

National Cardiac Audit Programme (NCAP)

For patients, carers
and the public

2024 Annual Report
(2020/23 and 2022/23 data)



Contents

About this report	3
How to use this report	3
Why do we audit hospital services?	4
What's new at NICOR?	5
Foreword from Sarah Murray, Chair of NICOR Community Representative Group (CRG)	6
An introduction to your heart.....	9
Heart attack (myocardial infarction).....	11
Percutaneous coronary intervention (PCI).....	17
Adult cardiac surgery	19
Heart failure	22
Cardiac arrhythmia (cardiac rhythm management).....	25
Congenital heart disease	28
Transcatheter aortic valve implantation (TAVI) Registry	31
Transcatheter Mitral and Tricuspid Valve (TMTV) Registry	34
Thanks and acknowledgements.....	38



About this report

This patient report is designed as a companion to the 2024 National Cardiac Audit Programme (NCAP) report produced by the National Institute for Cardiovascular Outcomes Research (NICOR).

NICOR is commissioned by NHS England and GIG Cymru/NHS Wales to complete national cardiac audits to inform healthcare providers and research organisations.

The primary aim of the NCAP is to support and drive quality improvement within hospitals. For this reason, our annual report is aimed at those with some level of clinical knowledge. This patient report is intended to be accessible to all patients, family members, carers and members of the public.

You can download the 2024 NCAP annual report and other key documents via the NICOR website covering data from 1 April 2022 to 31 March 2023. For some measures, 3 years' data are considered (2020/21 – 2022/23).



How to use this report

The report is divided into 8 areas of clinical expertise (called “domains”) audited by NCAP.

We have summarised key findings from the full 2024 annual report, provided useful background information and highlighted what you can do to help improve cardiac health for you, your family, and carers.

We have also included answers to some frequently asked questions and links to further information or support. If you would like to read specific parts of the annual report, there are links to all 8 domain summaries.

Why do we **audit hospital services**?

In the UK:



7.6 million people are living with heart and circulatory diseases



every 3 minutes someone dies from a heart or circulatory disease



13 babies a day are diagnosed with a congenital heart defect



every 5 minutes someone is admitted to hospital due to a stroke*.

Our primary aim is to help assure the quality of care provided to these patients and support commissioners and clinical teams improve programmes to deliver better patient experience and outcomes.

The audit work we carry out at NICOR helps the NHS to define the standards used for evidence-based cardiac healthcare and to monitor whether those standards are being met. Where standards are not met, we recommend actions to help hospitals and medical professionals improve their performance. The report also enables large healthcare organisations and commissioners to understand the national picture.

The national audit data are also useful for public health research, the findings of which may then become important for the audit programme. Many discoveries which have improved millions of lives worldwide have been made by analysing patient data, or the patient data have highlighted important trends for medical researchers. For instance, the links between smoking and obesity and heart disease (among other important factors) were discovered in a study of 35,000 British doctors which ran for 50 years. Today in the UK, 80% of the cardiovascular disease burden can be attributed to modifiable risk factors, such as diet, smoking or high blood pressure.

*Figures from [British Heart Foundation](#)

What's new at NICOR?

NICOR is evolving. We are developing new tools and systems and introducing new registries into the NCAP (now 11 in total, previously 6).

These are the biggest advances seen at NICOR for several years. With a mix of technology enhancements, our passion and drive, collectively our overall aim is to support the NHS to improve patient outcomes and we are always looking at, 'how can we improve the way we collect and interpret cardiovascular health data?' With our recent improvements and with 'real-time' interactive reports, we aim to support clinicians, hospitals and healthcare improvement bodies to deliver better health outcomes for patients, both in terms of their chances of survival and the experience they have while being cared for.

The interactive reports are available on the new and improved [NICOR website](#), which launched in March 2024. Everyone can access the latest data. There will be annual reports but we will regularly update data throughout the year to help 'paint the current picture', monitor and improve the quality of care of cardiovascular services across the UK. This will also identify where improvements need to be made to help inform change and improve patient outcomes.

For the 2024 patient, carer and public report, the data are from 2022/23. We explore post COVID-19 pandemic trends, the challenges including delays and inequalities around accessing treatment, as well as the opportunities for cardiovascular services.





Foreword from **Sarah Murray,** **Chair of NICOR Community** **Representative Group (CRG)**

This year's report reflects the changes at NICOR over the past year; a larger cohort of registries (reflecting different specialisms within the cardiac services) is now included in the audit programme and that, together with the improvements in technology (which in turn improves the representation of the data with interactive reports), is most welcome and overdue.

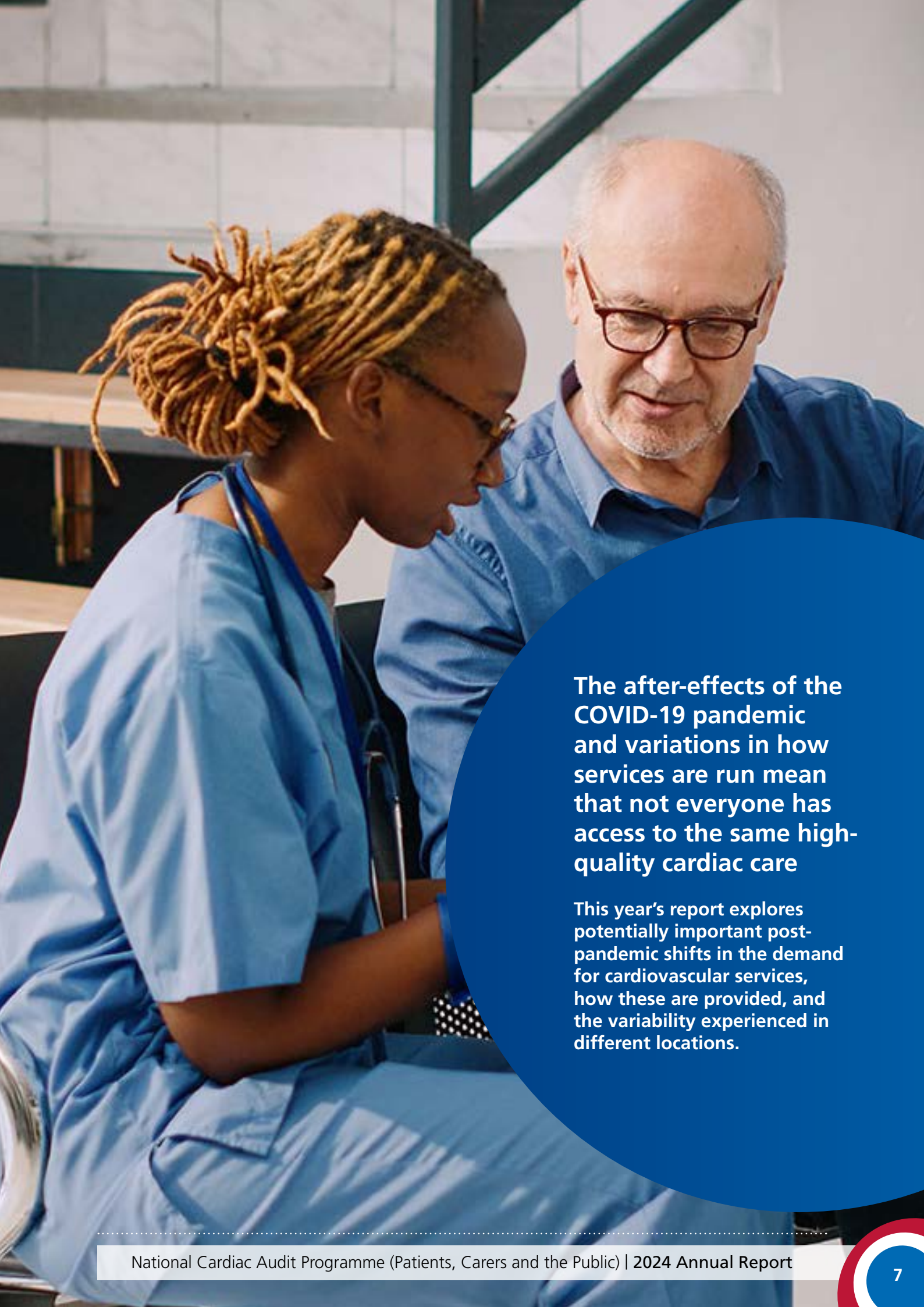
The clinical reporting of data will be updated regularly whereas before it was annual, and this is to be applauded as a huge step forward. It is hoped with timely monitoring and improvement of the quality of care, this will lead to better patient outcomes as a result. To ensure the outputs are meaningful, this requires hospitals to send in their records frequently and completely.

The report covers data from 2022/23 and whilst there is good news following the COVID-19 pandemic that some services are back up to capacity, many are not. It is not clear whether there is a lower requirement for some services but there are worrying trends in the lack of consistent provision of services, including operating capacity, variable pharmaceutical pre- and post-operative treatments on offer across the country and life-threatening delays are evident. The devil is in the detail.

Delays often mean that patients are sicker before they receive treatment and good outcomes are jeopardised. Self-presentation at A&E with signs of a heart attack because patients do not want to rely on calling an ambulance may result in patients putting themselves at unnecessary risk.

This scenario must be corrected urgently. Patients with a range of conditions are waiting longer to be seen and treated and there are serious concerns about their deteriorating health on the waiting list or whether this puts at risk their future well-being or survival.

The new system of reporting with regular updates in the analyses should empower us to be better informed about the state of our cardiac care services and empower us to constructively challenge their custodians, holding them to account, and pressing them to do better.



