



## Edinburgh University Student SSC/Project Report

Supervisor and position	Dr. Kausik Bhattacharya, Specialist Registrar in Cardiothoracic Surgery, RIE.
Contact details of your supervisor	kausikbhatta@hotmail.com
Hospital/unit/clinic	Cardiothoracic Department, RIE
Topic (rough topic area, e.g. Orthopaedics)	Cardiac Surgery
Title of Project	SOCIAL DEPRIVATION, NOSOCOMIAL INFECTIONS AND CORONARY ARTERY BYPASS GRAFTING.
Authors	Kumar, Sunjay <sup>1</sup> ; Banavathi, Krishna <sup>2</sup> ; Howlett, Jackie <sup>1</sup> ; Prasad, Sai <sup>1</sup> ; Mankad, Pankaj <sup>1</sup> ; Bhattacharya, Kausik <sup>1</sup>  <sup>1</sup> Cardiothoracic Surgery, RIE. <sup>2</sup> Microbiology, RIE.
Please give an overview of what your research was on(200 words max)	<p><b>Introduction:</b> Nosocomial infections blight the success of all surgical procedures and increase the burden on finite health resources. The aim of this study was to assess whether social deprivation influenced nosocomial infection rates following coronary artery bypass grafting (CABG).</p> <p><b>Methods:</b> Demographic and perioperative data was collected prospectively on all patients undergoing first time CABG over 5 years and analysed retrospectively. Deprivation was measured using the Carstairs Score and the Scottish Indices of Multiple Deprivation (SIMD). Proven nosocomial infections were collected from the microbiology database.</p> <p><b>Results:</b> 432 of 2535 studied patients (17%) acquired 17 microbiologically identified infective organisms from 9 different sites. Patients who acquired a nosocomial infection had a significantly higher mortality rate: 3.7% vs. 1.3% (p&lt;0.01). The deprivation scores between patients with and without nosocomial infections were: Carstairs; -0.58 vs. -1.13, (p&lt;0.01), SIMD; 17.13 vs. 15.55, (p&lt;0.01). Patients with diabetes (p&lt;0.01), respiratory disease (p&lt;0.01) or transfused</p>

	<p>of blood (<math>p &lt; 0.01</math>) were more likely to develop a nosocomial infection.</p> <p><b>Conclusions:</b> Patients who acquire a nosocomial infection following CABG have a significantly higher mortality rate than those who do not. Social deprivation has a significant relationship with the development of nosocomial infection following CABG.</p>
<p>What were the best things about the project? (150 words max]</p>	<p>Although this audit was not strictly surgical based, there was a key element of important peri-surgical care. Infections are a huge problem in surgery. This audit allowed me to broaden my scope of surgery, taking infections into consideration and their impact on overall patient care.</p> <p>I thoroughly enjoyed the investigative type of work involved in data collection and was excited about the compelling statistics achieved from the results. The audit went on to prove a novel finding.</p>
<p>What problems did you encounter? (150 words max)</p>	<p>None</p>
<p>Techniques used in the project (in brief. Only really relevant if lab project, e.g. Western blotting, PCR, audit...)</p>	<p>N/A</p>
<p>Give details of any Surgical Experience you have gained</p>	<p>N/A</p>
<p>Details of any presentations or publications to arise from this project</p>	<p>Presentations (including posters)</p> <p>World Society of Cardiothoracic Surgeons 18<sup>th</sup> World Congress, Kos Island, Greece. April 30<sup>th</sup> – May 3<sup>rd</sup> 2008</p> <p>Atrium Conference, RIE, 2008</p> <p>Publications (including Abstracts)</p> <p>Heart Surgery Forum, Volume 11(Supplement 1), 2008</p>
<p>Your name:</p>	<p>Sunjay Kumar</p>
<p>Contact email: (optional)</p>	<p>s0677382@sms.ed.ac.uk</p>

Thank you for taking the time to fill the above form in. Please feel free to leave boxes blank if you want. The report will be uploaded onto the website in pdf form. Also, please feel free to submit more than one report!

James Blackmur  
ESSS Publicity Secretary  
On behalf of the ESSS Committee

Bernard Robertson  
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