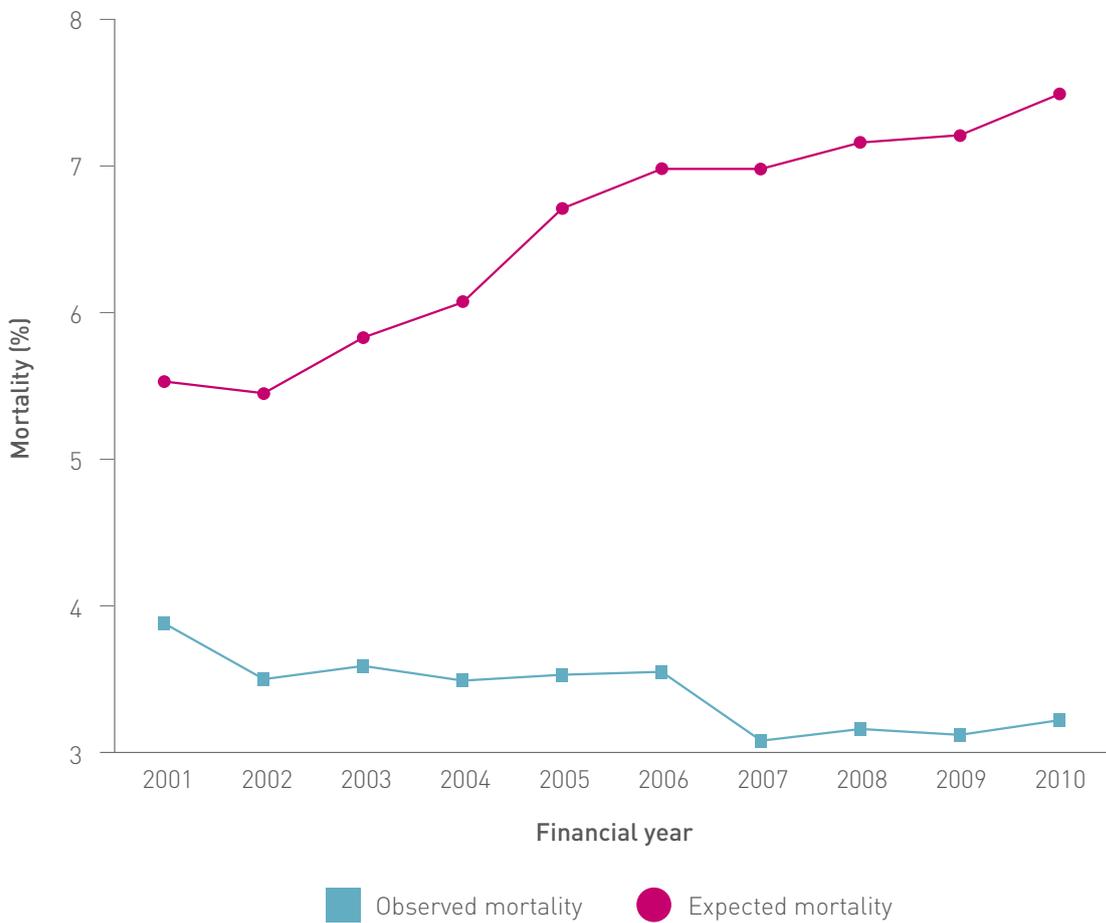
Because surgery has improved since then, the EuroSCORE model expects the risk of death after surgery to be higher than it actually is now. However, 'expected mortality' still allows us to examine relative trends over time.

The observed mortality is the number of patients who actually died in hospital after surgery.

Despite the rise in expected mortality based on risk factors of patients having surgery, observed mortality has gone down a lot over the last ten years (Figure 4). This means that if a patient with

similar risk factors had surgery in 2011 rather than 2001 they would be 1/3 (33.3%) less likely to die. This is a reflection of improvements in care that have been put in place over this time period.

Figure 4: Trends in observed and expected mortality over time (UK)



Coronary artery bypass grafting (CABG)

Coronary artery bypass grafting is the most common heart operation in the UK. The heart muscle is highly specialised and pumps blood around the body. It has to work very hard and to do so it receives its energy from oxygen rich blood through blood vessels called coronary arteries.



MYOCARDIAL INFARCTION is

another name for a heart attack. It is a condition where the blood supply to the heart is restricted due to blockage by a blood clot in the coronary artery, which damages to the heart muscle.

Heart disease can cause these vessels to become narrowed or blocked. This can restrict the amount of blood and the oxygen that reaches the heart. When the heart is deprived of oxygen temporarily

a person may feel shortness of breath, chest tightness or pain (known as angina). If the heart does not get the oxygen it needs for a longer period of time, the heart muscle may become permanently damaged by a heart attack (also called a **myocardial infarction**).

When there are serious or multiple narrowings/blockages of the coronary arteries, patients can often benefit from coronary artery bypass grafting, which is undertaken by cardiac surgeons. In other circumstances the blockages may be treated by stretching them open with a balloon or a wire

frame called a stent. These procedures are called percutaneous coronary intervention (PCI). PCI procedures are undertaken by cardiologists through small incisions in the groin or arm. Far more patients used to be treated by CABG than PCI, now more patients are treated by PCI than CABG.

Recent internationally accepted guidelines¹ have given clear recommendations about which patients are best treated by CABG and which by PCI. We expect that when these guidelines have been put into practice they will lead to an increase in the overall number of patients who receive CABG surgery. This is because, for many patients, CABG has been shown to be a more effective way of treating the symptoms of angina and prolonging life than PCI or treatment with medicines alone.

It is good that patients with coronary artery disease have a number of possible treatment options. For example, patients in the process of having a heart attack are best treated by PCI. In this emergency situation a successful PCI procedure is associated with much better outcomes for patients, and CABG is not really an option. In other groups, such as those with tight narrowing in all of the major coronary arteries and previous damage to the heart muscle, CABG is usually the best option. This is because it leads to better life expectancy and relief of symptoms than either on-going medical management or PCI.

1. Kolh P, Wijns W, Danchin N, et al. "Guidelines on myocardial revascularization" Eur J Cardiothorac Surg 38 (Suppl 1): S1-S52.

For some patients, both PCI and CABG may be viable options. CABG is generally associated with better long-term relief of symptoms and a longer life expectancy, but a slightly higher risk from the procedure and a longer recovery time. PCI will involve a smaller operation and faster recovery, but is associated with a higher chance of symptoms returning, and no increase in life expectancy. We would recommend that patients for whom both CABG and PCI are options should be discussed at a multi-disciplinary team (MDT) meeting. This MDT meeting should include both

cardiologists who do PCI and surgeons who do CABG. Any recommendations from the meeting should be discussed in detail with the patient and their carers to enable patient choice and shared decision-making to take place.

As well as CABG and PCI there is also the option of continued management with medicines alone, which may offer relief or control of symptoms without exposing patients to the risk or inconvenience of a hospital admission or an operation.



First-time isolated CABG

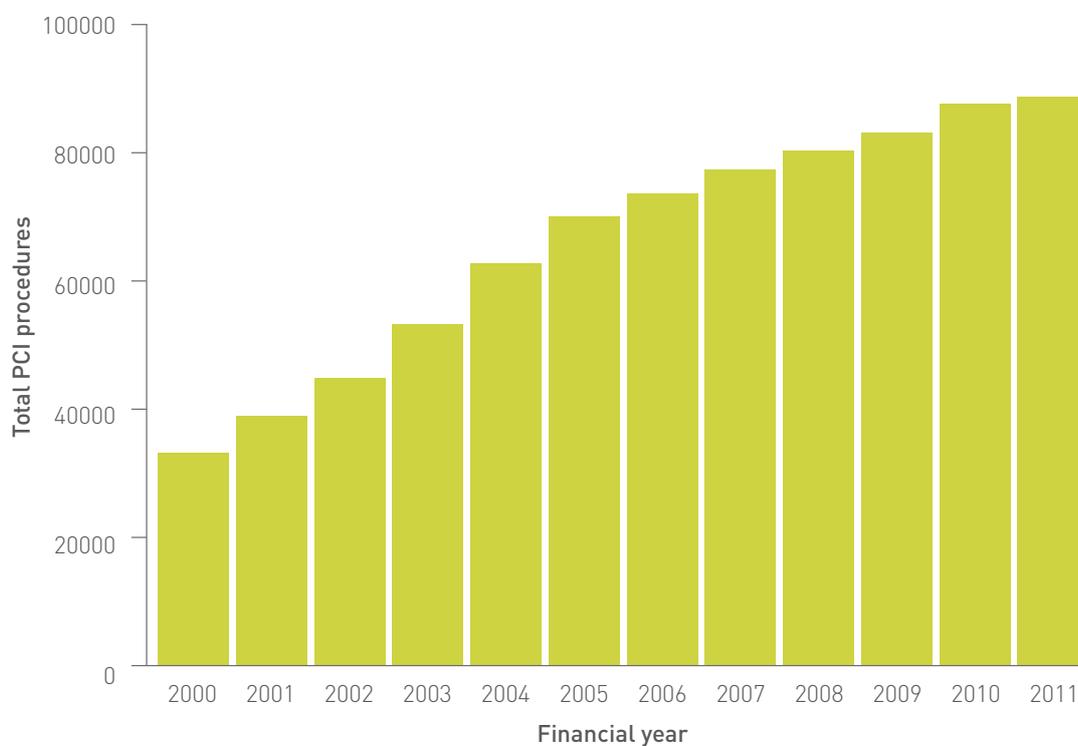
The number of isolated first-time CABG procedures being carried out peaked in 2007/08. Between then and March 2011 there has been a significant fall, of around 20%. PCI numbers

have increased by 10% over the same period (and by 98% over the past 10 years).



Surgery is described as **FIRST-TIME** when a patient has not had a major heart operation before.