The after-effects of the COVID-19 pandemic and variations in how services are run mean that not everyone has access to the same high-quality cardiac care

This year's report explores potentially important post-pandemic shifts in the demand for cardiovascular services, how these are provided, and the variability experienced in different locations.

Four years on from the [World Health Organisation \(WHO\)](#) declaring a pandemic of coronavirus disease (COVID-19) and the UK Government instituting a first 'lockdown', the impacts on healthcare continue to be seen with challenges in restoring service capacity and delays to treatment. Other challenges have added to the effects of the pandemic, including difficulties in staff retention and recruitment, the onset of industrial action and the cost-of-living crisis. These all compound the burden on an already pressured NHS facing increasing demands from an expanding and ageing population.

Levels of activity for most cardiovascular sub-specialties have continued to improve and are higher than the levels seen in 2020/21 during the COVID-19 pandemic. Some areas remain below pre-COVID levels, most notably adult and paediatric cardiac surgery.

In what remains a turbulent time for the NHS, areas of excellent practice are seen, with improved quality of care across many areas of clinical practice. This is not universal however, and the report sheds light on the variability experienced by patients in different parts of the country and individual hospitals. This remains the case especially for patients suffering a heart attack and those in need of either urgent or elective cardiac bypass surgery. Additional variances are also experienced depending on a patient's age and sex.

As implementation of [NHS England's Urgent and Emergency Strategy](#) takes hold, it is hoped that unwarranted variation in care is reduced. [Integrated Care Boards \(ICBs\)](#) and [Cardiac Networks \(CNs\)](#) have a crucial role to play in this, leading a localised approach to implementing improvements.



We have spoken to some patients and carers to hear their recent experiences, and these have been published on our [website](#).





An introduction to your heart

Before we explore the different areas of cardiac healthcare or 'specialties' let's take a brief look at how the heart works, which will help us understand how things can sometimes go wrong.

Your heart is amazing. It is the central point of your circulatory system.

The heart is a muscle made of 4 chambers which pumps blood and oxygen constantly, supplying your whole body, responding to extra demand placed on it, such as vigorous exercise, when needed. The rhythm of your heartbeat is regulated by electrical signals from the heart's 'natural pacemaker', the sinus node in the right atrium, which make the heart muscle contract and relax at a steady pace to pump the blood.

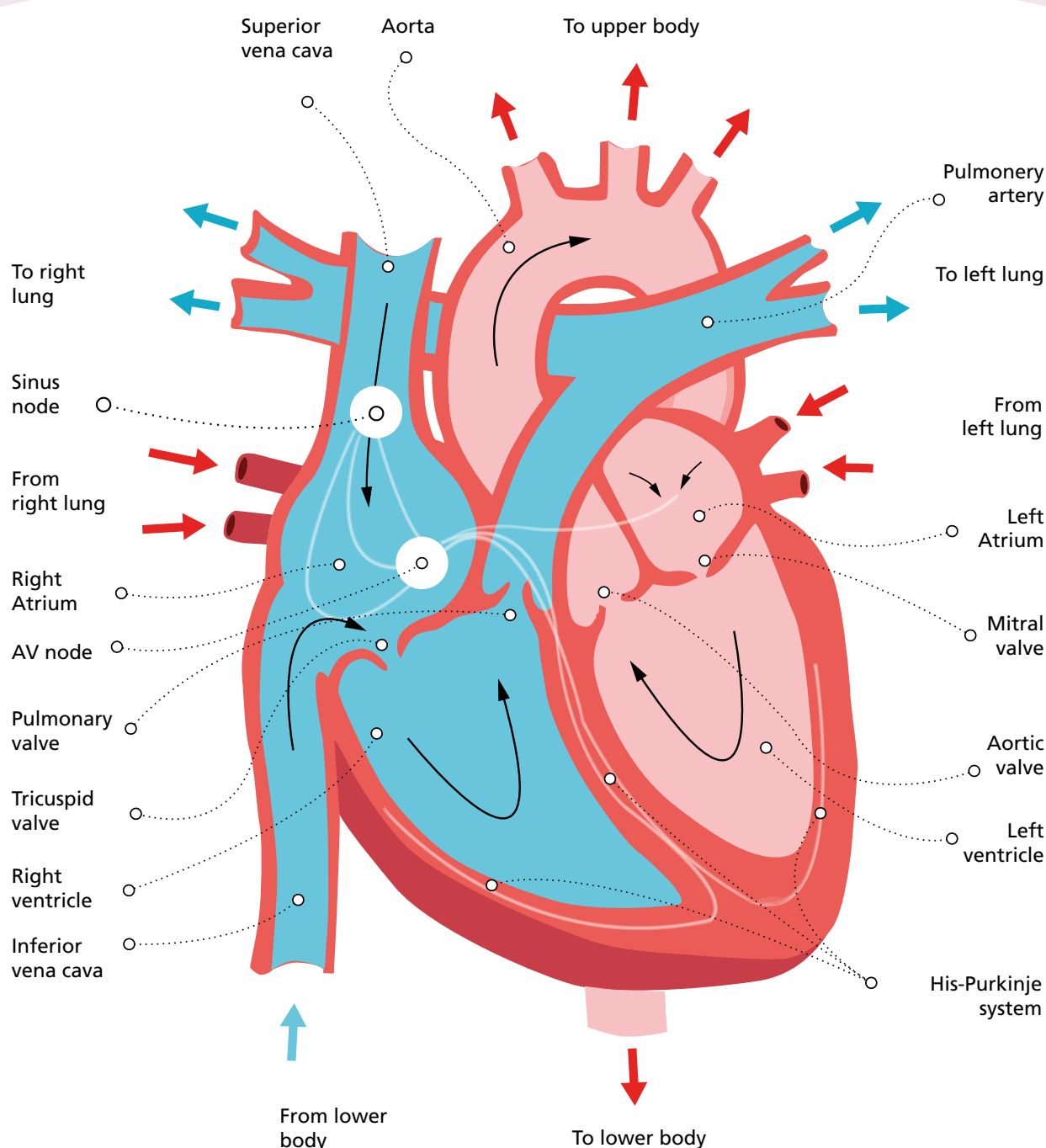
If either of these systems fails to work properly health problems will occur. If the arteries which channel blood to your heart muscle become blocked either partially or fully you can experience a heart attack*. The treatment for this includes drug therapy, percutaneous coronary intervention (PCI) (a procedure using a balloon and stent(s) to open up an artery) or cardiac surgery. Or, if the electrical system is not working properly the rhythm of the heart might be irregular, too fast, too slow or the heart can even suddenly stop beating altogether, which is a cardiac arrest (see heart attack symptoms fact box on page 14). Both of these cardiac events are a medical emergency and the person must receive treatment fast to maximise the chances of survival.

Heart failure is the term doctors use for when the heart is no longer able to pump the blood around the body as well as it should. The same expression is used whether there is only mild impairment or the pumping power is very poor - it does not say anything about the severity of the condition. The impaired pumping ability can be for a variety of reasons, such as disease of the heart muscle (known as cardiomyopathy) or the long-term damaging effects of high blood pressure, but commonly it occurs after a heart attack when the heart muscle can be permanently damaged.

Cardiac arrhythmia is where there is an abnormal heart rhythm. A relatively common form of arrhythmia is atrial fibrillation. This can lead to abnormal flow in the heart chambers, and sometimes results in a clot forming in a heart chamber. If this breaks off into the circulation it can cause a stroke. Several implantable devices such as pacemakers and defibrillators and treatments such as ablation, a procedure that scars tissue in your heart to block abnormal electrical signals, can be used to regulate heart rhythm.

Finally, babies can be born with structural problems of the heart. These abnormalities are called congenital heart disease, and urgent surgery may be required on the baby's heart before the first birthday, and often within the first couple of weeks after birth. Many of these heart problems are discovered through routine antenatal screening offered to pregnant women at 20 weeks of pregnancy or earlier. Where this is possible, it enables doctors to plan treatment of these babies before their mothers give birth, helping to improve their survival rate. However some more minor congenital heart conditions are not detected before birth as they are not easily seen on the scan.

* Most heart attacks are due to blockages. However, it is now recognised that a small number (up to 10 %) occur due to a temporary constriction of the coronary arteries, small blood vessels or a spontaneous tear in the inner lining of the blood vessels. See 4th Universal definition of an MI figure 4 in section 7.2 <https://academic.oup.com/eurheartj/article/40/3/237/5079081>





Heart attack (myocardial infarction)

If the arteries which channel blood to your heart muscle become blocked either partially or fully you can experience a heart attack.

This condition is known as acute coronary syndrome. If the blood flow is suddenly and fully blocked, a particular change is usually seen with a test called an electrocardiogram (ECG), which is carried out as soon as possible, ideally by paramedics called to a patient's home, or immediately on admission to hospital. This type of heart attack, called a 'STEMI' (ST Elevation Myocardial Infarction) carries the highest immediate risk and is an emergency requiring urgent unblocking of the artery.

The symptoms felt during a heart attack are because damage is being caused to the heart by the reduced blood supply. Delays accessing treatment can reduce the chances of survival and increase the chances of further permanent damage to the heart or serious complications.

There is another more common type of heart attack which is less immediately life-threatening but can lead to serious health problems later. This is when a coronary artery has suddenly become partially blocked by a clot, or narrowed to the point where blood cannot easily pass through. Often the heart will have developed its own protective action to minimise potential damage, but it is vulnerable. When an ECG is carried out, the pattern is different from the higher-risk STEMI heart attack and doctors call it an "NSTEMI" (Non-ST Elevation Myocardial Infarction).

