



Title of PhD project	Measuring the health and economic burden of antibiotic resistance in healthcare associated infections to aid investment in prevention and control strategies	
Supervisor	Professor Mark Jit	LSHTM
Co-Supervisor	Professor Mike Sharland	SGUL
Potential Non-Academic Partner	Public Health England	
Brief description of project	Antibiotic-resistant healthcare associated infections (HCAI) present a real threat to human health worldwide. However, the totality of the health and economic burden posed by HCAI remains unquantified. Likewise, a metric by which to measure the totality of the burden of antibiotic resistance - necessary to communicate the extent of the issue and to evaluate the impact of interventions - does not exist. This project would use a unique English database of national infection and resistance data to quantify the burden of resistant bacterial HCAI and, using these estimates, devise a novel 'Resistance Index' measuring the burden of resistance across bacteria and infection types. Understanding the impact of resistance, and hence the monetary value of prevention, will allow cost-effectiveness evaluations of alternative intervention strategies to be performed. The project therefore has the potential to inform decision-making in this high priority area.	
Skills we expect a student to develop/acquire whilst pursuing this project	<ul style="list-style-type: none"> • Handling large datasets • Statistical modelling • Evidence synthesis • Handling missing information • Interdisciplinary working • Modelling to inform decision-making • Health economics and cost-effectiveness of interventions • Microbiological and epidemiological understanding of AMR and HCAI 	
Particular <u>prior</u> educational requirements for a student undertaking this project	Must have an MSc in a quantitative science	