

Heart valve disease

Improving patient care

The prevalence of heart valve disease is rising as life expectancy continues to increase. The management of heart valve disease is complex and several limitations in current clinic practice exist, such that better ways of organising care are needed. At Guy's and St Thomas' Hospitals, Consultant Cardiologists Prof John Chambers, Dr Ronak Rajani and Dr Julia Grapsa have pioneered a multidisciplinary specialist valve clinic to improve patient outcomes by delivering expert care, accurate diagnosis and timely referral for intervention.

The incidence of heart valve disease increases significantly with age. As life expectancy continues to improve, the prevalence of heart valve disease is therefore expected to rise – in the UK the prevalence is expected to double from 1.5 million cases now to 3.3 million in 2056. This new 'cardiac epidemic' is set to produce a major societal and economic burden.

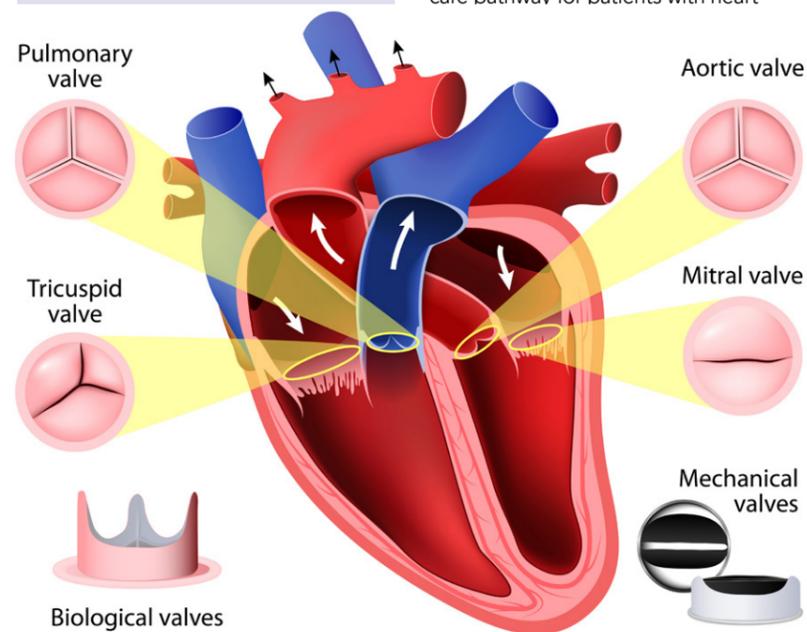
Currently, there is no pharmacological treatment to prevent or slow the progression of heart valve disease. The only therapy which can significantly improve both survival and symptoms is valve surgery or, if this is impossible, a transcatheter procedure. Patient outcome and management of the disease is dependent upon appropriate and timely diagnosis, referral, and intervention. However, limitations exist in standard routine clinical care such that a significant proportion of patients are referred for intervention too late or not at all. There is a need for an improved care pathway for patients with heart

valve disease and a growing consensus that specialist valve clinics will improve care and reduce costs. At Guy's and St Thomas' Hospitals, Prof John Chambers, Dr Ronak Rajani and Dr Julia Grapsa have established a specialist valve clinic with multidisciplinary involvement from cardiologists, nurses, imaging specialists and clinical scientists. Specialist valve clinics offer an integrated care pathway to improve outcomes for patients with heart valve disease.