Other tests which can help to diagnose a lower-risk heart attack include a troponin test, which measures levels of a heart muscle protein released into your blood when your heart muscle is damaged, or an echocardiogram (echo) which is an ultrasound scan that bounces sound waves off different parts of your heart, and uses the echoes to produce an accurate picture of your heart's structure and function on a screen. Angiography is a procedure that uses X-rays to check the health of your blood vessels and to assess any blockages to blood flow. This is done by inserting a thin catheter into an artery and injecting a dye which highlights the blood vessel. It helps the cardiologist decide which is likely to be the best treatment for you.



With data from the [Myocardial Ischaemia National Audit project \(MINAP\) 2024 report](#) (2022/23 data for England, Wales and Northern Ireland unless otherwise stated).

The number of recorded heart attacks is falling, but big variances are seen in different locations

Last year, hospitals across England, Wales and Northern Ireland reported a **4% fall in the number of confirmed heart attacks** compared to 2021/22. The total of 81,735 cases in 2022/23 was also 8.4% down from five years before. Just over a third of patients had suffered a **higher-risk (STEMI) heart attack with the rest being lower-risk (NSTEMI) cases**.

Heart attacks amongst those aged 75 years and older appear to be falling, but are rising for younger patients, particularly lower-risk NSTEMI cases. Possible factors could include:

- increasing obesity and diabetes in younger people
- greater take-up of prevention measures by older people
- some patients being less likely to go to hospital when first experiencing symptoms (post-COVID concerns)
- improvements in testing patients for [troponin](#) earlier and quicker access to treatment.

There is nearly a **4-fold variation** between different places in the numbers of heart attacks per 100,000 population. The highest rates are seen in Cheshire and Merseyside (213 cases per 100,000 population) compared with South East London (60 cases per 100,000 population).

Time to treat higher-risk STEMI heart attacks is critical: a matter of life or death

The time to treat higher-risk STEMI heart attacks is critical to patient recovery and survival. To achieve the best possible outcomes, patients must be assessed quickly with an [ECG](#). Patients should then receive **primary percutaneous coronary intervention (PPCI)** if a higher-risk heart attack is confirmed.

The average time for a patient to be brought to hospital by ambulance (the 'Call-To-Door' or CTD time) is now **28 minutes longer** compared to 10 years ago. For 25% of patients, CTD times were at least two hours and 10 minutes.

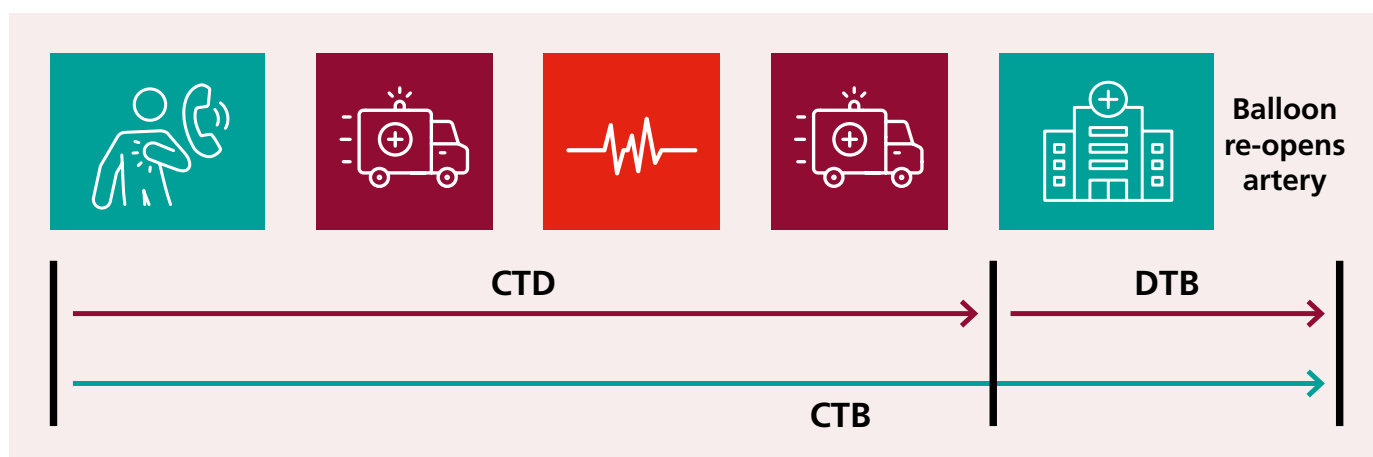
CTD times have risen over the last 10 years across all ambulance trusts and there is very wide variation between local health systems, with the worst performers taking **twice as long** compared to the best performers. Improvement is possible though and CTD times fell during 2022/23 in Wales, Northern Ireland and at the South Western Ambulance Trust.

It is also taking slightly longer for patients to be treated once they have arrived at the PCI Centre in a hospital to start PPCI treatment (the 'Door-To-Balloon' or DTB time). The average DTB time is now **3 minutes longer** compared to 5 years ago. The biggest change was amongst the 25% of patients with the longest delays who had to wait at least 71 minutes. These delays can have serious consequences for patient outcomes.

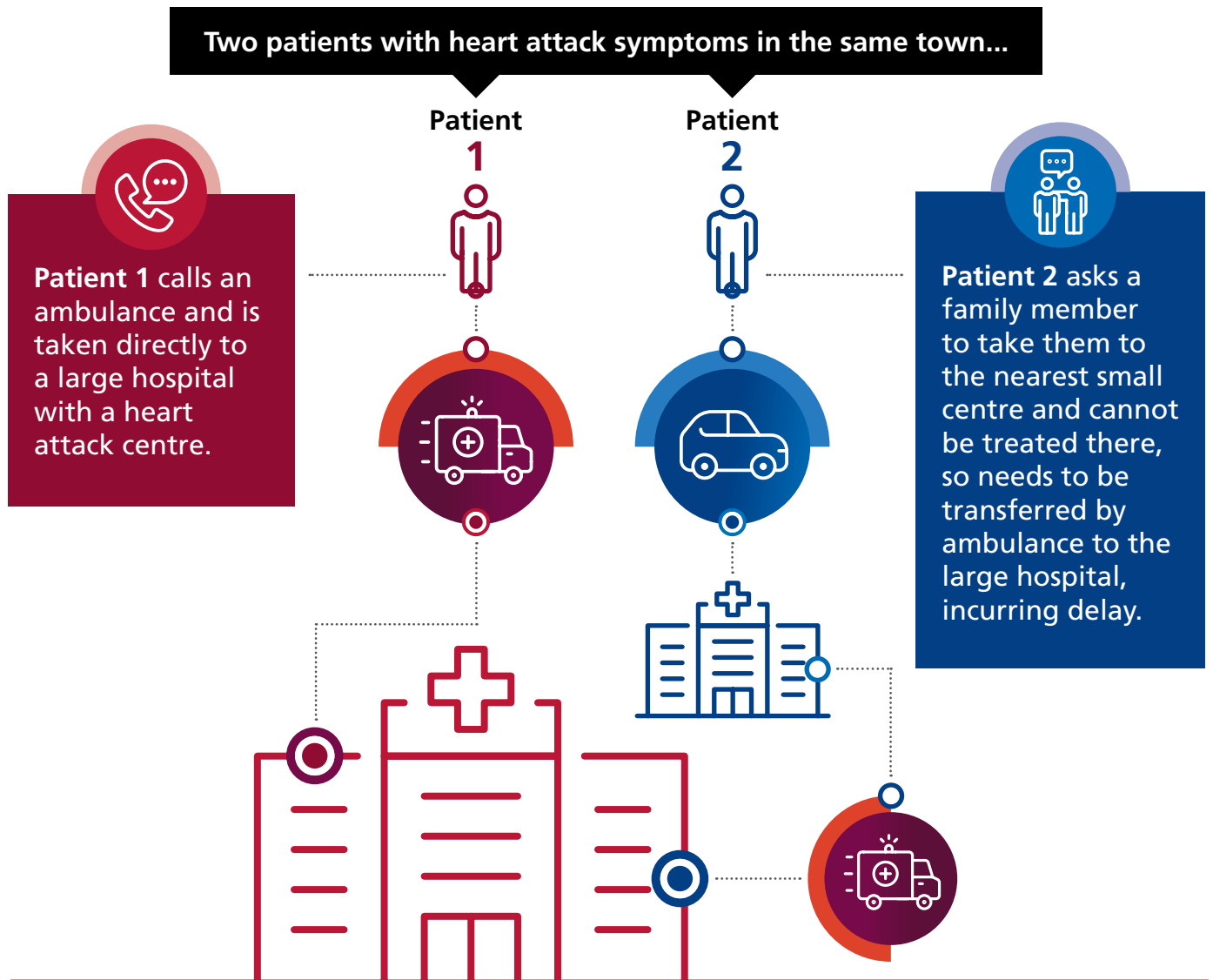
Taken together, the CTD and DTB times give the overall 'Call-To-Balloon' (CTB) time. In 2022/23, CTB times were on average **32 minutes longer** compared to 10 years ago. The 25% of patients with the longest time to treatment are waiting **more than 3 hours** from calling for help to receiving their PPCI treatment. Most of the extra time is the result of waiting longer for an ambulance to take them to hospital.