Figure 5: Percutaneous Coronary Intervention procedure numbers (UK)

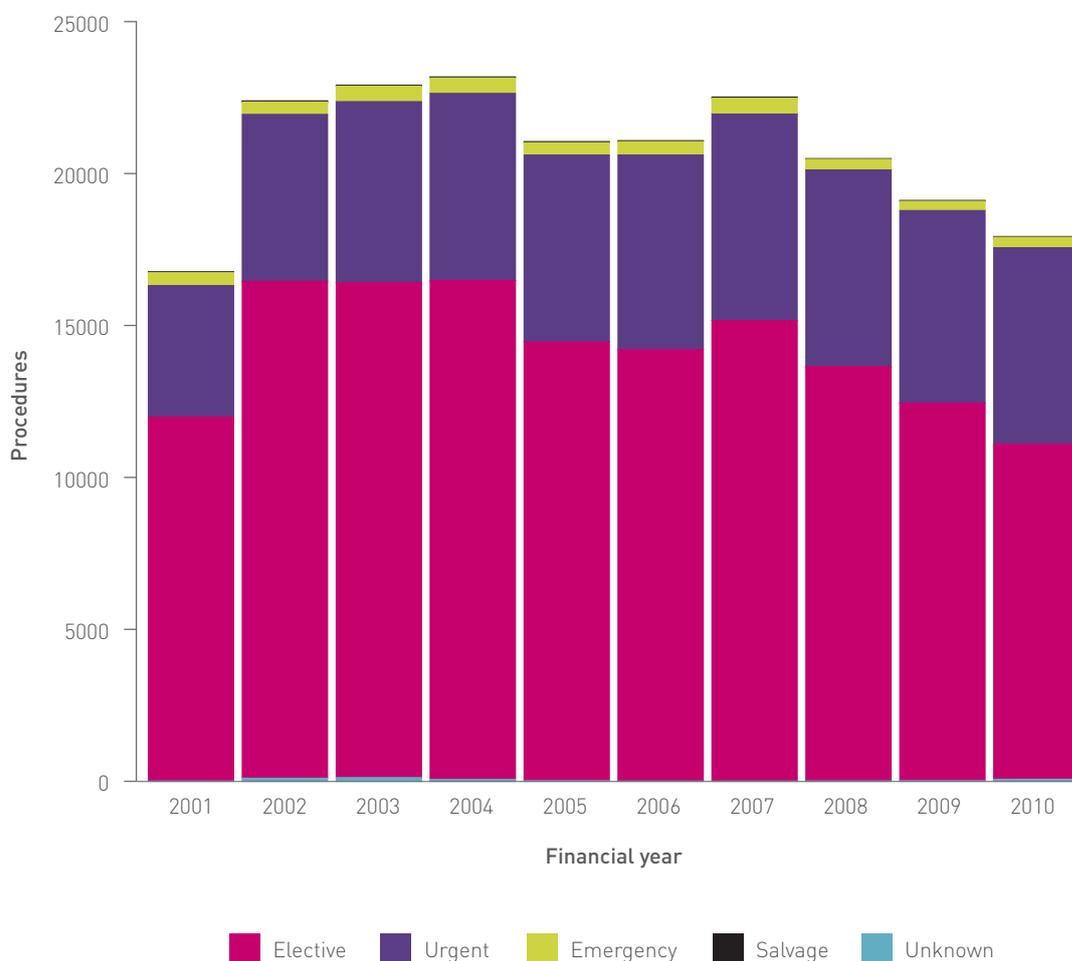


Data courtesy of the National Audit of Percutaneous Coronary Interventional Procedures.

The following graph includes the number of isolated first-time CABG procedures performed between 2001 and 2011. We have split up the

patients according to the urgency of their operation. When a procedure is more urgent, the expected risk of death is higher.

Figure 6: Isolated first-time CABG procedure numbers (UK)



Understanding this graph

Elective: Routine admissions from the waiting list.

Urgent: Patients in hospital who have not been scheduled for routine admission from the waiting list, but who require surgery before being discharged home.

Emergency: Unscheduled patients with on-going unmanageable heart problems. Their surgery cannot be delayed regardless of the time of day.

Salvage: Patients requiring cardiopulmonary resuscitation (CPR) on the way to the operating theatre or before anaesthesia is administered.

Unknown: Patients for whom this information was not recorded.

The overall **in-hospital mortality** for isolated first-time CABG surgery has fallen from 2.2% in 2001/02 to 1.6% in 2010/11. The mortality for

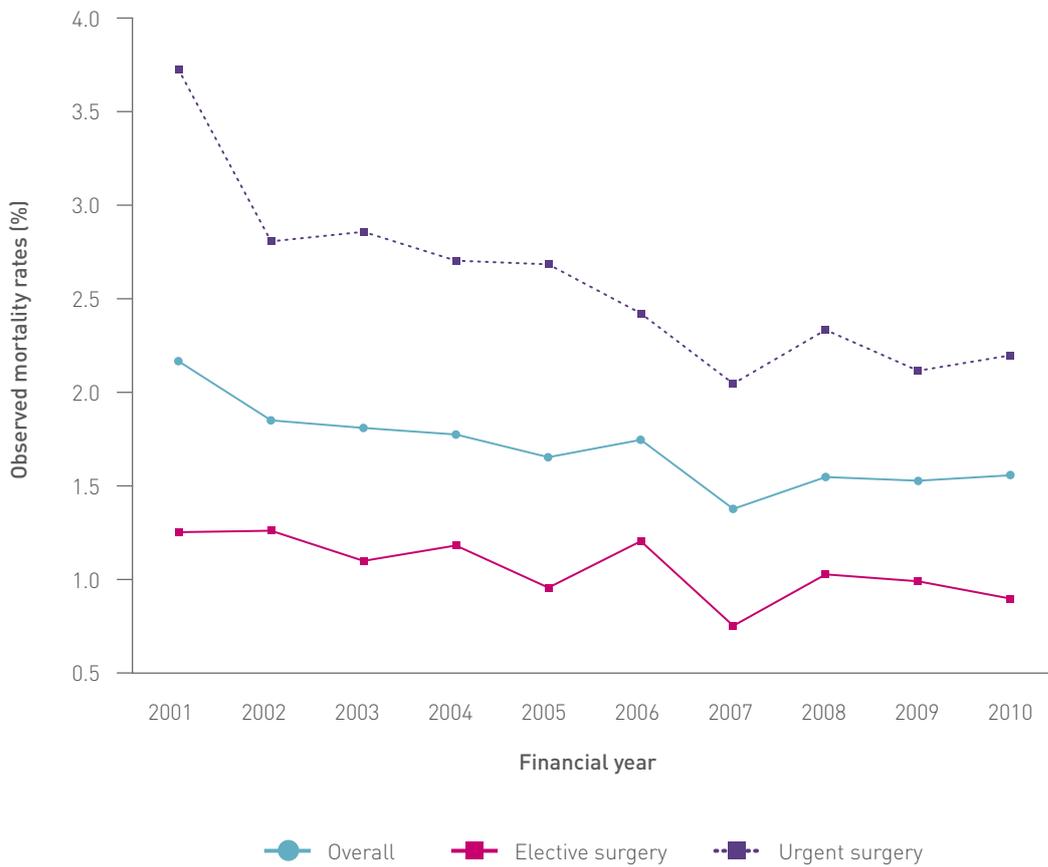
elective CABG surgery has fallen from 1.3% to 0.9%. The mortality for urgent surgery is slightly higher because these patients have usually just suffered a heart attack, or have on-going symptoms of chest pain. These mortality rates are excellent compared to any international standard².



IN-HOSPITAL MORTALITY refers

to patients who die after surgery before being discharged from hospital.

Figure 7: Observed mortality rates for isolated first-time CABG surgery (UK)



2. Bridgewater B, Gummert J, Kinsman R and Walton P. Fourth EACTS Adult Cardiac Surgical Database Report towards global benchmarking (Henley-on-Thames 2010).

The following graph shows that the expected mortality (pink line) for CABG surgery has increased over time, as more elderly and high risk

patients have come to surgery. Despite this the observed mortality (blue line) has decreased as the quality of care has improved.

Figure 8: Trends in observed and expected mortality for CABG surgery (UK)



Valve surgery

The heart has four valves, which open and close to regulate the flow of blood through the heart and make sure that it only travels in one direction. The aortic and mitral valves are on the left side of the heart and the pulmonary and tricuspid valves are on the right.

Heart disease can cause these valves to either become narrowed or leaky. Narrowing of a valve (stenosis) prevents blood flowing properly through it. This means that the heart has to work harder to pump enough blood through the smaller space, which can cause the heart muscle to become thicker and less effective.

A leaky valve allows blood to flow in the wrong direction and means that the heart has to work harder to pump the same amount of blood. If it has to do this for a long time, the heart muscle will become damaged. In both cases the result is that the heart cannot pump enough blood to the areas that need it. This can cause symptoms

like chest pain, shortness of breath, dizziness, collapse, and occasionally sudden death.

If surgery is required to restore the flow of blood through these valves a patient will either have their valve(s) repaired or replaced. Valves tend to be repaired if they are leaky but not seriously damaged, whereas a narrowed or more severely diseased valve might be replaced. Replacement valves are either mechanical (man-made) or tissue (animal).

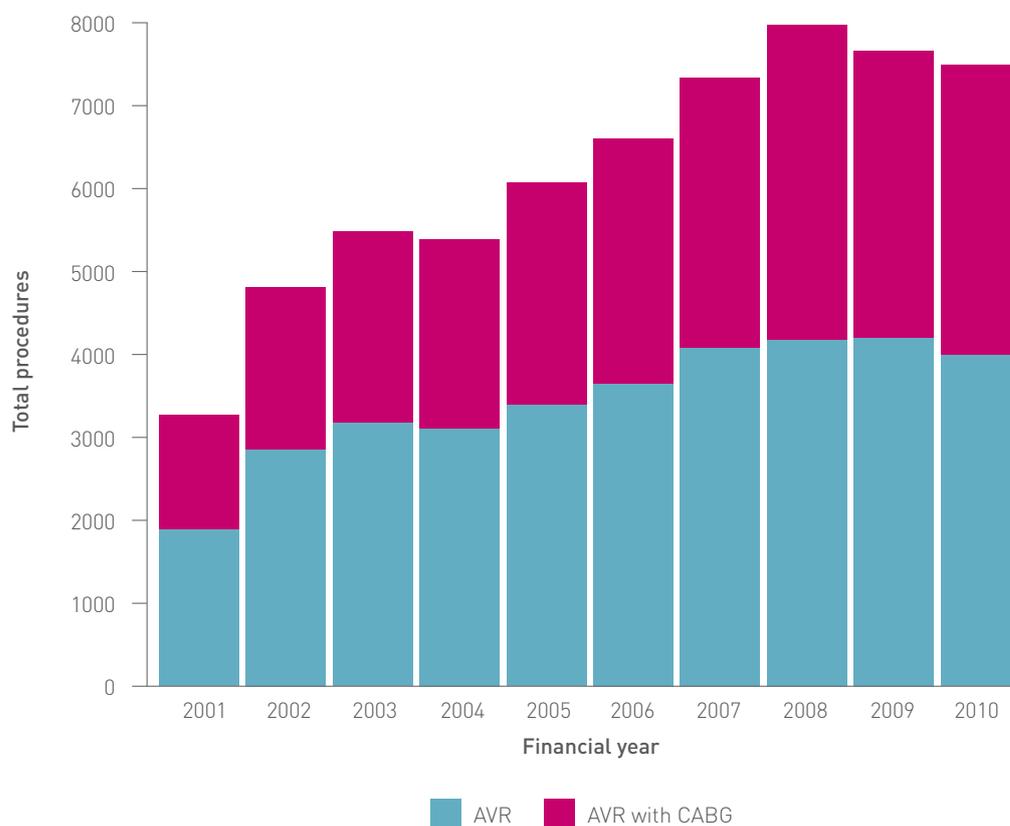
Aortic valve surgery

The aortic valve sits at the outlet of the heart at the base of the major blood vessel called the aorta. This valve opens when the heart pumps, to let the blood out. It then closes as the heart refills, to prevent the blood from flowing back from the aorta into the heart again.

