



**LONDON
SCHOOL of
HYGIENE
& TROPICAL
MEDICINE**



Title of PhD project	Modelling the impact of inter-community transmission on reductions in tuberculosis incidence achieved through case finding interventions	
Supervisor	Dr Nicky McCreesh	LSHTM
Co-Supervisor	Dr Tom Sumner	LSHTM
Brief description of project	<p>The impact of tuberculosis control interventions on the incidence of disease may be underestimated in cluster-randomised trials, due to transmission from outside the community. The extent of this will vary by setting, depending on contact patterns within and outside the community. The effects of this on estimated intervention impact are not well understood, and are rarely considered in trial design or analysis.</p> <p>The successful student will analyse data from a social contact questionnaire conducted in two communities in KwaZulu-Natal, South Africa: one rural, and one urban. They will develop a mathematical model of contact patterns within and between the two communities, and determine the proportion of transmission that occurs outside the communities. Finally, they will simulate interventions, to determine how potential intervention impact varies between the two communities, and in hypothetical communities with a range of plausible contact patterns.</p>	
Skills we expect a student to develop/acquire whilst pursuing this project	Mathematical modelling, epidemiology, data analysis.	
Particular <u>prior</u> educational requirements for a student undertaking this project	The student should have a background in quantitative data analysis (e.g. an MSc in Epidemiology), or a mathematical background (e.g. degree in maths or physics). Some experience of mathematical modelling is desirable, but not essential.	