Only **29%** of patients received their PPCI treatment **within 120 minutes** of calling for help, with just over half (56%) treated within 150 minutes. Again, there are significant differences between places. The average CTB time is up to **3 times longer** in some local health systems compared to others. Similarly, there is wide variation in the average DTB time with the longest waits adding an extra 50 minutes delay to treatment. This underlines the need for hospitals to treat patients faster for better outcomes.

Emergency time periods for the treatment of higher-risk STEMI heart attack patients



An example of two methods of travel to the hospital for a patient with symptoms of a heart attack which can impact Call to Balloon times.



A Heart attack is a medical emergency

Call 999 urgently for an ambulance which will take you to the best available treatment centre.

Do not attempt to take yourself to hospital. Fast treatment could save your life.

Heart attack symptoms

- **Sudden pain, pressure or discomfort in your chest** that doesn't go away
- The **pain may radiate to one or both arms** or your **neck, jaw, back** or **stomach**
- This can be severe for some people, and others simply experience discomfort
- You may also **start to sweat, feel sick, breathless, faint, dizzy, or a sense of panic.**

It's possible to have a heart attack without experiencing sudden chest pain - this is more common in women and people with certain conditions which affect how pain is experienced.

You can read more about attack symptoms [here](#)

Since the COVID-19 pandemic, more higher-risk heart attack patients are self-presenting at hospital rather than arriving by ambulance

1 in 10 people with higher-risk heart attacks 'self-presented' to hospital rather than travelling by ambulance.

Patients should call for an ambulance service because the paramedic team can provide immediate life-saving treatment and take the patient directly to the nearest hospital which is able to provide PPCI treatment. Patients who take themselves (or 'self-present') to hospital first have to be assessed in an A&E department before being taken on to the cardiac team able to perform the PPCI. If they arrive at a local hospital that does not offer PPCI treatment, this will involve an additional journey (inter-hospital transfer or IHT) to a PCI centre in a hospital that can provide this.

Delays in accessing an ambulance mean that, for the first time, a higher proportion of patients taking themselves to hospital are being treated within the target times compared to those travelling by ambulance. However, the measurement clock only starts for these 'self-presenters' when they arrive at hospital. It does not include the time between when they would otherwise have called for an ambulance and when they get to the hospital, which itself could have involved a lengthy delay. Neither does the audit data capture those patients who attempted to get themselves to hospital but did not survive before being admitted, possibly because they did not get the immediate care the paramedic team can provide.

While urgent action is clearly needed to reduce ambulance times, anyone who suspects they are having a heart attack is still advised to ask for one by calling 999.

Delays for patients with lower-risk NSTEMI heart attacks were referred for urgent angiography and treatment

International guidelines state that patients with the lower risk heart attacks should receive [angiography](#) prior to discharge and, ideally, within 72 hours of admission. There has been a gradual increase in the proportion of patients who underwent angiography in hospital from 78% in 2013/14 to **84% in 2022/23**. However, the proportion of patients who underwent angiography within 72 hours of admission has fallen.

Some parts of the country investigated all patients but there are other areas where virtually **no patients** are investigated during the initial admission to hospital. There is also evidence of **considerable geographic variance** in the proportion of patients who are or are not investigated by angiography imaging within the 72-hour target.

A smaller proportion of older people and slightly fewer females receive angiography within 72 hours of admission. More frequent and earlier use of ECG testing and special blood tests may help clinical teams to optimise care for patients, regardless of sex or age.

More patients undergo echocardiography

After a heart attack, it is recommended that all patients should undergo an investigation to evaluate their heart pump function and usually this is done by [echocardiography](#). There has been a **gradual increase** in the use of echocardiography after higher-risk heart attacks to **73%** in 2022/23, however, only Northern Ireland has met the 90% target. Although the use of echocardiography is increasing, most hospitals do not achieve the target for the investigation of patients after a heart attack. Less than half of hospitals achieved the 90% target for patients with higher-risk heart attacks during 2022/23.

While most patients access specialist care, too few are prescribed the appropriate drugs when discharged and some hospitals fail to refer on to cardiac rehabilitation

Both heart attack and heart failure patients should have specialist care by being admitted to a cardiology ward or having cardiology teams input to their treatment (page 22). For lower-risk NSTEMI heart attack patients, **59%** were admitted to a cardiology ward and nearly all were seen by a specialist cardiology team, including those admitted to a general or other ward.

Despite this, there has been a worrying fall in the percentage of patients discharged home with the appropriate package of drugs. Only **81%** of eligible patients received all the prevention drugs they required, **down from 87% in 2017/18**. There was though an improvement in relation to offering some form of [aldosterone antagonist drug](#), with **73%** of eligible patients being prescribed this medication on their discharge from hospital.

Many hospitals also report referring **at least 85%** of all heart attack patients to a cardiac rehabilitation programme in 2022/23 though a significant number do not achieve this level.



Useful resources for heart attack patients:

[Heart UK](#) (cholesterol charity)

NHS conditions: [Heart attack and recovery](#)

[British Heart Foundation: Heart attack](#)



Percutaneous coronary intervention (PCI)

If you experience a higher-risk STEMI heart attack, the preferred treatment in the UK is emergency or primary percutaneous coronary intervention (PPCI), also known as primary angioplasty. This restores blood flow to the heart as soon as possible to stop further damage.

Percutaneous coronary intervention (PCI) is also a very common treatment for patients with a lower-risk heart attack or when they have been admitted to hospital with unstable angina, as well as being an effective treatment to reduce symptoms in patients with stable angina.

PCI is a non-surgical procedure in which a small balloon is used to stretch a narrowed artery, usually with the placement of a stent, to increase blood flow to the heart.

With data from the [National Audit of Percutaneous Coronary Intervention \(NAPCI\) 2024 report](#) (2022/23 data for England and Wales unless otherwise stated).

The number of patients who have PCI procedures has fallen slightly

The number of PCI procedures **fell by 3.1%** compared to 2021/22. The largest reduction has been in less urgent elective PCI procedures for patients with stable coronary artery disease, **down 21%** since 2019/20. This may partly result from recent trials which have shown that prescribing drugs can achieve survival rates as good as using PCI (although the latter has a more immediate impact on a patient's symptoms).

There is a big variance in the number of PCI procedures carried out per 100,000 population, with some parts of the country having rates 10 times higher than the lowest. The reasons for these differences are not clear.

Older females are less likely to receive reperfusion therapy for a higher-risk heart attack

Higher-risk STEMI heart attack patients who are **female and aged over 75 are much less likely** to receive some form of reperfusion therapy, whether by the use of clot-busting drugs ('thrombolysis'), primary PCI, or both. A proportion of these patients present with symptoms that clinicians may not immediately associate with a heart attack, potentially delaying the correct diagnosis beyond the point at which reperfusion therapy can offer benefits. All clinical staff (in hospitals and across primary and community care) must ensure they can interpret symptoms other than chest pain which may represent a heart attack.

Over two thirds of patients undergoing elective PCI are now treated as a day case

The PCI procedure has evolved and improved since its first introduction and is generally safer, with less risk of complications. Consequently, the proportion of elective PCI procedures treated as a **day case has risen to 71%**, though this is unchanged from the previous year. There is also **considerable variation** between hospitals (99% of elective PCI procedures in Suffolk and North East Essex were done as day cases compared to just 38% in Cornwall and the Isles of Scilly).

Intracoronary imaging techniques are being used more commonly to assess the results of complex PCI procedures

Using intracoronary imaging (ICI) techniques for more complex PCI procedures helps ensure the quality of these procedures and there has been a steady increase in this (**ICI was used in 26% of cases** compared to 12% in 2018/19).

Again though, there is a **wide variation** between hospitals, with ICI used for only 4% of complex PCI cases in Coventry and Warwickshire compared to 58% in South West London.

There is considerable variation in the use of newer drug therapies across PCI services

After patients have received a stent from a PCI procedure, they receive two drugs ('dual anti-platelet therapy') to prevent blood clots and reduce the risk of a future heart attack. Typically, this comprises aspirin and one of a class of drugs referred to as **P2Y12 inhibitors** such as [prasugrel](#) or [ticagrelor](#), antiplatelet medicines which help blood flow through vessels more easily and can help prevent blood clots. Trial evidence suggests these newer drugs should also be prescribed to patients who undergo PCI following a heart attack. However, use of those drug therapies in these cases remained largely unchanged at around 40%. This is **much lower than expected with considerable variation between hospitals** (prescribing of either prasugrel or ticagrelor from 87% in South Yorkshire to zero in several Integrated Care Board areas).

The use of drug-eluting balloons (a balloon coated with medication that is released into the vessel wall, which inhibits scar tissue that might later re-narrow the vessel after treatment) during PCI procedures has **grown steadily over the last 5 years** from less than 1% of cases in 2018/19 to over 8% in 2022/23. Drug-eluting balloons can be used in conjunction with a stent or can be used solely to treat a lesion.



Useful resources for PCI patients:

[British Heart Foundation: Treatments for heart conditions, angioplasty – your quick guide](#)

[NHS: coronary angioplasty and stent insertion](#)

[British Cardiovascular Intervention Society](#)



Adult cardiac surgery

Adult Cardiac Surgery includes all procedures performed on patients aged 18 or over that involve the heart or structures attached to the heart. Heart operations include Coronary Artery Bypass graft (CABG) procedures; valve replacement or repair; aortic surgery (surgery on the body's main artery); or a combination of these. Procedures on the heart not requiring the chest to be opened surgically and surgical procedures on babies and children are covered elsewhere in this report.