The only effective treatment for narrowing of the aortic valve is aortic valve replacement (AVR) surgery. Leaky valves can sometimes be repaired.



Figure 9: First-time Aortic valve replacement (AVR) procedure numbers (UK)



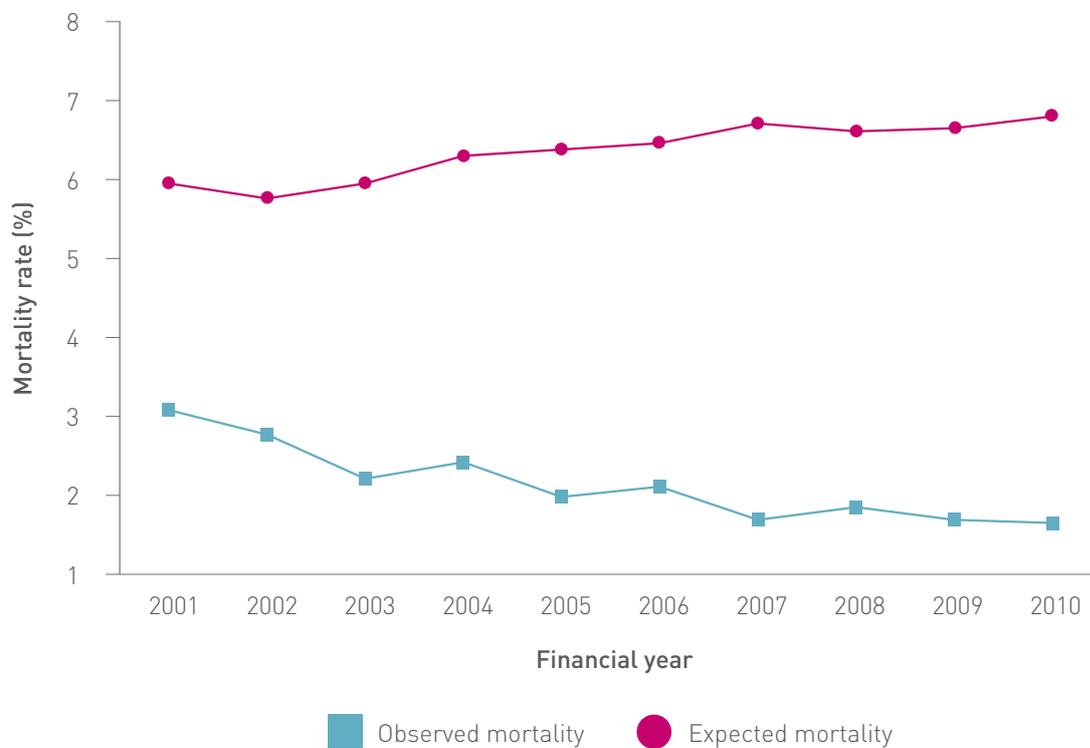
The mortality rate for isolated first-time AVR surgery has decreased significantly, from 3.1% to 1.7%. Mortality for combined AVR and CABG surgery is higher because the more extensive

nature of the disease requires more complex surgery, but mortality rates have still fallen markedly over time from 6.6% in 2011/1 to 3.8% in 2010/11).

The following graph shows the observed and expected mortality rates over time for first-time isolated Aortic Valve Replacement (AVR) surgery. The expected mortality rate (pink line) for isolated first time AVR surgery has gone up

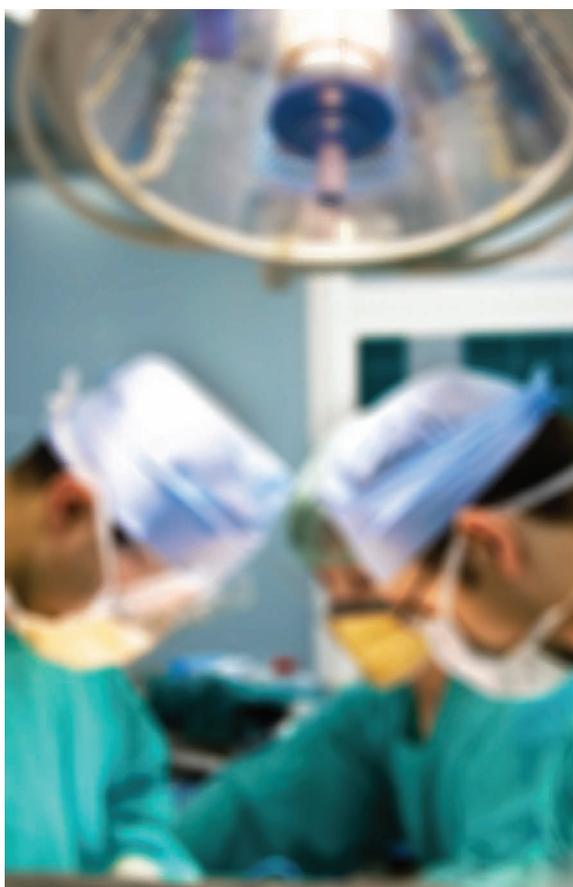
as more elderly and high risk patients come to surgery. Despite this, the observed mortality has gone down, reflecting better quality of care for these patients.

Figure 10: Trends in observed and expected mortality for first-time isolated AVR surgery (UK)



For some patients, open heart AVR is considered to be too risky. For such patients, minimally invasive Transcatheter Aortic Valve Implantation (TAVI) may be an alternative treatment. A thin tube, called a catheter, is used to insert a new valve across the diseased one through a small

incision either in the leg or chest. Since it was introduced in the United Kingdom in 2007, 3879 procedures have been recorded on the UK TAVI registry (figures correct at 06/02/2013, for more information see www.ucl.ac.uk/nicor).



First-time mitral valve surgery

The mitral valve (MV) sits between the major pumping chamber of the heart (the left ventricle) and the lungs. When blood flows back from the rest of the body into the heart it is pumped through the lungs to pick up oxygen, then through the mitral valve before it is pumped back around the body again. The mitral valve may either become narrowed (stenosis), leaky (regurgitation), or both (mixed mitral valve disease).

When the mitral valve leaks or becomes narrowed the heart compensates to start with, so there may be few or no symptoms in the early stages. However, as things progress the most common symptom is shortness of breath. A faulty mitral valve causes the left side of the heart to become stretched up due to a build-up of pressure. However, as the condition progresses this can affect the right side of the heart.

If the right side of the heart becomes faulty this can affect the tricuspid valve, causing regurgitation. For this reason we have analysed all mitral valve operations that have been performed either on their own, or along with tricuspid valve repair. In a tricuspid valve repair the valve is narrowed down to stop it from leaking.

Atrial fibrillation (an irregular heart rhythm) is common in patients with mitral valve disease and we have therefore also included mitral valve procedures where **atrial fibrillation ablation surgery** has been performed.



ATRIAL FIBRILLATION

ABLATION SURGERY is designed to cure an irregular heart rhythm (arrhythmia), known as atrial fibrillation (AF). AF can cause palpitations, and increases the risk of stroke. Ablation surgery uses energy to block electrical signals that can cause AF.

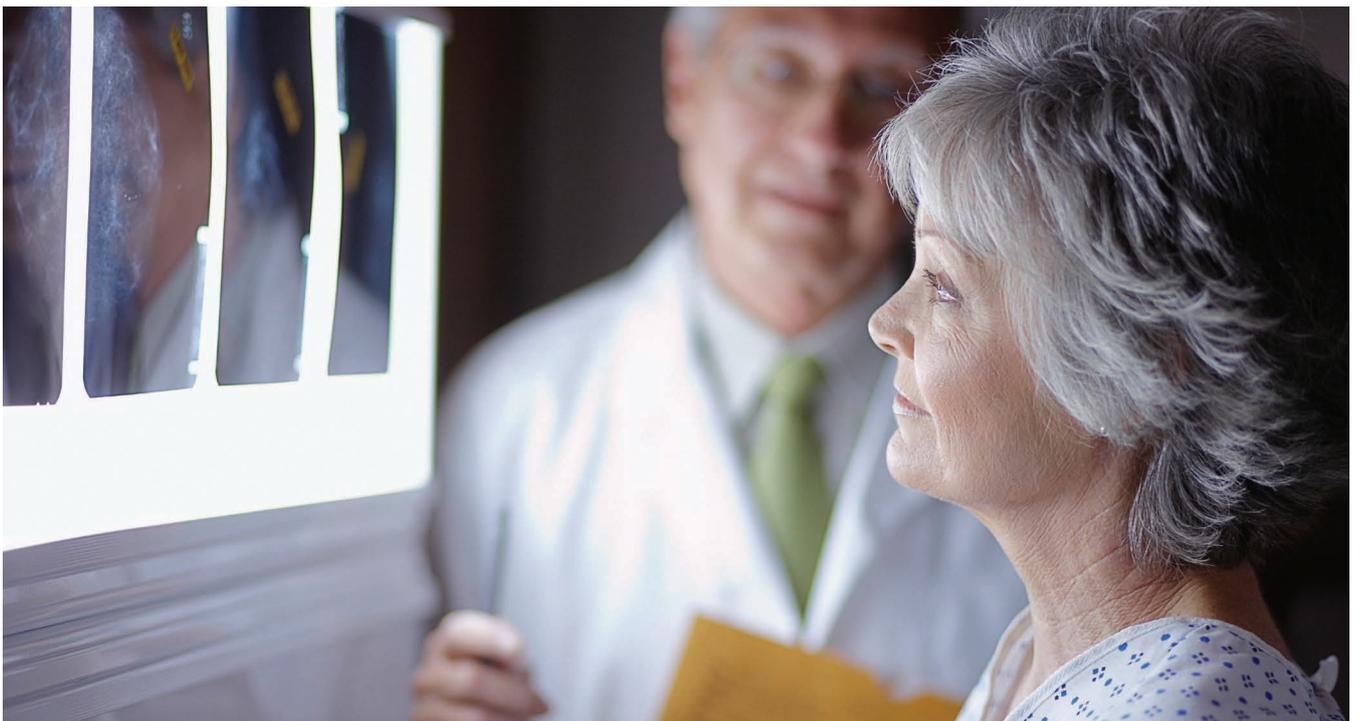
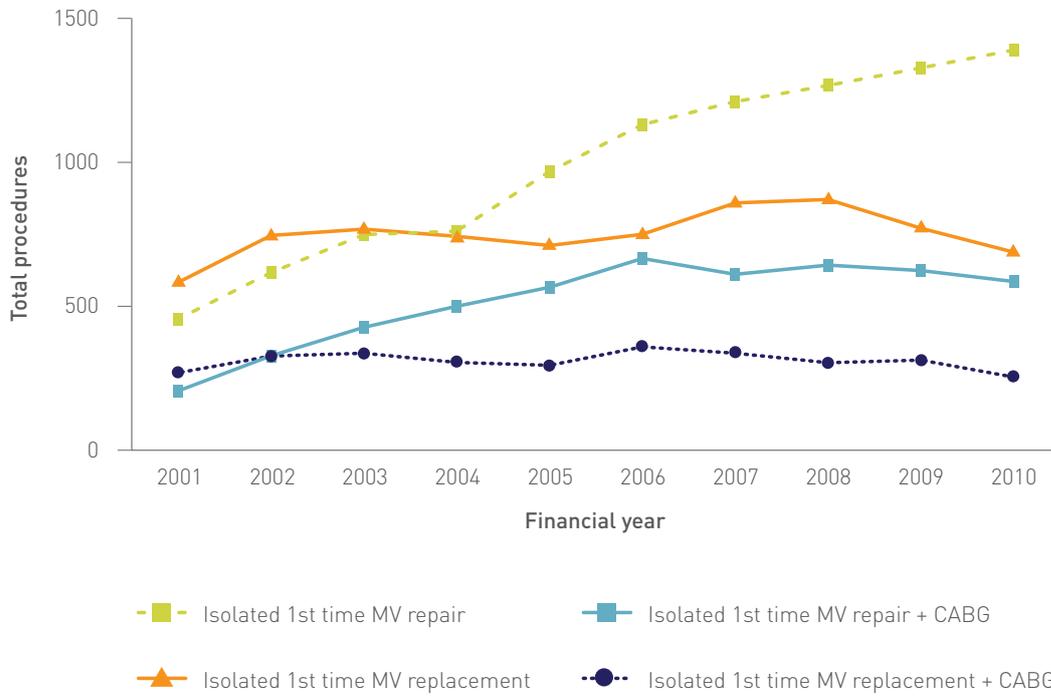