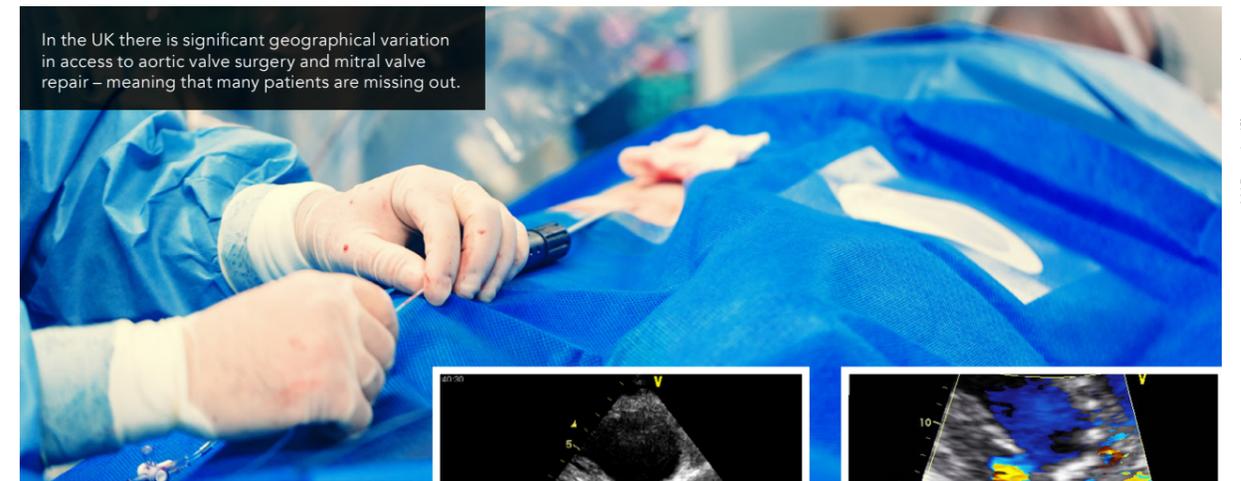
LIMITATIONS IN CURRENT CARE

A number of limitations exist in the current management of heart valve disease. Firstly, there is a low awareness of the frequency and importance of valve disease in the population such that heart valve disease is commonly underdiagnosed. In the OxVALVE community study, moderate or severe valve disease was known in 4.9% of people aged over 65 years of age but was newly detected in a further 6.4% by population screening. Furthermore, approximately 50% of cases of severe aortic stenosis – a disease causing stiffness and narrowing of the aortic valve – are only detected at post-mortem.

Secondly, the assessment and management of heart valve disease is becoming increasingly complex, yet many patients with heart valve disease are still cared for by general physicians or cardiologists without specialist expertise. Assessment of the disease can be difficult for physicians or cardiologists who may be less skilled in making a diagnosis than a valve disease specialist, especially in determining whether a patient is truly asymptomatic. The decision to operate for coexistent mitral regurgitation (an incompetent or leaky mitral valve such that there is the backward flow of blood through the heart) or the advisability of replacing

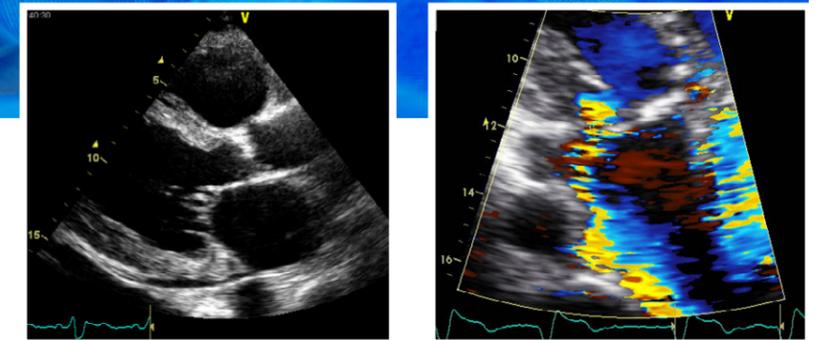


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In the UK there is significant geographical variation in access to aortic valve surgery and mitral valve repair – meaning that many patients are missing out.

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The two most common valve diseases are aortic stenosis (left) and mitral regurgitation (right).

It is well recognised that the organisation of clinical care for patients with heart valve disease is suboptimal.

poor for the elderly, at least 30% of whom are not referred even when clinically indicated.