With data from the [National Audit for Adult Cardiac Surgery \(NACSA\) 2024 report](#) (2022/23 data for England, Wales and Northern Ireland unless otherwise stated).

The number of adult heart operations continued to fall and survival rates remained high

Just under 26,000 adult heart operations were performed in 2022/23. This total is **down 13%** since 2019/20 (or almost **4,000 fewer operations each year**) with 28 out of 32 NHS hospitals performing fewer cases than they did then. A gradual decline over the last 10 years for all types of adult heart operations then saw a big fall in activity during the COVID-19 pandemic.

The number of operations at NHS hospitals ranged from just over 1,800 to under 400 (the average was 757). 6 hospitals performed fewer than 400 procedures.

The overall survival rate after cardiac surgery was 'as expected' over the last 3 years (2020/21 – 2022/23). The average survival rate during this 3-year period was 98.2%.

Waiting times for elective surgery were longer, though still improved since the COVID-19 pandemic

The average waiting time in England for an elective CABG operation was **119 days**. Only 6 hospitals achieved the target waiting time of under 84 days for these procedures. The waiting time is **5 days longer compared to last year** (2021/22). However, this is still an improvement compared to the average of 127 days in 2020/21 during the first wave of the COVID-19 pandemic. The increased wait time may be a result of capacity issues in hospitals that reduce the overall number of procedures.

Waiting times for urgent CABG procedures improved in Wales but were worse in England

The average waiting time in hospitals for urgent CABG procedures was **13 days** in England compared to 10 days in 2019/20. The number of patients requiring urgent CABG surgery who are treated within the 7-day target is falling in England (down to 26% from 35% in 2020/21).

The average waiting time in Wales was **14 days**, an improvement on the previous year and, similar to England, 1 in 4 patients are treated within the 7-day target.

Only 4% of patients in Northern Ireland are operated on within the 7-day target, where the average waiting times for urgent CABG was **23 days**.

Day-of-Surgery Admission (DOSA) rates for elective operations improved but most hospitals did not meet the target

Day-of-Surgery Admission (DOSA) provides a better patient experience and supports efficiency for hospitals. It is also more likely that fewer patients will require cancellation for medical reasons if they have been carefully assessed prior to admission. The target is for hospitals to undertake 50% of procedures as DOSA cases.

In practice, the majority of hospitals did not meet the 50% target. The best-performing hospital undertook 77% of operations as DOSA cases and 5 hospitals had rates over 25%. However, 17 hospitals had DOSA rates of under 5%.

The overall DOSA rate for elective surgery had reached **almost 21%** across England in 2018/19 but this fell during the COVID-19 pandemic and it has been a challenge for hospitals to improve the number of DOSAs compared to 2020.





Large numbers of younger patients did not receive the type of aortic valve recommended by guidelines

For patients requiring aortic valve replacement (AVR), international guidelines recommend mechanical valves in younger patients (those under 50) and biological tissue valves in older patients (those over 70). This is because tissue valves are more prone to gradual structural failure than mechanical valves and younger patients who have been treated with a tissue valve stand more chance of needing either repeat AVR surgery or transcatheter aortic valve implantation (TAVI). While almost all AVR procedures in patients over 70 years old used tissue valves, **25% of AVR procedures in patients under 50 were performed using tissue valves, against the current guidance**. There is considerable variation in adherence to the standard, with some hospitals going against current guidelines in up to 80% of cases.

Some additional data on patients who underwent surgical mitral valve procedures is included in the chapter on the Transcatheter Mitral and Tricuspid Valve (TMTV) Registry.



Useful resources for adult cardiac surgery patients:

[British Heart Foundation: coronary bypass surgery](#)

[British Heart Foundation Heart Matters Magazine: valve disease](#)

[British Heart Foundation: aortic aneurysm](#)



Heart failure

Heart failure occurs for several reasons. It is often a secondary effect of other heart problems such as a heart attack (when the heart muscle is damaged), damage caused by the increased strain on the heart from high blood pressure, or cardiomyopathy (a disease of the heart muscle), as well as other causes. It usually cannot be cured but, in many cases, patients can manage their condition with drugs and other therapies.



When the heart pump function is weaker than usual, this is referred to as Heart Failure with reduced Ejection Fraction (HFrEF), the ejection fraction being a marker of how well the pump is functioning (the higher the number the better). In some patients the mechanism for the symptoms is different as the heart pump function appears to be normal or near normal. This is referred to as Heart Failure with preserved Ejection Fraction (HFpEF).

The place of care is important for patients, as being seen on a cardiology ward is associated with the best survival (during admission and after discharge), the best access to specialist care and the greatest likelihood of leaving hospital on the primary heart failure drugs which are known to improve prognosis.

With data from the [National Heart Failure Audit \(NHFA\) 2024 report](#) (2022/23 data for England, Wales and Northern Ireland unless otherwise stated).

The rise in heart failure hospital admissions appears to be slowing but there is significant variance by location

Admissions to hospital for the first time where heart failure was the primary diagnosis **were down 8.6% from 2021/22** to a total of 63,530. The rate of heart failure admissions varied widely, from 40 patients per 100,000 population in both Bath and North East Somerset, and Swindon and Wiltshire, to 146 patients per 100,000 population in Devon.

Fewer patients were cared for on a cardiology ward, but more were seen by specialist heart failure outreach teams

At least 60% of heart failure patients should be cared for on a cardiology ward based on current targets, but the actual number has been falling gradually and was **only 40%** in 2022/23.

This is a worrying trend as patients with heart failure are some of the highest-risk admitted to hospital and evidence demonstrates their care is improved with specialist care. Protecting access to these beds for heart failure patients is essential to achieve the best possible outcomes. Despite this, **82% of patients received care from a specialist heart failure team**, meeting the quality improvement target of 80%. The role of the outreach heart failure team is vital and is associated with lower mortality rates (in and out of hospital), and improved treatment of patients on discharge.

More heart failure patients need to be investigated with an electrocardiogram (ECG) or echocardiogram

Assessing heart failure patients with echocardiography and the use of an [electrocardiogram \(ECG\)](#) is an important step in determining the cause of the heart failure and deciding on the best drug treatment. The percentage of heart failure patients investigated with echocardiography dropped, continuing a **slow decline** that started in 2017/18. There is considerable variation between hospitals.

For heart failure patients who are receiving specialist care, the percentage of patients who undergo echocardiography remained around 90%. However, for patients **who are not** cared for on cardiology wards and especially those who do not receive heart failure specialist care, the echocardiography rate **deteriorated to 65%**.

Very few heart failure patients are referred to cardiac rehabilitation prior to discharge

All patients should leave hospital knowing when, where and by which member of the specialist heart failure team they will be reviewed within two weeks. They should also be referred to cardiac rehabilitation. Even for those admitted to a cardiology ward, **only 15% were recorded as being referred to rehabilitation** (and just 5.5% from general medical wards).

These low rates might be explained by patients receiving referrals shortly after discharge. Nonetheless, this is a considerable concern and additional work is being performed in collaboration with the National Audit of Cardiac Rehabilitation (NACR) to investigate in more detail.

More patients are receiving drug therapy that improves longer-term outcomes

Various types of drugs have been shown to improve the health outcomes and quality of life for heart failure patients, especially those with impairment of the heart's pump function.

The number of eligible patients who were prescribed the recommended disease-modifying drugs largely improved:

- Beta blockers were prescribed to 91% of patients
- One of an ACE inhibitor, angiotensin receptor blocker or an angiotensin receptor/neprilysin inhibitor (ACEI/ARB/ARNI) to 85%
- Mineralocorticoid receptor antagonists (MRAs) to 68%
- All 3 classes of drugs to 59%.

In addition to these conventional therapies, a new class of drugs called sodium glucose co-transporter 2 (SGLT2) inhibitors, is now recommended for patients with HFrEF. In 2022/23, 59% of these patients received this class of drugs.

Drug therapy for heart failure

There are several groups of drugs which have been shown to improve survival for heart failure patients where there is impairment of the pump function of the heart. Information and videos can be viewed on the British Heart Foundation and Heart Failure Matters websites:

[‘How do ACE inhibitors work?’](#)

[‘How do Beta Blockers Work?’](#)

[Heart Failure Matters](#)

[British Heart Foundation: Medicines for heart conditions](#)



Other useful resources for heart failure patients:

[The Pumping Marvellous Foundation](#)

[Cardiomyopathy UK](#) (for diseases of the heart muscle)



Cardiac arrhythmia (cardiac rhythm management)

Arrhythmia (irregular heartbeats that can be too fast, too slow, or erratic) can cause serious problems, even leading to sudden cardiac arrest (SCA) where the heart stops completely, which without medical attention on the scene is often fatal.