Figure 11: Trends for first-time mitral valve surgery

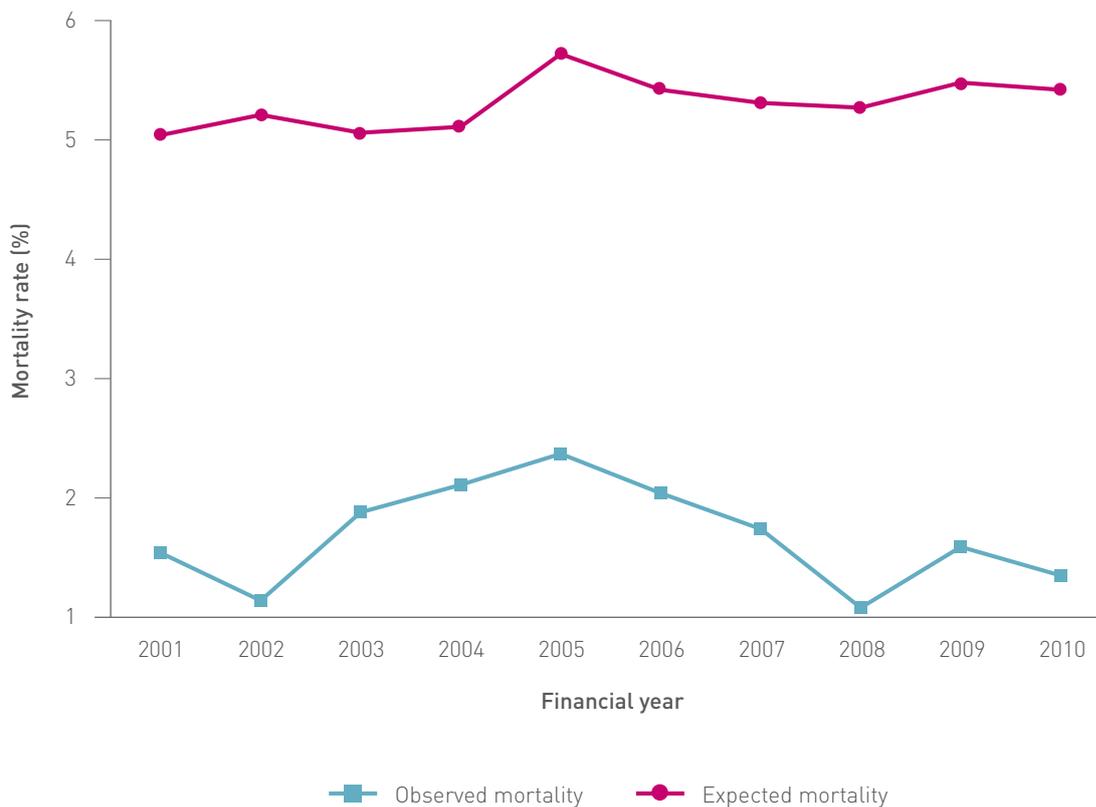


First-time isolated mitral valve repair

The most common cause of mitral valve disease that leads to mitral valve surgery is called degenerative valve disease. It is generally accepted that repairing the valve is a better treatment than replacing it, as it gives lower in-hospital mortality

and better long-term survival. The following graph shows the observed and expected mortality rates over time for first-time isolated mitral valve repair procedures. Observed mortality is consistently lower than the mortality rate that is expected for first-time isolated mitral valve repairs.

Figure 12: Trends in observed and expected mortality for first-time isolated MV repair surgery (UK)

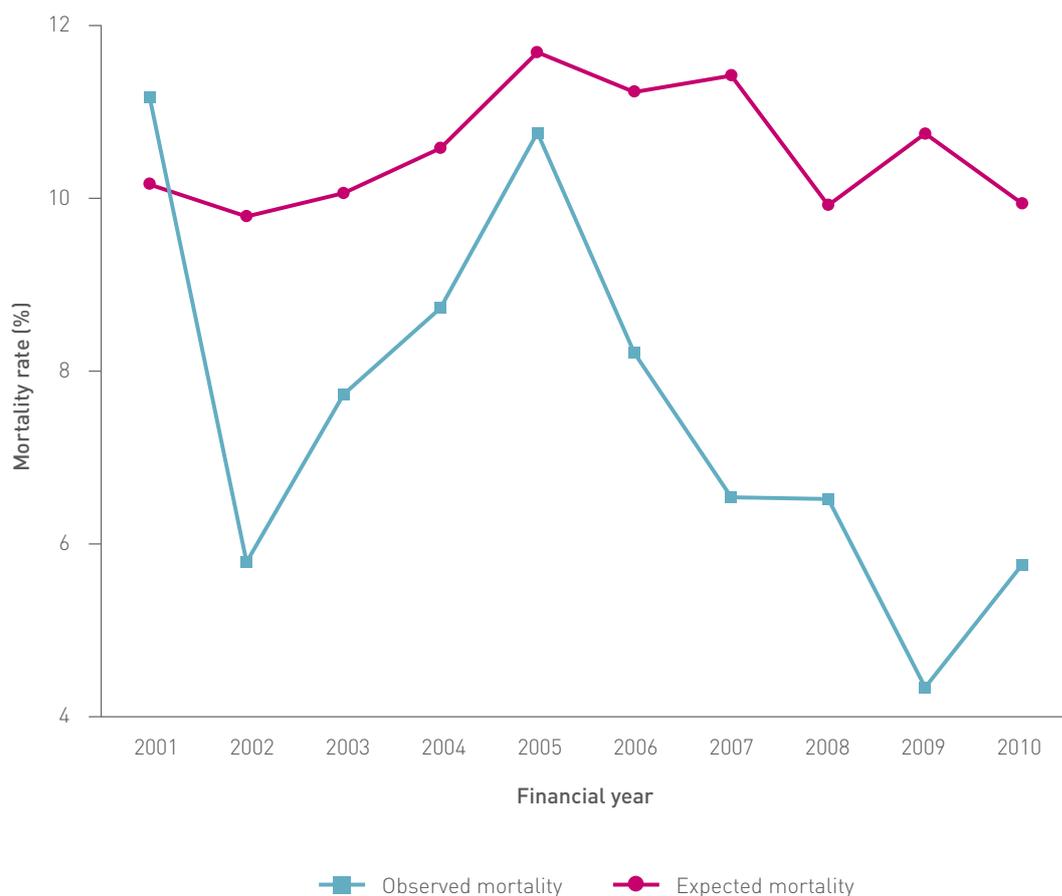


First-time mitral valve repair plus CABG trends

Degenerative valve disease can occur together with coronary artery disease. Patients with both conditions are more unwell, and are at higher risk of dying after their surgery. Also, the combination of mitral valve repair and coronary artery bypass

grafting (CABG) to treat both diseases is complex surgery. This means that the expected and observed mortality rate for mitral valve repair plus CABG is higher than for mitral valve repairs that are carried out on their own.

Figure 13: Trends in observed and expected mortality for first-time MV repair plus CABG surgery (UK)

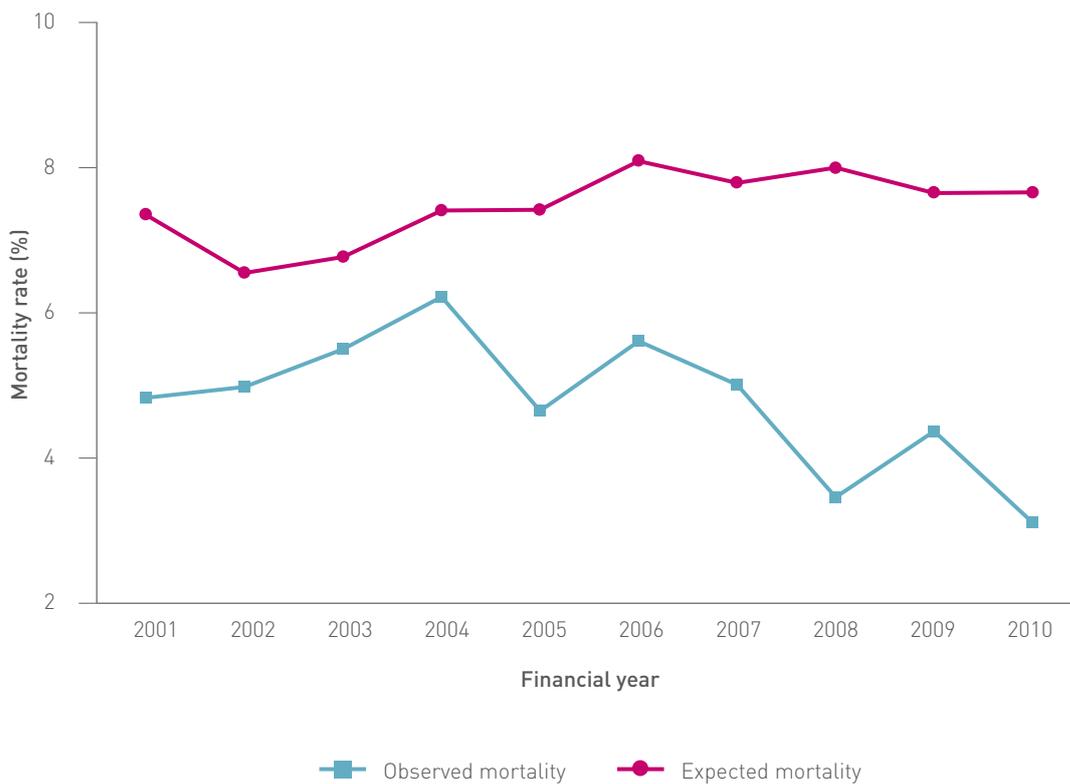


First-time isolated mitral valve replacement (MVR)

Although mitral valve repair is generally considered to be a better treatment than mitral valve replacement, it is not always an option due to the condition of the mitral valve. Also, not all

cardiac surgery units have the expertise available to carry out complex mitral valve repairs. In these cases a mitral valve replacement may be carried out. The expected and observed mortality for isolated mitral valve replacement surgery is shown in the graph below.