Lastly, there is a tendency to see valve disease as being dominated by transcatheter procedures for aortic stenosis. This is because this technique is evolving rapidly and is also expensive. Naturally this ensures that it features prominently in the popular press and

dominates governmental discussions. However, there are many other types of valve disease like mitral regurgitation. Most types of valve disease need to be followed for years before needing intervention either by surgery or a transcatheter procedure. It is important not to forget these and the even larger number waiting in the community still to be detected. This is called the 'valve disease pyramid'. One of the reasons for founding the British Heart Valve Society was to ensure that all patients had a professional advocate.

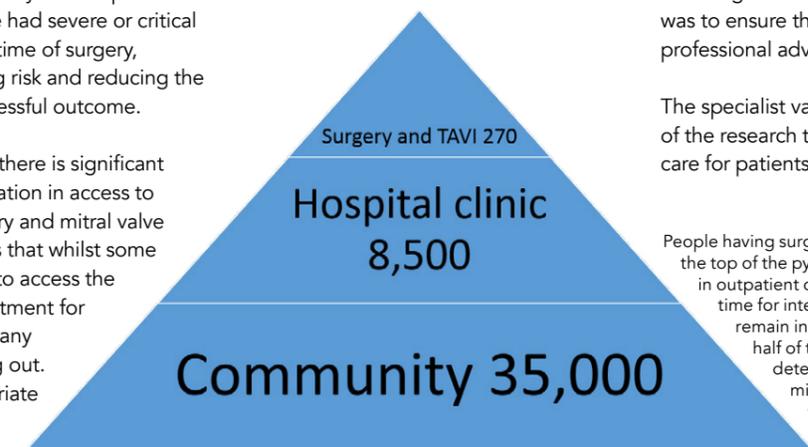
The specialist valve clinic is at the core of the research team's efforts to improve care for patients with valve disease. It

People having surgery are a small minority at the top of the pyramid. Many more are seen in outpatient clinics awaiting the correct time for intervention and more still remain in the community – at least half of them without even being detected. Numbers are per million population for 2016, which is the most recent year full statistics are available.

an aortic valve with mild or moderate stenosis at the time of coronary bypass grafting is also frequently difficult. The assessment of valve disease involves integration of multiple modalities, and advances in practice are likely to be more slowly assimilated by a generalist than a cardiologist with specialist expertise. Patients with heart valve disease often have comorbidities which can contribute to symptoms and thereby complicate the decision if and when intervention is indicated. Determining the correct procedure, whether repair, replacement or transcatheter procedure, is not straightforward and requires expertise, experience and multidisciplinary discussion.

Thirdly, accepted management guidelines are often not known or are not followed adequately. Approximately one third of patients with aortic stenosis are not referred for intervention at the appropriate time even when clinically indicated. According to the EuroHeart survey, approximately 50% of patients with valve disease had severe or critical symptoms at the time of surgery, thereby increasing risk and reducing the likelihood of successful outcome.

Fourth, in the UK there is significant geographical variation in access to aortic valve surgery and mitral valve repair. This means that whilst some patients are able to access the best possible treatment for their condition, many others are missing out. Access to appropriate intervention is particularly





Heart valve disease is commonly underdiagnosed.

has the potential to circumvent all the issues discussed.

SPECIALIST VALVE CLINICS

For the past two decades, the team at Guy's and St Thomas' Hospitals has aimed to build specialist competencies and standards to improve care for patients with heart valve disease.

Heart valve clinics ensure that patients are cared for by cardiologists and other healthcare professionals with specialist knowledge and experience to improve care. The medical aims of a heart valve clinic are to improve patient outcomes by providing accurate diagnosis of heart valve disease, then monitoring at appropriate intervals, ensuring referral to a specialist surgeon or interventional cardiologist at the correct time, and finally, assessing outcome following surgery. For cases that are complex or deviate from guidelines, valve clinics enable discussion and additional support within a multidisciplinary team including allied healthcare professionals. Particular importance is placed on educating patients about valve disease and the management of their condition. The wider roles of a valve clinic involve training of cardiologists and other physicians in specialist valve disease, keeping colleagues up to date with developments within the field, developing specialist imaging services and fostering links with the community to improve detection, and care of valve disease.