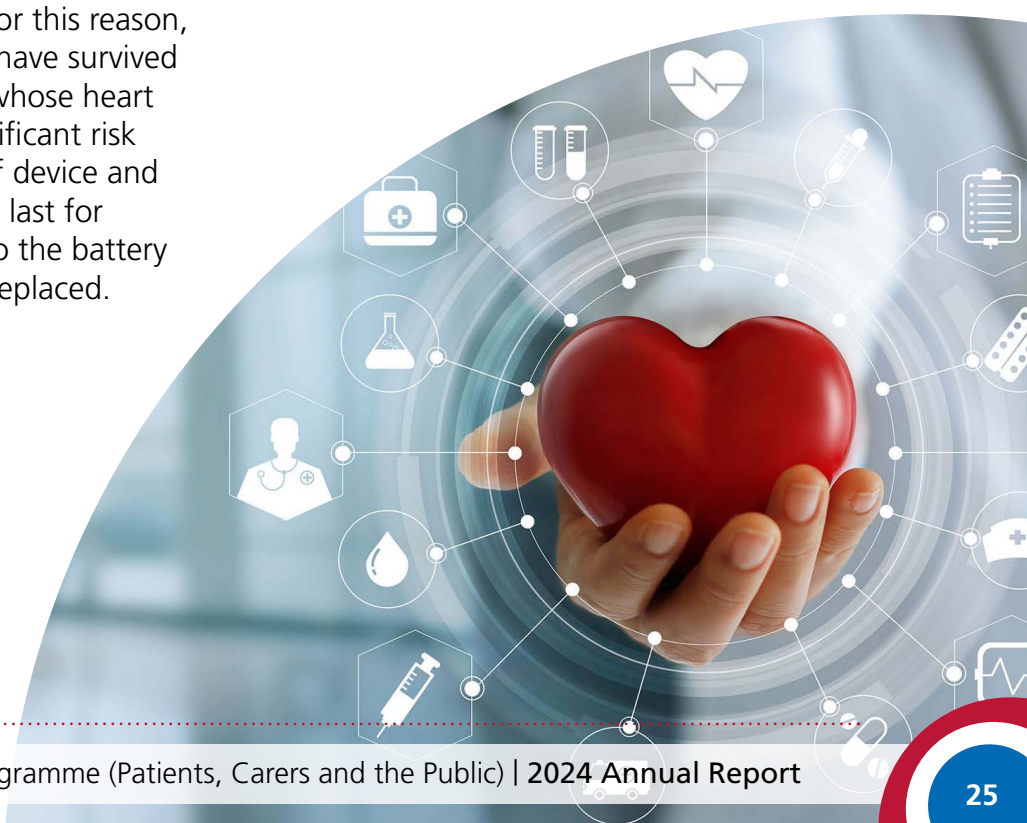
Patients with arrhythmia can be investigated with implantable heart monitors or treated with either:

- cardiac implantable electronic devices (CIEDs) such as pacemakers and defibrillators
- ablation procedures to restore normal heart rhythms by destroying the abnormal tissue causing irregular heartbeats.

Implantable cardioverter defibrillators

(ICDs, implanted under the skin with a small operation requiring only local anaesthetic) can automatically detect a cardiac arrest, and restore the normal heart rhythm with a shock or with pacing, within seconds. For this reason, they are offered to patients who have survived a prior cardiac arrest, and those whose heart tests have shown they are at significant risk of one. Depending on the type of device and the patient, most device batteries last for 6-10 years. A few months prior to the battery running out, the entire device is replaced.

Catheter ablation involves passing a thin catheter into the heart via a vein or artery. It is used to treat some forms of abnormally fast heart rhythms, such as atrial fibrillation. The problem area which is causing the arrhythmia is identified, and either thermal (heat) or freezing (cryo) treatment is delivered via the catheter, destroying small areas of tissue and causing scar tissue to form. This can either deactivate the area entirely from the electrical pathways of your heart, so the electricity takes a different route, or stop a damaged area of heart muscle from causing abnormal electrical impulses which make your heart rhythm potentially dangerous.



With data from the [National Audit for Cardiac Rhythm Management \(NACRM\) 2024 report](#) (2022/23 data for England, Wales and Northern Ireland unless otherwise stated).

The number of pacemakers and other electronic heart device implantations remained lower than pre-pandemic levels

The number of CIED procedures rose slightly to almost 79,000 in total but remains **lower than pre-pandemic levels**. This could be for several reasons including falling demand or lack of capacity and rising waiting lists. It is recommended hospitals investigate the reason for the plateau in the number of procedures.

While procedures to fit a new pacemaker remained lower than in 2019/20, the **number of battery changes increased** from 9,739 in 2021/22 to 10,796 in 2022/23.

There has been a rise in implantable heart monitors, CRT-P resynchronisation pacemakers and leadless cardiac pacemakers

There has been a gradual increase in the number of [implantable loop recorders](#) used for diagnostic and monitoring purposes. With more than 13,000 procedures, this continues the recovery since an 85% drop in implantations during the first peak of COVID-19 hospital admissions in 2020/21.

More [cardiac resynchronisation therapy pacemakers \(CRT-P\)](#) are also being given to patients when their heart is not able to pump blood effectively (6,517 implantations in total). The use of CRT-P devices has been increasing since 2015/16, reflecting a gradual move away from ICDs (for which the number of procedures is still below pre-pandemic level). There is, though, a **10-fold difference** between those regions with the highest CRT-P implantation rates compared with lowest. This is not likely to be explained by the relative numbers of heart failure patients but, rather, suggest big variations in the identification of eligible patients, access to treatment and pathway capacity across the country.

The number of leadless cardiac pacemakers (LCPs) have **increased sharply since** the pandemic, though the total number of procedures remain small (415 in 2022/23). This is likely to be due to technology advancements, an increase in the number of devices available and access to the devices.

Complex atrial ablation procedures are growing, but at very different rates around the country

There are 2 categories of atrial ablation, 'simple' and 'complex', both of which are sophisticated techniques for treating patients with fast rhythms that involve the top chambers of the heart. These are used mainly for patients with [atrial fibrillation \(AF\)](#) (irregular or fast heart rate). While the number of 'simple' ablations was **much lower** than in 2019/20, more **complex ablation procedures were performed** (11,454 in total) than before the pandemic. When 'simple' ablations were first introduced, there were many potential patients eligible for treatment, and it is likely that many of these have now undergone the procedure.

The rate of complex atrial ablation cases in some areas is 5 times higher than in others, suggesting wide variation in referral patterns and service capacity within hospitals. Considerable work is needed to ensure appropriate patients are identified and treated.

Some hospitals have high re-intervention rates in the first year after implantation of pacemaker devices

After a pacemaker implantation, a second procedure is occasionally needed because of displacement of an electrode or other complications (for example bruises or blood clots under the skin or, less frequently, infections). The rate of first year re-interventions after simple CIED implants remained consistent at just over 4%. However, amongst hospitals performing more than 200 pacemaker procedures, complication rates ranged from **zero to 15%**.

The overall re-intervention rate one year after the implantation of complex CIED devices has fallen over time (with a **20% reduction** in 2021/22 compared to 2016/17). Like simple CIED implants, there is a wide variation in the 1-year re-intervention rates across hospitals performing over 100 procedures, ranging from 1% to 14%.



Useful resources for patients with heart arrhythmia:

[Arrhythmia Alliance](#)

[British Heart Foundation: Abnormal Heart Rhythms](#)

[British Heart Foundation: Sudden Cardiac Arrest](#)



Congenital heart disease

Many heart problems develop during a person's lifetime and are influenced by lifestyle as well as genetics but some, called congenital heart disease (CHD), are present from birth and develop in the womb.

With data from the [National Congenital Heart Disease Audit \(NCHDA\) 2024 report](#) (2022/23 data for England, Wales and Northern Ireland unless otherwise stated).

The number of procedures on adults and children increased, with reductions in surgery and increases in catheter-based interventional procedures

The total of 11,407 CHD procedures on children and adults represented a 3% rise compared to 2021/22 but was still 9% down on pre-COVID-19 levels in 2019/20.

Surgical procedures are 20% down on 2019/20, something that is particularly evident in children with CHD. This may be linked to the **increase in the number of interventional procedures rising by 9%** over the previous year to levels that are higher than pre-pandemic levels. The decline in surgical numbers may also stem from clinicians choosing to use corrective surgery earlier for a patient rather than doing this later following one or more initial procedures that are largely intended to stabilise the child's condition.

However, interventional procedures can only account for some of the changes. It is likely that the COVID-19 pandemic has had a negative impact on the number of surgical procedures with challenges around accessing protected beds, the number of intensive care unit nurses and availability of anaesthetic support teams. These factors are now being addressed but it will take time to restore services completely.

30-day survival rate for surgery in children remains high

The overall 30-day survival rate for the 8,841 surgical operations undertaken in children under 16 years of age in 2022/23 was **98.4% and remains among the best reported anywhere in the world.**