Figure 14: Trends in observed and expected mortality for first-time Isolated MVR surgery (UK)



Mitral replacement plus CABG trends

As with mitral valve repair plus CABG, mitral replacements are higher risk when carried out with

CABG surgery. The observed and expected mortality rates over time are shown in the graph below.

Figure 15: Trends in observed and expected mortality for first-time MVR with CABG surgery (UK)



How are hospital and surgeon mortality data communicated to the public?

In 2005 the Guardian newspaper used the Freedom of Information Act to request the mortality rates of all individual cardiac surgeons in the UK. Members of the SCTS worked with the Guardian to make this information available for publication. In response to this the SCTS published mortality rates by all hospitals and the majority of consultant surgeons in conjunction with the Care Quality Commission (CQC; organisation responsible for regulating the quality of care in English hospitals).

More recently the CQC have decided they can no longer publish these data, so the SCTS has stepped in to develop new web pages to present them to patients and the public. This has not been easy, as we are a small charity with limited

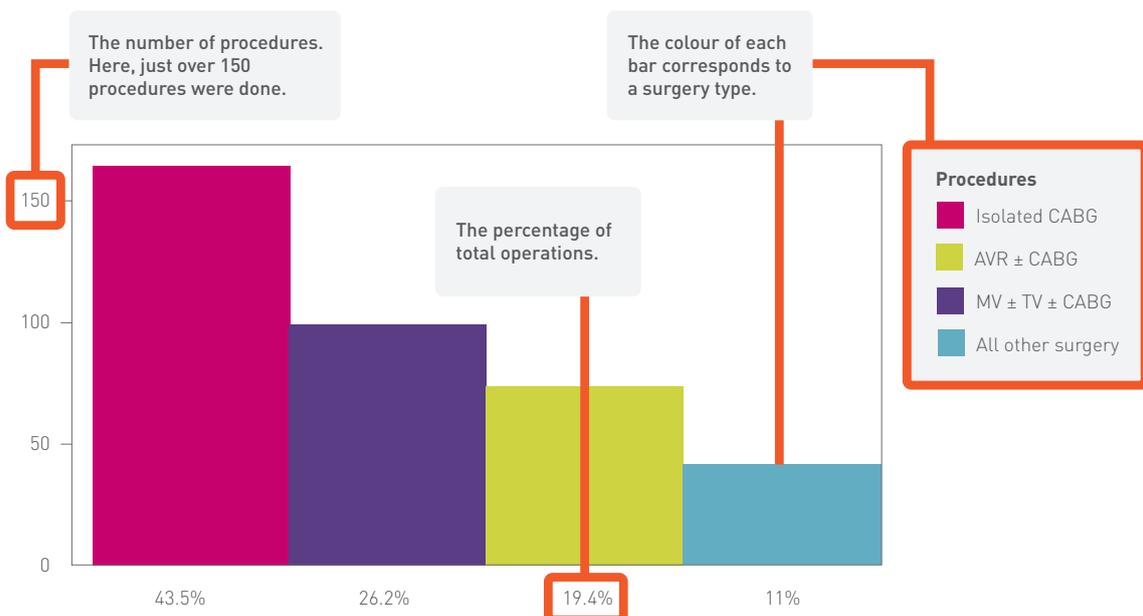
resources, but these data are now available at www.scts.org/patients. The data are presented as graphs, which show the types of surgery undertaken and mortality rates for hospitals and individual consultant surgeons. All graphs are clearly explained in order to make the analysis as accessible as possible for patients and other interested members of the public.

Case mix plots

We have represented the proportion of different operations performed in the format shown below.

These plots enable patients to see how much of the different types of surgery are performed by each hospital or surgeon. We hope that they may be useful to help patients to make choices about their care. There is some data to suggest that higher volumes of surgery may be associated with better clinical outcomes.

Example case mix plot



Mortality rates

After consultation with our patient representatives, we have chosen to display mortality data in the form of 'funnel plots', which are thoroughly explained on the SCTS website.

The operations included in these charts are adult

cardiac surgery operations on all patients over the age of 18, excluding heart transplants, insertion of artificial mechanical hearts and trauma cases (these are all subjected to separate analyses). We have also taken the decision to remove emergency and salvage operations from the analyses, as these operations

are relatively rare, and it is very difficult to make appropriate adjustments for the risk associated with these cases.

The funnel plots show how mortality rates of a particular hospital/surgeon compares to the national average, which is the standard that we have set for outcomes. The **risk adjusted mortality** rates of hospitals/surgeons are plotted on the chart against the number of procedures undertaken. Each hospital is represented by one dot on the funnel. The dot is the risk adjusted mortality.



RISK ADJUSTED MORTALITY:

A hospital or surgeon's mortality rate has been adjusted using complex methods so that, effectively, we show what the mortality rate would have been if each hospital or surgeon operated on patients with the 'average' case mix. This means that hospitals or surgeons who operate on increased numbers of high risk patients don't have an unfairly high mortality rate. More information is provided at www.scts.org/patients.



We would expect hospitals to cluster around the average. As the number of procedures increases the variation between the points should decrease, as more procedures reduces the likelihood of the mortality rate being high due to chance alone. Similarly, as the number of procedures decrease there will be an increased variation (wider spread) due to natural variability. The increased clustering around the 'average' line as procedure numbers grow is what gives the chart its funnel shape.



CONTROL LIMITS

are lines on the funnel plots that represent the expected range of values based on the average. If a hospital or surgeon's mortality rate lies below the red confidence limit, it should be understood to be an 'as expected' mortality rate. If the mortality rate falls above the red line it means that it is higher than expected.

Using only an 'average' line as the standard makes it difficult to tell whether units that are plotted away from it are within accepted limits (there will always be some variation between hospitals and surgeons due to natural variability).

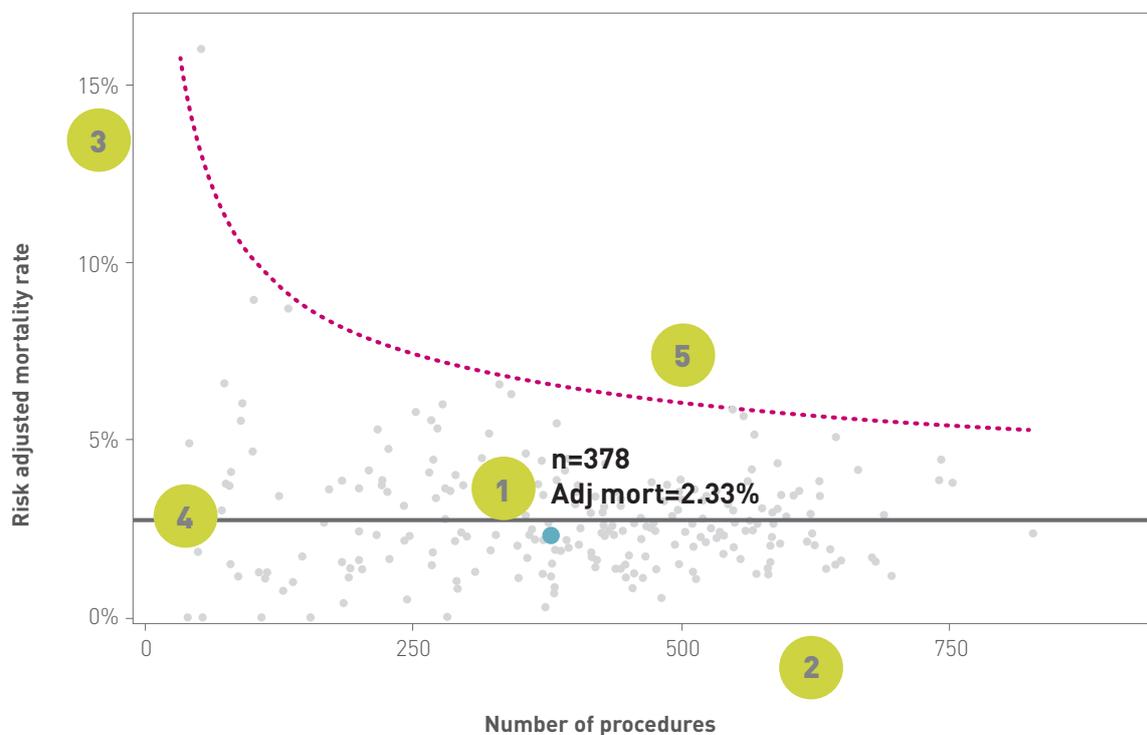
For this reason, the graphs also show **control limits**.

Mortality rates that are higher than expected do not necessarily mean that the individual hospital or surgeon is doing a 'bad job'. It may mean that there are issues about the types of patients who are coming to surgery, or the quality of the data submitted for analysis.

Also, when looking at the mortality rates for individual surgeons you should bear in mind that they work as part of a larger clinical team. This team consists of anaesthetists, junior medical staff, nurses, perfusionists, pharmacists, and physiotherapists. All of these team members may affect patient outcomes, along with a hospital's facilities.

Within the SCTS we believe it is important to measure mortality rates and flag them up to hospitals and surgeons for appropriate action when they are higher than expected.

Example consultant-level funnel plot



Understanding the graph

- 1 The blue dot highlights the hospital or surgeon whose page you are currently looking at. 'n =' gives the number of procedures that hospital/surgeon has done during the await period. 'Adj mort =' shows the risk adjusted mortality rate for that hospital or surgeon during that same period. The grey dots show all of the other hospital/surgeons included in analysis.
- 2 The horizontal line along the bottom (called the x-axis) is the total number of cases done during the analysis period.
- 3 The vertical line running up the left hand side (called the y-axis) is the mortality rate adjusted for the expected risk of the patients undergoing surgery.
- 4 This line represents the 'standard', which is the average overall mortality rate in the UK for cardiac surgery over the period of time in question.
- 5 The highest expected risk adjusted mortality rate is represented by the pink dotted line called a 'control limit'.

