



SCHOLARSHIP REPORT

This report should be completed by recipients of awards and scholarships from the Royal College of Physicians and Surgeons of Glasgow on completion of the activity for which they received their award or scholarship. Please complete all sections of the report form.

Please return your completed report via email to: scholarships@rcpsg.ac.uk

Or via mail to: **Scholarships Committee Administrator, Royal College of Physicians and Surgeons of Glasgow,
232-242 St Vincent Street, Glasgow G2 5RJ, UK**

Please use typeface when completing this form.

SECTION 1 PERSONAL AND AWARD DETAILS			
Title	Miss	PID	
Surname	Nguyen	Forename(s)	Anita
Scholarship/award awarded	Medical Elective Award	Amount awarded	£1000

SECTION 2 PROJECT/VISIT DETAILS	
Name/Title	Cardiac Surgery
Location	California, US
Aims and objectives	<ol style="list-style-type: none">Describe the pattern of disease/illness of interest in the population with which you will be working and discuss this in the context of global health<ul style="list-style-type: none">- Describe the pattern of cardiovascular disease in the USA, and especially California- Are there any cardiovascular diseases that are particularly prevalent in the US population?- Are the disease patterns of cardiovascular disease in the USA similar to the UK?Describe the pattern of health provision in relation to the country which you will be working and contrast this with other countries, or with the UK<ul style="list-style-type: none">- Describe the way the healthcare system is organised in the US- Compare the US healthcare system to the NHS in the UK- Describe how cardiothoracic surgery is provided in the US- Does the provision of cardiothoracic surgery in the US differ from the UK?Health related objective<ul style="list-style-type: none">- Describe the common diseases treated with cardiothoracic surgery in the US- Describe the management of these conditions- Are there any differences in the management of these conditions between the UK and the US?- Are there any cardiothoracic procedures that are performed in the US, but not the UK and vice versa? If so, discuss why.Personal/professional development goals<ul style="list-style-type: none">- To observe clinical practice in cardiothoracic surgery in a high-resource country

	<ul style="list-style-type: none"> - To observe the differences in the healthcare systems in the UK and US - To revise the cardiovascular system in a clinical context - To learn about the conditions treated with cardiothoracic surgery in the US - To participate in a clinical (or basic science) research project or an audit in cardiothoracic surgery
<p style="text-align: center;">Summary</p> <p><i>Include methodology, results and conclusions if applicable</i></p>	<p>I spent seven weeks on elective at the department of cardiac surgery at Stanford University. During this time, I was able to observe many interesting cases and procedures in the OR at Stanford that I had not encountered before. I was also able to attend rounds in ICU and on the floor (ward) and take histories in clinics. It was particularly interesting to observe different attendings both in the OR and clinics and learn from some of the world's best cardiac surgeons.</p> <p>My clinical experience here at Stanford has been very diverse and incredibly educational. I was able to follow patients from their pre-op assessments in clinic to their operations, as well as observe their hospital course post-operatively on the floor. I was able to participate in many clinical activities, such as taking histories, presenting patients to residents and attendings at rounds and clinics and helping PAs with their tasks on the floor.</p> <p>Furthermore, I also participated in a surgical skills course for medical students at Stanford, which gave me the chance to practice and enhance some of the essential surgical skills.</p>
<p style="text-align: center;">Learning outcomes</p> <p><i>Detail here how the aims and objectives were met</i></p>	<p>1. Describe the pattern of cardiovascular disease in the USA, and especially California. Are there any cardiovascular diseases that are particularly prevalent in the US population? Are the disease patterns of cardiovascular disease in the USA similar to the UK?</p> <p>The pattern of cardiovascular disease in the US is very similar to the pattern of cardiac disease in the UK. According to the Center for Disease Control (CDC), heart disease is the leading cause of death in the US. More than 600,000 Americans die from heart disease every year which equates to 1 in every 4 deaths attributable to cardiovascular disease. The most common cardiovascular pathology is coronary artery disease (CAD) – it is the leading cause of death in the US with an annual death rate estimated at almost 400,000. The high incidence of CAD might be explained by the high prevalence of risk factors such as hypertension, hyperlipidaemia, smoking, diabetes, obesity, diets high in salt and fat, low exercise levels and high alcohol consumption.</p> <p>In California, heart disease is also the leading cause of death, but the incidence of cardiovascular disease in California is lower than in other US states.</p> <p>In the UK, heart disease causes more than 150,000 deaths each year, which is very similar to the rate of 1 in 4 deaths observed in the US. Coronary heart disease is also the most common aetiology and causes almost half (70,000) of the annual deaths attributed to heart disease. In the UK, the most important risk factors for cardiovascular disease are diabetes, hypertension and hyperlipidaemia. Modifiable risk factors such as smoking, physical inactivity and poor diet also contribute significantly to the high incidence of cardiovascular disease in the UK.</p> <p>In summary, heart disease is the leading cause of death in the US and the UK. The most</p>