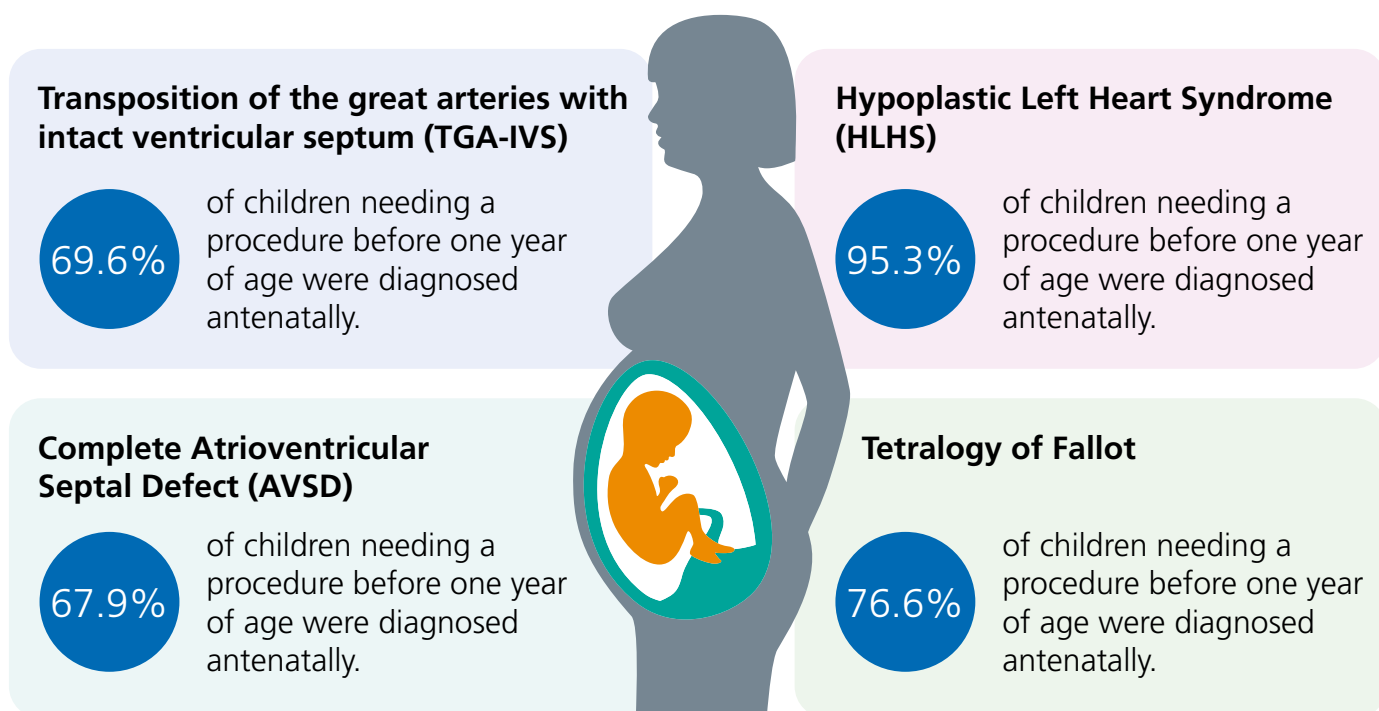
Assessing the likely survival rate for a specific congenital heart problem at a particular hospital is more complex. A risk-based calculation is used to reflect the type of congenital heart disease as well as taking account of non-cardiac patient factors that influence the outcomes after a given procedure, such as genetic abnormalities and how sick the child is just before the operation. The overall risk-adjusted 3-year result of 98.4% was better than the 97.9% predicted survival rate. You can read more about this and view the risk adjusted survival rates for all UK congenital heart disease centres on the [Children's Heart Surgery website](#).

Antenatal diagnosis of conditions which need an operation within the first year of life remained largely unchanged but with variation across England and Wales

For babies requiring a procedure in the first year of life, prenatal diagnosis rates have steadily improved over time although seem to have **plateaued recently**. However, the 3-year rate of **prenatal diagnosis varies** across Integrated Care Boards (ICBs) in England and University Health Boards (HBs) in Wales. In one ICB, the rate is 3-times higher (65%) compared to another (24%). It should be noted that these are not the 'true' prenatal diagnostic rates for all congenital heart disease abnormalities because not all patients require or survive to undergo a procedure.

Antenatal detection

54.2% of children needing a procedure before 1-year of age had their condition diagnosed antenatally in 2022/23.



Transposition of the great arteries with intact ventricular septum (TGA-IVS):

69.6% of children needing a procedure before 1-year of age were diagnosed antenatally.

In a child with transposition, the blood which doesn't have oxygen in it gets pumped around the body instead of the blood which does contain oxygen. Emergency treatment is required as soon as the baby is born, otherwise the condition can be fatal. This condition is often visible on an ultrasound scan at 20 weeks of pregnancy.

Hypoplastic Left Heart Syndrome (HLHS):

95% of children needing a procedure before 1-year of age were diagnosed antenatally.

HLHS is a rare type of congenital heart disease, where the left side of the heart doesn't develop properly and is too small. This results in not enough oxygenated blood getting through to the body.

Complete Atrioventricular Septal Defect (AVSD):

67.9% of children needing a procedure before 1-year of age were diagnosed antenatally.

A complete AVSD occurs when there is a large hole in the centre of the heart which allows blood to flow between all 4 chambers of the heart. Babies with this condition, who had to have a 'corrective' procedure before 1-year of age, had it detected before birth.

Tetralogy of Fallot (TOF):

76.6% of children needing a procedure before 1-year of age were diagnosed antenatally.

TOF is a combination of 4 congenital (present at birth) heart defects that affect infants and children. Babies who had to have a 'corrective' procedure within one year of birth were diagnosed with the condition in the womb.

Visit the [NHS website](#) for more information on the types of congenital heart disease.



Useful resources for congenital heart disease patients:

[Tiny Tickers](#)

[Children's Heart Federation](#)

[Little Hearts Matter](#)

[The Somerville Heart Foundation](#)
(adults with congenital heart problems)

[Antenatal Results and Choices](#)



Transcatheter aortic valve implantation (TAVI) Registry

Transcatheter aortic valve implantation (TAVI) is a procedure to treat aortic stenosis. The procedure involves inserting a catheter into a blood vessel in your upper leg or chest and passing it towards your aortic valve. The catheter is then used to guide and fix a replacement valve over the top of the old one.

The main advantages of this technique are that the heart doesn't need to be stopped, so a heart-lung (bypass) machine doesn't need to be used, and it avoids making a large cut (incision) in your chest. This puts less strain on the body and may mean TAVI is more suitable for people who are too frail to have a conventional valve replacement.

TAVI is provided by 32 NHS and 8 private hospitals in England, Wales and Northern Ireland.

With data from the [Transcatheter Aortic Valve Implantation \(TAVI\) Registry 2024 report](#) (2022/23 data for England, Wales and Northern Ireland unless otherwise stated).

Age of TAVI patients is unchanged but there is some suggestion that fewer women than might be expected receive treatment

The average age of elective TAVI patients is 82, a figure that has not changed over the past 10 years. Amongst elective TAVI patients aged over 75, 43% are female. In the population as a whole, 57% of this age group are female (Census 2021), which suggests there may be an under-provision of TAVI treatment to this group (though further investigation is needed to confirm this). For urgent TAVI cases, there is no significant difference in these proportions between males and females.

TAVI procedures are increasing, usually without the need for general anaesthetic

A total of 7,669 TAVI procedures were performed, a **13% increase** compared to 2021/22. TAVI cases have doubled since 2017/18.

TAVI is a less invasive procedure so 94% of TAVI procedures were performed with conscious sedation (local anaesthetic) and 96% were performed via percutaneous femoral arterial access (in the upper thigh, near to the groin).

The rate of TAVI procedures varies substantially across the country suggesting some patients have poorer access to services

The rate of TAVI cases per million population (pmp) is **more than 6-times higher in some areas compared to others**. The total number of procedures varied from 49pmp in Dorset ICB to 295pmp in Swansea Bay University Health Board. The variance is evident in both elective and urgent cases. The rate of elective TAVI procedures in Cambridgeshire and Peterborough ICB was 36pmp compared with 190pmp in Swansea Bay University HB while urgent procedures totalled 100pmp in Swansea Bay University HB and only 1pmp in South Yorkshire ICB.

These differences are not likely to be fully explained by demographic and clinical differences in each population and suggest that access to treatment and referral patterns lag other places.

TAVI is increasingly used for urgent aortic valve cases and offers a shorter length of stay for patients

When first introduced, TAVI was performed predominantly on elective patients. More recently there has been an **increase in urgent cases** for patients with heart failure or symptoms of poor blood flow from the heart to the brain. Some 25% of TAVI procedures were performed as urgent cases, up from 17% in 2016/17.

Previously patients were often treated temporarily with drugs or an aortic balloon valvuloplasty to widen the valve before being re-admitted later for an elective TAVI procedure. Hospitals are now offering a more definitive TAVI treatment to these urgent patients, often performed during the initial hospital admission. This avoids a patient having to go on a waiting list for a future elective treatment.

There is, though, **considerable variation** between hospitals in the use of urgent TAVI procedures. They accounted for half of all TAVI cases in some hospitals and were not performed at all in others.

Length of stay following TAVI procedure has reduced

The length of stay (LOS) for elective TAVI patients **has fallen considerably** in recent years. The average LOS was 3 days, with some patients having only one night in hospital.

For urgent TAVI patients, the average time to discharge after their TAVI procedure is one day. Prior to the TAVI procedure there is a necessary preparation time in hospital which would not differ significantly for other treatment options.

Minimal complications following TAVI procedures

Being less invasive, TAVI procedures generally benefit from low rates of complication and **fewer than 2%** of patients suffered major complications.

Mortality rates also continue to fall and were 0.6% for elective cases and 1.5% for urgent procedures.



Useful resources:

[British Heart Foundation](#)

[NHS: Aortic valve replacement](#)





Transcatheter Mitral and Tricuspid Valve (TMTV) Registry

The Transcatheter Mitral and Tricuspid Valve (TMTV) registry covers all transcatheter procedures relating to the mitral and tricuspid valve (refer to the Introduction to the Heart diagram page 10).

The most established intervention at present is Mitral Transcatheter Edge to Edge Repair (TEER) for the treatment of mitral regurgitation for patients who are too high risk for open heart surgery or where surgery is not recommended. Twenty-one hospitals across England are commissioned by NHS England to perform mitral transcatheter edge-to-edge repair TEER procedures.