How do these data improve the quality of patient care?

Since we first published mortality rates by hospital in the UK, there have been marked reductions in the proportion of deaths after surgery. We have looked to see if this is because high risk patients are being denied surgery, but there is no evidence of this. Rather, as the graphs in this report show, the opposite seems to be the case; more and high risk patients are coming to surgery each year.

We cannot say for certain why the mortality rates have reduced so dramatically. But we think that it is due to hospitals and surgeons making improvements in the care that is given to patients. This is driven by the availability of data to hospitals and surgeons about their own performance, and the fact that these data are made available for examination by the public.

As with many successful teams, the British Olympic cycling team being a recent example, we believe that large improvements can come from making small adjustments to many important things.

In our case that is about making sure that patients are as fit as possible prior to surgery, and improving anaesthetic, surgical, and post-operative care on both the intensive care unit and surgical wards. We have also focused on provision of rehabilitation services. Because the overall improvements in cardiac surgical care have been so great, we are very pleased to hear the recent announcement by NHS England that surgical outcomes will be published more widely in other specialties from summer 2013 as part of 'Everyone Counts: Offer 2'.



PART TWO: HOW ELSE DO SURGEONS MAKE SURE THEY ARE DOING A GOOD JOB?

Introduction

Whether or not a patient's experience of having cardiac surgery is a positive one relies on more than just the actual operation and the clinical outcome. For this reason the SCTS have explored other ways that a patient's experience can be measured so that, along with data about operations, a more complete picture of care can be assessed, and improvements made.

The SCTS think that it is also important for patients to know that cardiac surgeons keep up to date with their clinical knowledge through schemes like 'SCTS University', which is described below. It is also reassuring to know that the SCTS have mechanisms for alerting individuals and hospitals when data from the National Adult Cardiac Surgery Audit show that clinical outcomes are not as good as we would expect.

As well as the SCTS governance procedures, in 2013 a General Medical Council scheme was introduced to ensure that all doctors are fit to practice. This is explained in more detail in the 'Revalidation: how do doctors make sure they are 'fit to practice'?' section below.

Measurement of patient experience

The three pillars of patient care are now generally accepted to be; clinical outcomes, patient safety and patient experience. For patients and their doctors, this means the results of diagnosis and treatment, the safety of care given, and the quality of the patient-doctor relationship. In the past the first and second aspects have been given more attention by the medical profession than the third. This has been due in part to the idea amongst

health professionals and managers that patient experience is difficult to measure well, and is not as important as clinical outcomes.

Some recent failures of **clinical governance** in NHS care have highlighted that poor experience for patients, as well as being very important

its own right, can be the beacon signalling significant underlying problems in the clinical care. This has now been recognised by the Government in several recent policies and pledges.

If levels of patient satisfaction are low you know there is a problem, but if you measure patient experience systematically you can see *why* satisfaction is low, and act efficiently to put it right. We have explored these issues in more detail in our previous publication '*Maintaining patient's trust*', which is available for download from www.scts.org.

We believe that, to a large extent, patients trust their doctors and nurses to be professional and to conduct the technical aspects of hospital care to a high standard. In cardiac surgery patients have no recollection of the key element of care. This is because the operation itself takes place when patients are deeply asleep under a general anaesthetic. However, other aspects of care are very important, particularly the clinical consultation where the decision to have the operation is taken, and the follow up care after discharge from hospital.



CLINICAL GOVERNANCE

is the system through which healthcare organisations monitor and improve the quality of care and services.



THORACIC surgery treats diseases of the chest and lungs such as tumours and infections.



CARDIOLOGISTS are doctors with special training in finding, preventing, and treating heart and blood vessel diseases. They treat patients using medicines and minimally invasive procedures. Where these treatments are not suitable, a cardiologist may refer a patient to a cardiac surgeon.

Because of this we have embarked upon a programme to measure patients' experience of the care given by surgeons in more detail. We are doing this in partnership with Picker Institute Europe (www.pickereurope.org).

So far we have undertaken a pilot project at one hospital; the University Hospital of South Manchester. Here

we have identified all patients coming through the outpatient clinics that have been seen by each consultant. We have included surgeons (cardiac and **thoracic**) and **cardiologists** in the study. We have sent out a specially developed questionnaire to these patients to ask them what they thought about the consultation, with an explanatory letter about the patient experience measurement pilot study. Patients are asked to complete the questionnaire and return it by pre-paid post.

These data are fed back to the individual consultants, to enable them to reflect on their practice and learn lessons where necessary. The data will also be used locally by doctors for the annual evaluation of their work (known as an appraisal) by their manager, and will feed into their **professional revalidation**.

Further details about the pilot are given on the following pages. We expect that these methods will be used more widely by the profession in the future, and would hope that this will contribute further to ensuring that all patients get high quality care.



PROFESSIONAL REVALIDATION

is the process whereby all doctors are required to regularly prove to the General Medical Council that they are currently up to date and fully fit to practise. See the chapter entitled 'Revalidation' (page 47).



Developing patient feedback on individual consultants: the Picker method

Picker Institute Europe

Picker Institute Europe is developing a patient feedback questionnaire capable of gathering information that is relevant in all specialties, and reliable enough for use in continuous quality improvement and assurance through professional revalidation. The standards it describes flow from 15 years of development, informed by professional values and research into patients' expectations.

In cardiac surgery Picker has partnered with individual SCTS members at the University Hospital of South Manchester to assess the performance of consultants on important aspects of their patient care.

The objectives of the pilot study summarised here were to:

- Develop a way of collecting patient feedback on individual consultants that is reliable and fit for purpose.
- Trial the questionnaire and the feedback collection process to understand how it worked, and make improvements if necessary.
- Conduct statistical analysis to understand how the feedback may be interpreted and used; what kinds of factors influence patients' ratings, and how the data may be used in making judgements about the performance of consultations?
- Use the feedback to identify strong and poor performance and drive quality improvement.

How were the questions developed?

If questionnaires are to provide useful feedback from patients, they must generate information that can be used to assess the skills and qualities of doctors that are important to patients, or which have been demonstrated to have an impact on the quality of patient care. It is vital that any questionnaire reflects the professional standards expected of doctors. Such standards are set out in Good Medical Practice, which is guidance published by the General Medical Council (GMC). This guidance is primarily for doctors, but also lets the public know what they can expect from doctors. The questionnaire has been designed to gather evidence on the performance of an individual doctor that can only be obtained from patients.

To find out the best questions to ask, the following work was completed:

- Interviews with patients to understand what makes a good consultation.
- A review of Good Medical Practice to identify the specific aspects of care that patients are best placed to give feedback about.
- A review of the reasons why patients complain about doctors. By asking questions that relate to these aspects of care regularly, we hope to identify underperformance as soon as possible.
- A review of best practice in the ways communication skills are taught. By asking questions that reinforce good practice, we can help to show doctors why it is so important that their communication skills are effective.

Good Medical Practice

Good Medical Practice describes the essential duties of a doctor registered with the General Medical Council (GMC).

The GMC tells doctors that they must:

- Make the care of their patients their first concern.
- Treat patients as individuals.
- Respect their dignity by treating patients politely and considerately.
- Respect each patient's right to confidentiality.
- Work in partnership with patients.
- Listen to patients and respond to their concerns and preferences.
- Give patients the information they want or need in a way they can understand.
- Respect a patient's right to reach decisions with their doctors about their treatment and care.
- Support patients in caring for themselves to improve and maintain their health.

Questions designed to examine whether doctors are fulfilling these obligations are included in the questionnaire.

Who gave feedback?

Feedback was gathered from 658 patients of 13 cardiologists and 10 cardio-thoracic surgeons working at the University Hospital of South Manchester. Feedback questionnaires were sent to all patients aged 16 and over who attended outpatient appointments with consultants between August 2012 and January 2013.

A response rate of 54% was achieved (56% for cardiology consultants' patients and 49% for cardio-thoracic surgeons' patients). Judging from similar studies in the past, this is about the level of feedback to be expected.

How was feedback collected?

Patients were sent the questionnaire through the post and asked to complete and return it using a pre-paid envelope. A postal method was chosen because it meant that the consultants themselves did not select patients to give the questionnaires to. The process was invisible to the consultants and was managed without taking up valuable clinic time. Patients could answer at their leisure without feeling inhibited or pressured.

Did it work?

Statistical analysis showed that the feedback does provide a stable way of measuring consultants' attitudes and communication skills. Testing indicated that although ideally over 50 responses per consultant are required, 30 or more responses still provide reasonable accuracy.

Because many of the questions are framed around the obligations described in Good Medical Practice, we would expect patients to give their consultants a high score on the questionnaire. In fact, a high score should be regarded as 'normal' for obligatory standards. Whilst feedback was generally very positive, it appears that there is some poor performance. However, other issues such as the patient's opinion of their health status and the success of surgery may affect their view of the doctor's consultation skills. Ensuring a big enough sample size should iron out any potentially biased views so that judgements can be made based on the results.

What did patients say?

An example of an interim feedback report from the pilot study for one SCTS member - Professor Ben Bridgewater, Consultant Cardiac Surgeon at University Hospital of South Manchester – is shown below.

Consultants who participated receive their own individual feedback report to reflect on and discuss with their manager. University Hospitals of South Manchester NHS Foundation Trust has committed to publishing the feedback on its website so that patients have access to more information, and to reinforce the values of the



'South Manchester Way' - a set of principles that define how the Trust operates, with patient care at its heart. This information can be found at www.uhsm.nhs.uk.

The feedback given below suggests that Professor Bridgewater is performing at a level which is comparable with other doctors in his hospital. His overall Picker score was 9.5 /10, which suggests that there is no need for improvement. More detailed examination, however, shows that his score "for giving emotional support" was lower than average. Whilst this difference was not substantial, this reflects an aspect of care where he may want to change the nature of his consultation. For example, he could improve by asking questions of his patients such as, "how did that make you feel?" to allow more useful and supportive conversations to take place.

The detailed 'additional commentary' made by his patients is also useful. Many of these comments

indicate that patients are very happy with his approach, but some suggest a need for longer consultation times or that, on occasion, he could be more open and friendly in his consultations.

Summary

This pilot study has shown that it is possible to produce a questionnaire to gain feedback on doctors' consultation skills in a way that will:

- Generate evidence to reassure patients that they are getting a good standard of care.
- Help the hospital and individual doctors continually improve the care given to their patients.
- Provide evidence for doctors that will feed into professional revalidation, the GMC process by which doctors now have to demonstrate that they have the knowledge, skills and attitudes needed to maintain their license to practise.