common cardiovascular disease in both countries is CAD, with a comparable incidence and aetiology in both countries.

2. (i) Describe the way the healthcare system is organised in the US. Compare the US healthcare system to the NHS in the UK.

The American healthcare system is organised very differently to the National Health System (NHS) in the UK. In America, the entire healthcare system is insurance-based, with each individual responsible for acquiring their own insurance. Most people will acquire insurance through their employer and some groups of patients qualify for state funded insurance: Medicare for the elderly and Medicaid for people on low income and with limited resources. However, this means that some patients are left without any insurance as they do not qualify for Medicaid but cannot afford to pay for their own private insurance. As a result, these patients are not able to access healthcare unless in emergency situations and secondary/tertiary services, such as cardiac surgery, are not accessible for these patients. The issue of individuals being uninsured and thus not able to access healthcare at all has been widely debated, and it is hoped that the introduction of Obamacare might fill some of the gaps in the US insurance system.

The American healthcare system stands in stark contrast to the NHS in the UK, which is a universal healthcare system. Similar to the US, the NHS provides free healthcare to all individuals (regardless of nationality and residency) in emergency situations. However, the NHS also provides universal healthcare to all individuals who qualify based on citizenship status and/or residency requirements. This means that there are no UK residents who are unable to access healthcare, as is the case for US residents without insurance. However, even in a universal healthcare system such as the NHS, there are differences in the quality of care that individuals receive. A commonly cited example is the provision of IVF as a treatment for subfertility, which is highly dependent on where the patients live and which primary care consortium serves their area.

2 (ii) Describe how cardiothoracic surgery is provided in the US. Does the provision of cardiothoracic surgery in the US differ from the UK?

Cardiothoracic surgery at Stanford Hospital is unique as Stanford is a tertiary referral hospital. It accepts patients from all over California (and beyond) – most of the patients referred to Stanford Hospital are extremely complex and need very specialised care.

Furthermore, many elective patients choose Stanford Hospital even if it is not conveniently located for them – this is because of the excellent reputation that Stanford Hospital has. Elective patients are referred to a cardiac surgeon by their cardiologist, which is exactly the same way that UK patients would access a tertiary services such as cardiac surgery. Patients will see their attending (consultant) in clinic who will discuss treatment options, risks etc. with them. If the patient agrees to have surgery, they will usually be listed within the next 1-2 week. This is a vast difference to the UK, where elective surgery waiting list can approach anything from 3-6 months.

I was incredibly impressed with the clinic experience here at Stanford, where attendings have much more time to spend with the patients as they do not have as many patients to see. Furthermore, I was very surprised to see how quickly sick patients can have their surgeries scheduled here in the US – in the UK this would not be possible, and the long waiting lists are one of the most frustrating experiences for both patients and surgeons.

3. Describe the common diseases treated with cardiothoracic surgery in the US. Describe the management of these conditions. Are there any differences in the management of these conditions between the UK and the US? Are there any cardiothoracic procedures

that are performed in the US, but not the UK and vice versa? If so, discuss why.