Other technologies and procedures are delivered by some hospitals, though at a smaller, more variable level across the country and often as part of research studies. The registry therefore also includes tricuspid transcatheter edge to edge repair, 'TAVI-in-Mitral' and further novel procedures such as transcatheter mitral or tricuspid valve replacement whereby a prosthesis is implanted in the mitral and tricuspid positions respectively.

The registry also enables national data capture of niche procedures that have been performed for longer periods at generally low volume such as balloon mitral valvuloplasty (balloon stretching of the mitral valve) for rheumatic mitral stenosis, and percutaneous paravalvular mitral and tricuspid leak repair (device closure of leaks around previously implanted cardiac surgical prosthetic valves).

The Transcatheter Mitral and Tricuspid Valve (TMTV) Registry 2024 report highlights the fact that, as hospitals start to use these new procedures, it is essential to report these, and their outcomes, to the registry. Data collection has recently started and useful analysis will follow. For patients who undergo open heart or minimally-invasive surgical (as opposed to transcatheter) procedures, data are available from the National Adult Cardiac Surgery Audit (NACSA) (2022/23 data for England, Wales and Northern Ireland unless otherwise stated). Some useful data from NACSA are provided below.

Fewer patients with mitral valve disease have received surgical treatment

There was a total of just under 3,000 mitral valve (MV) surgical procedures (both replacements and repairs and whether done in isolation or in conjunction with CABG). This was **25% lower** than in 2019/20. This reduction had been happening for some time but was certainly accelerated by the COVID-19 pandemic. It is also not likely to be the result of newer catheter-based interventions. The number of these procedures in the UK is currently very low and are largely intended for patients who are not suitable for surgery.

Mitral valve repairs are performed less often than expected

It is recommended that most patients whose degenerative MV disease results in a leaky valve (as opposed to a narrowed valve) should have the valve repaired rather than replaced. However, the proportion of MV repairs relative to replacements has **fallen**, even though many patients with degenerative MV disease are deemed eligible for this.

Again, there is **considerable variation** between hospitals in the rate at which repairs are undertaken relative to replacements.



Useful resources:

[NHS: Mitral valve problems](#)

Other sources of information

A recent article published by the British Heart Foundation (BHF) in March 2024, in response to NHS England figures, shows the number of people on a cardiac waiting list is 75% larger than in February 2020. An increase of 174,980 people – almost enough people to fill Wembley stadium twice over.

There was a decrease in the number of people waiting over 4 months for treatment at the end of January 2024. However, over a third (40%) of all people on waiting lists for cardiac care are waiting over the 18-week target for care.

Dr Charmaine Griffiths, Chief Executive at British Heart Foundation, said:



The heart care waiting list continues to rise despite overall waiting lists falling, an unacceptable trend that shows how so many heart patients are enduring long waits for treatment. But heart care can't wait - significant delays to cardiac care can lead to avoidable heart attacks, disabling heart failure and even premature death.



Tragically, as we reported in January, the extreme and ongoing pressures on NHS heart care is likely one of several factors contributing to nearly 39,000 premature deaths involving cardiovascular disease in England in 2022. We need to see bold action to prioritise NHS heart care and ease the agonising waits patients are facing.

Source: [British Heart Foundation: Heart care waiting list rises again, bucking overall trend](#)

In June 2023 the BHF published ['Excess deaths involving cardiovascular disease: an analysis'](#), the analysis looks at the number of excess deaths (nearly 100,000) in England involving cardiovascular disease since the start of the COVID-19 pandemic. Their analysis looks at this in more detail.

Key findings in the analysis:

- As of June 2023, there have been nearly 100,000 excess deaths in England involving CVD since the beginning of the pandemic
- On average, there have been over 500 additional deaths a week involving CVD since the pandemic began
- While deaths from COVID-19 have fallen year-on-year since the beginning of the pandemic, the number of deaths involving CVD have remained high above expected levels
- Excess deaths involving CVD outnumber those involving all other individual disease areas since the beginning of the pandemic in England.

The Patients Association's latest survey of patients' experiences of healthcare, ['patient experience winter survey'](#) published in March 2023, shows that when patients are with a healthcare professional their experience is generally positive. However, it also shows many respondents struggled to access the healthcare they needed.

Useful resources

Support for carers

Carers have a fundamental role in the lives of patients living with a heart condition and their contribution is invaluable to patients' wellbeing. Here are some sources of advice and support:

[NHS: Introduction to care and support](#)

[Carers Trust](#)

Mental health

Mental health issues go hand in hand with life changing health events. Post-traumatic stress disorder (PTSD), anxiety and depression can seem overwhelming but there is support available:

[NHS talking therapies](#)

[Samaritans](#)

[Mind](#)

[British Heart Foundation: Heart matters magazine – Mental Health, coping with anxiety and depression](#)

Shared decision making

Patients are encouraged to discuss the pros and cons of the treatment that a doctor has recommended. The advantage of this is to consider the patient's concerns and their overall situation, rather than just focusing on the medical issues. Sometimes what a doctor or nurse thinks is best for the patient can differ from what the patient wants. The decision-making process is a two-way dialogue, so it is 'shared'.

[NHS England: Shared decision making](#)

[National Institute for Health and Care Excellence \(NICE\): Shared decision making](#)

Learn CPR

St John Ambulance provides instruction on CPR on an [adult](#) and [child](#).

Where is my nearest public defibrillator (AED)?

The Circuit is the national defibrillator network which maps defibrillators across the UK, providing NHS ambulance services with vital information so that in those crucial moments after a cardiac arrest, they can be accessed quickly to help save lives. The Circuit works in partnership with the British Heart Foundation (BHF), the Resuscitation Council UK and St John Ambulance. The [Defib finder](#) will show you defibrillators close by.

A defibrillator registered on [The Circuit](#) could make the difference between life and death. There are an estimated 100,000 defibrillators across the UK. However, tens of thousands of these are unknown to ambulance and emergency services. Once located and registered, emergency services can direct bystanders to their nearest defibrillator and increase a person's chance of survival.

Since the launch, The Circuit has helped map over 50,000 defibrillators in the UK. Find out more and how to register your defibrillator.

Another option is the [HeartSafe website](#), which has a map of defibrillators in the UK.

What can I do to keep my heart healthy?

The [British Health Foundation \(BHF\) Heart Matters magazine](#) is a comprehensive and engaging resource for healthy lifestyle tips and personal stories about living with heart conditions. You can subscribe via the BHF website.

The [NHS Live Well](#) page offers advice about healthy living, including eating a balanced diet, healthy weight, exercise, quitting smoking and drinking less alcohol.

Guide to useful apps for managing your heart health

We live in an increasingly online world. Smartphone and other online apps can help us navigate the bewildering amount of online support and advice out there. This guide is not meant to be prescriptive; it is intended to give you ideas about how you can use free online tools to help keep your heart healthy or manage an existing condition. In addition to the free apps suggested, you may be eligible in your local area for a range of digital health monitoring programmes involving home self-testing tools such as electronic blood pressure cuffs, or there are paid options for managing cardiac rehabilitation at home. Please consult your doctor before starting a new exercise regime or changing your diet.

For more details, we published a [useful guide in 2020](#) to the many apps available to help you live with a heart condition or improve your health.

NICOR A-Z Glossary

To view NICOR's A-Z Glossary, visit the [website](#).





Thanks and acknowledgements

This report was written by Sarah Colston, Senior Communications Manager at NHS Arden & GEM with support from NICOR Community Representative Group chair, Sarah Murray, Richard Corder and Richard Mindham as patient co-writers, and with support from the NCAP team, with graphic design by NHS Arden and GEM's Creative, Campaigns and Digital team.



National Institute of Cardiovascular Outcomes Research (NICOR)

NICOR is a partnership of clinicians, IT experts, statisticians, academics and managers who are responsible for the National Cardiac Audit Programme (NCAP) and several health technology registries, including the UK TAVI registry. Hosted by Arden & GEM CSU, NICOR collects, analyses and interprets vital cardiovascular data into relevant and meaningful information to promote sustainable improvements in patient well-being, safety and outcomes. NICOR is funded by NHS England and the GIG Cymru (NHS Wales).

Email: nicor.auditenquiries@nhs.net



NHS Arden and GEM

NHS Arden & GEM works across England's health and care sector to provide a range of services, including procurement and contracting, service transformation, business intelligence, business support and clinical support. Its ability to draw upon expertise from over 1000 staff working in multidisciplinary teams enables the CSU to help healthcare commissioners and providers navigate and implement the change needed to improve patient care and outcomes. Arden & GEM's clients include more than 70 customers, including Integrated Care Boards, NHS England, Integrated Care Systems, Primary Care Networks, NHS provider trusts and local authorities.



NHS England

[NHS England](#) leads the National Health Service (NHS) in England. NHS England provides national leadership for the NHS. Through the [NHS Long Term Plan](#), we promote high-quality health and care for all and support NHS organisations to work in partnership to deliver better outcomes for our patients and communities at the best possible value for taxpayers and to continuously improve the NHS. We are working to make the NHS an employer of excellence and to enable NHS patients to benefit from world-leading research, innovation and technology.



GIG Cymru (NHS Wales)

[NHS Wales](#) is the publicly funded National Health Service of Wales, providing healthcare to some 3 million people living there. The Welsh Government sets the Health Care strategy, and NHS in Wales delivers that strategy and services via the 7 Local Health Boards, 3 NHS Trusts and 2 Special Health Authorities. The NHS has a key principle: good healthcare should be available to all.



National Cardiac Audit Programme

**2024 Annual Report for Patients,
Carers and the Public**