We believe that the regular feedback of patient experience should become a routine part of healthcare delivery and measurement, and that the methodology that has been described will become widespread throughout medicine. In particular we hope that in the future the SCTS will make these data available to the patients of all their consultants.

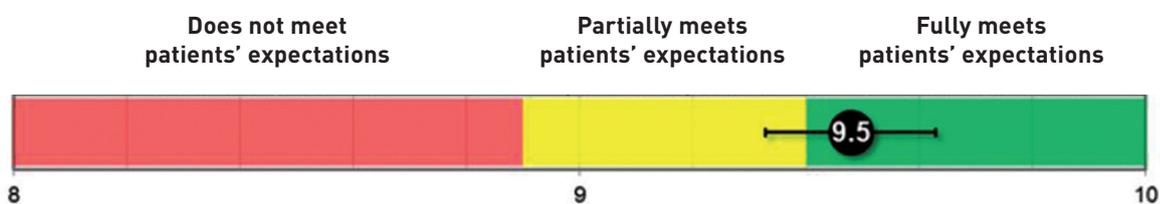
We believe that this will improve quality and prevent failures of care. We are confident that this methodology will support patient choice and help to gain and retain public faith in doctors and the NHS against the backdrop of failures that have been reported recently in the media.

Current advice from the GMC is that feedback from patients for revalidation should be a “one off” event drawing on the experience of thirty patients every five years. We do not believe that this tiny sample will give the best opportunities for continuous quality improvement, or that it will be sufficient to identify deficiencies when they are present.

Excerpts from an individual Consultant’s communication skills report are given below. These reports are issued to consultants so that they can act on feedback to improve their communication skills if required.



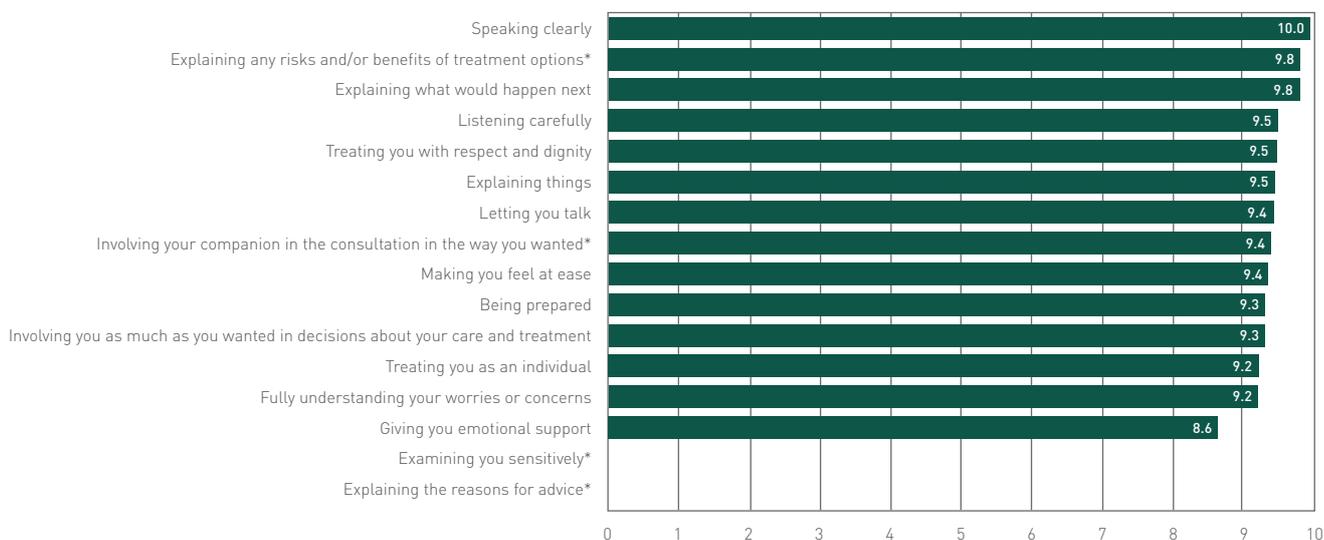
Chart 1: Your Picker Consultation Score



Confidence intervals

The confidence interval shows the range within which your (overall) score would fall in 95 out of 100 equivalent samples of patients. This shows how reliably your level of communication skill has been estimated.

Chart 2: Your Communication Skills in Detail



*Lower sample size (question only applied to some patients).

Chart 3: How you compare to others

Question	Your score	Average score	Significant difference
Speaking clearly	10	9.6	None
Explaining any risks and/or benefits of treatment options*	9.8	9.5	None
Explaining what would happen next	9.8	9.4	None
Listening carefully	9.5	9.4	None
Treating you with respect and dignity	9.5	9.6	None
Explaining things	9.5	9.5	None
Letting you talk	9.4	9.3	None
Involving your companion in the consultation in the way you wanted*	9.4	9.4	None
Making you feel at ease	9.4	9.4	None
Being prepared	9.3	9.3	None
Involving you as much as you wanted in decisions about your care and treatment	9.3	9.1	None
Treating you as an individual	9.2	9.3	None
Fully understanding your worries and concerns	9.2	9.2	None
Giving you emotional support	8.6	9	None
Examining you sensitively*	-	9.6	-
Explaining the reasons for advice*	-	9.5	-

* Lower sample size (questions only apply to some patients).

Patient Comments

Comments are only edited if any patient-identifiable information needs to be anonymised. Where this is the case, the edit will be shown between square brackets [...]. In all other cases, comments are reported verbatim.

Q36: Was there anything that your consultant did particularly well in your most recent appointment?

Mr. Bridgewater has my heartfelt thanks for saving my life and for his care towards me.

He advised me to visit an NHS Dentist which I have managed to get a slot on [DATE]

Made me feel at ease.

Mr. Bridgewater came to the consultation very well prepared. He explained what was the matter and possible treatments concisely and clearly.

With respect, treat one like an individual.

Quite happy to be in Mr. Bridgewater's care, he has outlined the possibilities, at my age, reassured me as well as can be.

Pleased to see Mr. Bridgewater who gave me advice on my condition and possible future surgery.

Came straight to the point. Transferred back to the medical cardiology on the medical regime prescribed while in hospital. Said only problems would be referred back.

Mr. Bridgewater immediately made me feel at ease and reassured about my future treatment. He has a very friendly and yet professional manner.

Told me that I didn't think operation necessary but [HOSPITAL NAME] would keep a check on me.

Very brief and to the point.

Inspired confidence.

Q37: Was there anything that your consultant could have improved on?

No - excellent care.

He had not been supplied with info. about previous tests and therefore the consultation was a waste of time and I don't know what will happen for another month.

More time to ask questions but felt time was limited due to the number of patients to be seen.

He could have been warmer and smiled more. He was a bit stiff and cold, although efficient.

REVALIDATION

How do doctors make sure they are 'fit to practise'?

In December 2012 the General Medical Council introduced professional revalidation for doctors. This is the process by which all doctors will have to prove that they are suitable to continue to practise by presenting evidence to an appointed senior member of staff in their hospital/practice on a five-yearly basis. Before this was introduced, all that had been necessary to remain on the medical register was an absence of concerns about that individual, rather than any positive demonstration of competence. This major change has come about in response to the events in paediatric cardiac surgery in Bristol and a series of high profile cases involving doctors who had unsatisfactory practice that had gone undetected (including the serial killer, Dr Harold Shipman). In the SCTS we embrace the introduction of revalidation for all doctors.

For cardiac surgeons, we feel that we are already well on the way to developing a robust system of monitoring the quality of care given to patients. This involves the measurement of clinical outcomes, the assessment of knowledge, and we are also working on developing better tools for the measurement of patient experience data. It will also be necessary for surgeons to provide information on what their colleagues think about them from multi-source feedback, which may help to improve team working and pick up behavioural or other problems. We have explored the use of multisource feedback in more detail in '*Maintaining Patients Trust*', which can be downloaded from www.scts.org.

Outcomes data and revalidation

For the purposes of developing information on clinical outcomes data for revalidation we have analysed mortality data for all hospitals and surgeons in the NHS. We have looked for mortality rates that are higher than expected, after making adjustments for different case mix and patient profiles, and have fed that data back to the hospitals and surgeons. The vast majority of hospitals and surgeons have mortality rates that are 'as expected', as we have published on our website, and the overall mortality rates are very low. A small number of hospitals and surgeons have mortality rates that are higher than expected, and whilst this may be due to chance alone, we have fed this data back to the surgeons and their hospitals to allow further investigation and actions to take place. When surgeons undergo revalidation they will use these data to demonstrate that their results of surgery are good. When the mortality rates are higher than expected we anticipate that there will be a discussion exploring these issues further. A complete understanding of any problems and a satisfactory plan of action must be put in place to ensure that patients are receiving high quality care, and to allow for that individual to continue practicing through revalidation.



To support our members we have developed a project that we call the SCTS eLab. This is a series of up to date, internet based 'windows' into National Adult Cardiac Surgery Audit data to allow people to better understand cardiac surgery in the UK.

On one level this allows free access to national data about the number of operations, the mortality associated with those operations and the incidence of the various patient risk factors. Data are updated regularly and the graphs can be filtered to show particular hospitals and/or procedures. This part of the elab is called the 'Blue Book online' and is available for free to everyone at www.bluebook.scts.org.

The second section of the SCTS eLab is a series of tools to help hospitals and surgeons to improve the quality of their care by monitoring their activity and outcomes in detail. As these data are updated on a quarterly basis, before surgeons have had the opportunity to correct any data errors, we have restricted the access to them for the time being. Instead, mortality data for hospitals and surgeons that has been thoroughly checked for accuracy is available in the public domain at www.scts.org/patients.

We hope that both the Blue Book online and the data available on the SCTS website will help patients to choose where to go for surgery, and

show the public that the quality of cardiac care in the UK is high. It should also reassure the public that the SCTS actively and effectively monitors the outcomes of cardiac surgery for all hospitals and surgeons to ensure that no one has results that are unacceptable for patients.

SCTS University

Ben Bridgewater,
consultant cardiac
surgeon at the

University Hospital of South Manchester, National Adult Cardiac Surgery Audit Lead.

Ian Wilson, consultant cardiac surgeon, and SCTS meeting secretary.



All cardiac surgeons must successfully pass through medical school and then, after spending several years rotating through different sorts of medicine, undergo a competitive process to enter specific training in cardiac surgery. This 'higher surgical training' in cardiac surgery programmes is extensive and takes around six years.

A good cardiac surgeon must have technical expertise coupled with up to date knowledge and the ability to apply it. It is important to acquire this knowledge during training as a young surgeon, and it is equally vital that this know-how is refreshed and updated throughout a surgeon's career. We call this 'lifelong learning'.

Professional Societies, like the SCTS, have long taken ongoing education of surgeons seriously, but the advent of professional revalidation makes these initiatives even more important, and will drive all surgeons to engage in the process.