The most common cardiovascular diseases that I have encountered during my elective are: coronary artery disease, valvular diseases (aortic and mitral valve) and aortic diseases (aortic aneurysms and dissections).

The treatment of these conditions here at Stanford Healthcare is very similar to the treatment in the UK. Severe CAD is typically treated with PCI or CABG surgery. When I observed CABG surgeries here at Stanford, the only difference I noticed was the vein harvesting, which is only done endoscopically. In the UK, vein harvesting is still mostly carried out through the open approach, leaving big scars for the patient. Although this does not result in any better outcomes, the patients might prefer the endoscopic approach due to its better appearance.

In terms of valvular diseases, Stanford University is world-renowned for its expertise, especially in mitral valve disease. A lot of mitral valve surgery is conducted through a minimally invasive approach, which was fascinating to see. Again, the patients that I saw were extremely happy with their results and were very much in favour of the minimally invasive surgeries due to its smaller scars.

My experience of observing aortic diseases in the UK was very limited, so it was very educational to see a number of aortic procedures here at Stanford (e.g. aortic root replacements, aortic arch replacements, TEVAR).

4. (i) To participate in a clinical (or basic science) research project or an audit in cardiothoracic surgery

I participated in a small research project investigating the incidence of aortic dissection in Northern California and its associations with seasonal, temporal and meteorological factors.

4. (ii) To identify interesting/unusual cases

I saw a number of interesting and unusual cases during my time at Stanford. One of the more memorable ones was a gentleman who presented with a pseudoaneurysm of the ascending aorta/aortic root. He had a history of aortic valve replacement with a tissue valve two months prior and now presented with severe chest pain, confusion, agitation and intermittent fevers. On examination the patient was febrile, with all other vital signs stable. CT angiogram showed an extensive pseudoaneurysm of the aortic root, measuring 5.6 x 6.4cm. At operation, the sternum was opened very carefully as the pseudoaneurysm was situated just beneath the sternum. It looked necrotic, as well as being extensive in size. After putting the patient on cardio-pulmonary bypass and deep circulatory arrest, the pseudoaneurysm was removed. The tissue valve was excised showing almost complete blockage by a thrombus. The aortic root was replaced and a new tissue valve was sewn into the graft. The patient's mitral valve was also repaired at surgery.

The patient's post-operative course was complicated by developing seizures whilst on ICU and a resulting subdural haematoma. Post-operative microbiology of the excised tissues showed that the valve and aneurysm were colonised with *Rhizopus*, a very rare fungal infection. A definitive diagnosis of fungal endocarditis was made. Although the patient remained stable in ICU at the time I left Stanford, the prognosis for fungal endocarditis is very poor.

<p>Evaluation</p> <p><i>How has this scholarship/award impacted on your clinical/NHS practice or equivalent?</i></p>	<p>I had a fantastic time on elective in Stanford and it reinforced my desire to pursue cardiac surgery as a career. I definitely enjoyed all aspects of my elective here at Stanford Hospital and gained a better understanding of the American healthcare system. Some of the highlights of my stay were being able to participate in several donor transplant procurements and participating in an exciting research project.</p>
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SECTION 3 | IMAGES

If available, please provide some images to support your report

SECTION 4 | EXPENDITURE

<p>Breakdown of expenditures</p> <p><i>Please demonstrate how the scholarship/award funding was used to support your project/visit</i></p>	<p>Flights £500</p> <p>Transport £100</p> <p>Accommodation £2000</p> <p>Food £500</p> <p>Other (insurance, phone) £100</p> <p>Total £3200</p>
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SECTION 5 | PUBLICATION

<p>Scholarship/award reports may be published in College News. Please tick here if you agree to your report being published.</p>	<p><input checked="" type="checkbox"/> I give permission for my report to be published in College News</p> <p><i>If your report is selected for publishing, the editor of College News will be in touch to discuss this with you.</i></p>
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