The team at Guy's and St Thomas' Hospitals is building specialist competencies to improve patient care.

A HOLISTIC APPROACH

The key to service delivery is to ensure that every discipline and service involved has valve expertise. All involved disciplines need to develop and maintain specialist competencies in valve disease. This improves adherence to recommended guidelines concerning investigation, follow up and intervention, leading to earlier recognition of symptoms and improved patient outcomes. The British Heart Valve Society (BHVS) has produced a consensus document on service delivery (<https://www.bhvs.org.uk/bhvs-blueprint/>) that sets standards

Specialist valve clinics offer an integrated care pathway to improve outcomes for patients with heart valve disease.

for individuals and departments and has published a nationally agreed core syllabus for valve disease (<https://www.bhvs.org.uk/syllabus/>). Together, they provide a useful framework to inform the training of clinicians wanting to specialise in heart valve disease. The BHVS is also establishing a register of people with specialist competencies to inform patients and commissioners of services.

The valve clinic enables patients to be educated about the nature and management of their condition through discussion and the provision of information over many visits before intervention. Patient empowerment through education is vital for the early identification of symptoms and to allow

fully informed decision making about the type and timing of intervention.

Specialist valve clinics are an ideal situation for research and innovation, enabling the design of research studies and identification of patients for future research from a pool of patients that are followed regularly according to strict protocols.

Specialist valve clinics are embedded within a heart valve centre which are defined by strict standards of facilities and processes to ensure that patients are referred for intervention at the optimal time.

The need to coordinate care at valve clinic, heart valve centre and the community has led to the concept of a valve care network which is the organisational mechanism to link district or local hospitals and heart valve centres with the community, keeping the interests of the patient of paramount importance at every level of care.

SUMMARY

It is well recognised that the organisation of clinical care for patients with heart valve disease is suboptimal with wide variations in access to appropriate medical care and surgery. The specialist valve clinic established at Guy's and St Thomas' Hospitals offers an integrated care pathway which aims to reduce under-treatment, improve detection and awareness of heart valve disease, reduce costs and ultimately improve patient outcomes.

Behind the Research



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Research Objectives

Prof Chambers, Dr Rajani and Dr Grapsa are aiming to improve care for patients with heart valve disease.

Detail

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Bio

John Boyd Chambers is Professor of Clinical Cardiology. He founded the valve study group at Guy's and St Thomas' Hospitals and became the first president of the British Heart Valve

Society. He pioneered multidisciplinary specialist valve clinics for improved research and service delivery.

Ronak Rajani is a consultant cardiologist in heart valve disease and advanced cardiac imaging. He is also a Reader (Associate Professor) in Cardiovascular Imaging at King's College London. He has a specialist interest in monitoring and managing patients with heart valve disease and runs a specialist clinic for patients with

mitral valve disease who are high-risk for surgical repair or replacement.

Julia Grapsa is a consultant cardiologist at Guy's and St Thomas' NHS Trust. She is also editor in chief for JACC Case Reports, an associate editor for JACC as well as a member of the publications committee for American College of Cardiology. Dr Grapsa's areas of research include heart valve disease and the study of right heart remodelling.

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Personal Response

Although multidisciplinary valve clinics are seen as the 'gold standard' and there is an evolving evidence base that these clinics work, what more is needed for the widespread adoption of such services?

It is important that networks of care are established, binding general practitioner, district hospital and cardiac centre together with the patient as the focus. This requires an IT structure guaranteeing excellent communication at every level and a general dissemination of core competencies in the care of valve disease.