Since 2010 the SCTS has organised a 'University' for its members, to help educate them and keep them up to date. The SCTS University has to date been largely a single day as part of our annual meeting, but more recently we have been looking to use modern internet-based approaches to make all the education available more widely. This means that even if a surgeon is unable to attend

the meeting they can still benefit from its content, and they can use the internet to go back and view the educational material as often as they would like to reinforce messages.

This SCTS University Library (www.scts.org/university) affords the opportunity for the most contemporary educational material to be made available to SCTS members, and Allied Health Professionals who work within the clinical area of cardiothoracic surgery. This educational resource can facilitate continued professional development within the field.



Since 2010 more than 1,800 SCTS University attendees have participated in the SCTS University educational days, and since the launch of the SCTS Library in January 2013, more than 4,870 visitors to the library have been recorded.

The next phase of this initiative is the development of an on-line Personalised Evaluation of Knowledge (PEAK) programme, to underpin the educational material delivered in the SCTS University educational programme and Library.

This PEAK programme will be a series of interactive web-based scenarios, developed to reinforce the educational material delivered

to SCTS University delegates. This will enable SCTS members to demonstrate contemporary understanding of the most up-to-date national and international educational material available to them.

The SCTS envisage all members developing their own portfolio of PEAK reinforced continuing professional development to demonstrate good levels of knowledge within their own areas of clinical practice.

AFTER MID STAFFS

Why the dedicated professionalism of the UK cardiac surgeons offers the best way of ensuring a consistently high standard of medical practice across all specialities in future

Sir Donald Irvine, Former President of the GMC, Chairman, Picker Institute Europe



When we become ill, if our problem requires surgery – especially cardiac surgery – we want to be seen

promptly by a surgeon who has a reputation for providing first class technical care, who we know achieves consistently good results, and who can relate to us in a way that forges our trust. As well as excellent surgery, we want the overall experience of care, from cardiologists, nurses, receptionists, radiographers and the many others who may become involved in looking after us, to be exemplary from beginning to end.

Throughout the history of modern medicine there have always been patients who have had such experience, but others have not. So, a big question today for the medical and nursing professions, and the managers of the NHS, is whether a state of consistent ‘goodness’ can be achieved across all specialties and settings for all patients, all of the time. With disasters like Mid-Staffordshire

Hospital, and a long history of other reports detailing poor care from across the NHS, the public are right to be concerned for patients needing medical and nursing care.

As has been amply demonstrated in this book, the recent story of adult UK cardiac surgery shows that surgery of consistently high quality can be achieved and sustained over time across a whole specialty. This is a very significant achievement, with implications extending across the NHS.

The critical factor is that, both as individuals and through the SCTS, the cardiac surgeons decided that they must take prime responsibility for setting and ensuring the standards of clinical practice and care in their specialty. They see this responsibility as the core element of their ethical duty to the public and to their patients, the right thing to do, the very essence of their professionalism. After all, the consultant members of SCTS are the national experts in cardiac surgery; if not they, to whom could patients, employers, and regulators turn?

The acceptance of this responsibility to the public by a membership organisation caused some internal stresses and strains because, for some members, it was a new and very significant change. However, clear-sighted leadership has prevailed.

The foundation method was the establishment of the National Adult Cardiac Surgery Audit, which describes the patient mortality rates of every NHS cardiac surgeon and surgical team doing every individual operation on every patient in the NHS. The surgeons have found that surgeon-specific degree of data

granularity to be essential. They have also set the bar high, to reflect the optimal standard of practice achievable under normal operational circumstances. They have embraced complete transparency through the publication of their results on the SCTS website. At the same time, the SCTS has developed a sophisticated method for continuously monitoring the results so that unexpected departures from the prevailing standard can be quickly spotted, investigated and attended to before patients or surgeons themselves are exposed to further risk. They have managed to do this whilst still making it possible for surgeons to carry out risky operations on patients who have chosen surgery because they know their patients would have no chance of life without it. For patients and surgeons this element of professional discretion is vital, and must be protected.

And what do the results tell us? First, the standard of adult cardiac surgery is uniformly high. Of course there is some variation as one would expect in a difficult field demanding great skill and professional judgment, but it is small. For the British public these results are welcome news. They mean that any NHS patient undergoing cardiac surgery can be assured of the competence of the surgeon – the SCTS through its system of monitoring and the continuous professional development of surgeons has seen to that. The second point is that the overall results of UK cardiac surgery put the UK at the top of the international league table. So, patients having cardiac surgery in the NHS know they are in the

best place. Third, SCTS has shown that, over time, the results of UK surgery are getting steadily better and even safer mainly because frequent feedback has resulted in the fine-tuning of surgical performance. This is incremental quality improvement as it should be. And lastly, because the improvements in surgery have reduced the time spent in hospital, the money saved appears to have more than covered the costs of operating the monitoring system. The overall result is fantastic. Everybody wins – patients, health professionals, NHS and taxpayers.

Looking ahead, the SCTS has also described what it is now doing to make sure that patients get great care as well as excellent surgery. In addition to technical surgical performance, they are now thinking in terms of the totality of the patients' experience of care from the moment patients enter their service. This means the nursing care, the outpatient experience, and all the ways in which the patient's journey can be made as good as possible. Hence, for example, the involvement of some SCTS members with the Picker Institute's work to develop tools to provide evidence of the patient's experience of individual surgeons, particularly of their attitudes and their communication and interpersonal skills. These instruments should therefore tell us how well a named surgeon is meeting the generic standards set out in the GMC's ethical code – Good Medical Practice - particularly those that focus on the importance of the doctor-patient relationship.



The SCTS intends that the patient's chosen surgeon will be there to take a personal interest in the progress of their case. Patients will know that they can turn to their consultant, someone whom they know they can trust, if they or their relatives have wider concerns about the quality of nursing and general care.

This new, deeply ethical professionalism in the practice of cardiac surgery, rooted in professional conscience, is the much-needed alternative to the prevailing culture of target-driven managerialism rife in too many parts of the NHS. Robert Francis, in his letter introducing his report to the Secretary of State for Health, described in the NHS an ..."insidious, negative culture involving a tolerance of poor standards and a disengagement from managerial and leadership responsibilities". Significantly, he added in the report that..."if all professional staff complied at all times with the ethics of their professions there would have been

no need for the plethora of organisations with commissioning and performance management responsibilities"³.

So the question now is how to extend the approach to professionalism and quality taken by the cardiac surgeons to all other disciplines of the UK medical profession.

Implications for Medicine and the NHS

In cardiac surgery, we are fortunate that a working model of exemplary care where many of the things the government and NHS want to do, and the public are hoping for, are already there, tried and tested, and up and running. Some examples of the wider implications are given below.

3. Report of Mid Staffordshire NHS Foundation Trust Public Inquiry. Volume1. Analysis of evidence and lessons learned [part1]. London; Stationary Office, 2013

1. Professionalism

I put this first, deliberately, because it is about culture and values which, for better or worse, ultimately inform all performance. We have seen that the UK cardiac surgeons have embraced a professional ethos and mindset which puts the needs of the patient before all else. They therefore see personal and collective responsibility for performance as basic, regard the observance of optimal standards of performance, ethics and service as a matter of professional obligation and conscience, and are committed to accountability to patients, colleagues and public through complete transparency about the results of the effectiveness and experience of all aspects of care.

This holistic view of professionalism linked inextricably to quality is still uncommon in the health professions today, yet is exactly what patients want. All other medical specialties, general practice and the nursing profession should now adopt it.

2. Data

NHS England⁴ has recently published an important statement of intent about quality, choice and the centrality of data and transparency in the future NHS. In particular, mortality rates for several surgical specialties and interventional cardiology are to be analysed and published by individual clinician, a direct consequence of experience in cardiac surgery. Feedback on patient experience is to assume a high order of priority.

3. Royal Colleges and Specialist Societies

Several specialist societies are looking anew at their responsibility for clinical standards and the measurement of performance against those standards. The British Cardiovascular Society, which is the expert professional body for UK cardiology, is a good example of a Society which is now travelling the same road. They are publishing a statement – Professionalism and Transparency: What Makes a Good Cardiologist? – jointly with sister societies in Australia, New Zealand, and the US – on clinical and professional standards.

The Royal Colleges and Faculties are primarily about professional standards, which is why they qualify as registered charities. They are all membership organisations. Now, all face the same challenge managed so successfully by the cardiac surgeons. Together, they have a wonderful opportunity to transform the face of British medicine. They do need to recognise that institutional inertia on this fundamental matter is no longer credible or acceptable.

4. <http://www.commissioningboard.nhs.uk/everyonecounts/>

4. General Medical Council

The GMC controls the registration, licensing and specialist certification of UK doctors. GMC registration and licensure are meant to give patients and employers a guarantee of the qualities of a doctor in whom they can place their trust. The SCTS initiative impacts on these processes in two main ways.

First, the clinical standards set for cardiac surgeons by the SCTS complement the generic professional standards set by the GMC in Good Medical Practice, the latest edition of which has just been published⁵.

Second, on revalidation, SCTS intends that the supporting evidence cardiac surgeons submit for their annual appraisal will be as objective as possible, containing outcome data, evidence that their knowledge is up to the mark, evidence of patients' experience with their particular surgeon, and confirmation that their ethical conduct accords with the generic standards in Good Medical Practice. It is anticipated that evidence of competence and performance will be published, so that anyone should be able to see the basis on which appraisers and Responsible Officers are making revalidation decisions. All this will bring much needed objectivity and transparency to the process of revalidation. The SCTS is thus setting a standard of evidence for revalidation that, I believe, the GMC should insist become the norm across British medicine as soon as possible. Then revalidation has an excellent chance of becoming

the robust instrument for assuring the public of the quality of British doctoring that its authors originally intended it to be.

5. NHS Hospital Governance

Last but not least, there is the impact on hospital clinical governance. The SCTS clinical outcomes initiative, to be reinforced by revalidation, a CQC fully focused on quality and the plans for NHS Commissioning, should put much needed pressure on NHS trust boards to manage quality more effectively in the future across all clinical services. It is interesting that hospitals in Western Europe and North America which achieve outstanding results have boards which share the following characteristics; they take full responsibility for the performance and reputation of their institution; they put the needs of patients absolutely first; they demand excellence; they support staff who want to achieve excellence; they are intolerant of poor or mediocre performance; and they have good comparative data giving an up to date picture of how well they are doing. This basically is how the SCTS has approached its responsibilities. NHS management has much to learn from their example.

And finally

At a time when there is so much gloomy news about the NHS, the UK cardiac surgeons have shown us that there is a clear way ahead that is effective, affordable and just what patients want. That is reason enough to be thankful for their initiative, leadership and good example.

5. General Medical Council. Good Medical Practice, 5th edition. London; GMC, 2013

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