

# **An Introduction to Cardiology**

**Dr. Bridie O'Neill; Dr Mark Hargreaves**

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Cardiology is an exciting and highly competitive branch of medicine which is concerned with the identification, assessment and management of diseases affecting the heart and blood vessels. Therefore, an in-depth knowledge of the pathological processes and cardiovascular physiology and pharmacology are required for those wishing to proceed in this rapidly evolving speciality.





# WJMER

World Journal of Medical Education and Research

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## In this edition, these topics and more....

Stroke Prevention in Patients with  
Atrial Fibrillation

Should Society Take Precedence Over Individuals and Do  
Scientists Need More Autonomy In Our Modern NHS?

Abstracts from the International Academic & Research Conference

Follow-up Chest X-ray Following  
Regression of Community Acquired Pneumonia

An Introduction to Cardiothoracic Surgery

Elective Opportunities in Lebanon

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## An Introduction to Cardiology

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### Introducing Cardiology...

Cardiology is an exciting and highly competitive branch of medicine which is concerned with the identification, assessment and management of diseases affecting the heart and blood vessels. Therefore, an in-depth knowledge of the pathological processes and cardiovascular physiology and pharmacology are required for those wishing to proceed in this rapidly evolving speciality.

Cardiology is at the very forefront of cutting-edge research. This is especially true for interventional cardiologists where increasing numbers of new techniques are becoming available for the treatment of cardiac diseases, such as coronary artery stenting and percutaneous valve replacement.

### Life as a Cardiologist

The variety in the cardiology workload ranges from highly acute, life-threatening illnesses such as myocardial infarctions and dangerous cardiac arrhythmias, to chronic diseases such as cardiac failure. Likewise, cardiology encompasses all ages from pre-natal management to the provision of end-of-life care.

Due to the wide variety of patients seen in this speciality, the workload of the cardiologist is highly dependent on the type of services provided by a centre and the specialist interests of that individual. Many cardiologists will sub-specialise, with some of the largest areas including congenital heart disease, interventional cardiology, heart failure, cardiac devices, electrophysiology and cardiac imaging. In larger centres, there may be opportunities to further sub-specialise within a sub-specialty.



The amount of elective and emergency work varies depending on the centre and sub-specialisation. With current NICE recommendations stating that ST-elevation myocardial infarctions should undergo primary percutaneous intervention, interventional cardiologists in an acute centre should expect to do increasing amounts of on-call. This is in comparison to electrophysiologists, who may find their on-call workload slightly less demanding.

A typical day is likely to vary in accordance with an individual job plan but cardiologists are involved with acute take of cardiology emergencies, out-patient clinics and in-patient reviews. It should be noted that cardiologists do not work alone and must liaise within a multi-disciplinary team, including cardiac physiologists, nurses, cardiac surgeons, anaesthetists and GPs in order to maximise patient management.

Despite the large workload, cardiology can be a highly rewarding speciality which enables doctors to make a marked difference to patients' mortality and quality of life.

#### Facts and Figures

Candidates for ST3 cardiology must first complete two years of core medical training or acute care common stem, during which time they must pass their membership examinations for the Royal College of Physicians.

ST3 competition for cardiology is the highest of any medical speciality with 6.46 applicants to each post in 2011. Due to the high level of competition, it is sometimes recommended that potential applicants should do a higher post graduate degree such as an MD or PhD.

From ST3-ST5 cardiology trainees are required to obtain the core competencies as part of teams at both district general hospitals and specialist centres e.g. echocardiography, cardiac catheterisation and pacing. Trainees may also elect to train in cardiology and general internal medicine combined and provision is made for this in the training programme.

ST6-ST7 trainees will undertake general cardiology work in conjunction with advanced specialist modules of their choice. This includes options such as Interventional Cardiology, Electrophysiology, Non-invasive Imaging, Adult Congenital Heart Disease or Heart Failure.

#### The Future

The continuing emergence of new catheter technologies continues to move cardiology in to a new age. NICE is in the process of assessing a new technique to treat aortic stenosis which involves trans-catheter aortic valve implantation. This new procedure would allow patients who are at too much risk to undergo surgery, to receive vital treatment for a condition that would otherwise impact significantly on the patient's quality of life.

Advancement in the field of heart failure management including technological advances in implanted cardiac devices and mechanical assistance devices will undoubtedly benefit the growing number of elderly people suffering from cardiac failure. We also look forward to the exciting new research into cardiac cell therapy in the form of cultured autologous myoblasts injections into the myocardium and the use of autologous bone-marrow derived stem-cells. The continuing quantum leaps in cardiology make this speciality perhaps one of the most enticing areas in the medical profession to pursue.



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The World Journal of Medical Education and Research (WJMER) is the online publication of the Doctors Academy Group of Educational Establishments. It aims to promote academia and research amongst all members of the multi-disciplinary healthcare team including doctors, dentists, scientists, and students of these specialties from all parts of the world. The journal intends to promote the healthy transfer of knowledge, opinions and expertise between those who have the benefit of cutting edge technology and those who need to innovate within their resource constraints. It is our hope that this will help to develop medical knowledge and to provide optimal clinical care in different settings all over the world.

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