

2015/2016 Summer Studentship Project Application Form

Send to: Research Office, University of Otago Christchurch, PO Box 4345, Christchurch, by 5pm on **3 July 2015**

Supervisor Information (First named supervisor will be the contact):

Supervisor's Name and Title(s): Dr Tony Walls, Dr Natalie Martin, Dr Cheryl Brunton

Department: Paediatrics

Institution: UOC

Phone: 03 3786536

E-mail: tony.walls@otago.ac.nz

Mailing Address: PO Box 4345 Christchurch Mail Centre, Christchurch 8140

Research Category (Choose one category only – to be used for judging the students' presentations):

Clinical

Laboratory

Community

Project Title (20 words MAXIMUM):

The impact of vaccination on hospital admission rates for bacterial meningitis in New Zealand children.

Project Description:

Introduction:

Meningitis and sepsis/septicaemia due to *Neisseria meningitidis*, *Streptococcus pneumoniae* and *Haemophilus influenzae* are a major cause of mortality and long-term morbidity in New Zealand children. Since the introduction of effective conjugate vaccines over the past 21 years, there have been substantial reductions in these infections. Although the ESR collects data on laboratory confirmed cases of invasive bacterial disease, studies from other countries have shown that both laboratory confirmed cases and notifications are often underreported. We are not aware of any previous studies using routinely collected hospital coding datasets to analyse the long-term epidemiology of invasive bacterial disease caused by these three infections.

Aim:

The aim of this study is to assess the long-term trends in hospital admission rates for meningitis and septicaemia caused by *Neisseria meningitidis*, *Streptococcus pneumoniae* and *Haemophilus influenzae* in New Zealand children, and analyse the effect of the introduction of vaccinations in the National Immunisation Schedule.

Method:

The National Minimum Dataset will be used to identify cases of *H. influenzae*, pneumococcal and meningococcal meningitis and septicaemia from routinely collected hospital discharge statistics, using International Classification of Disease (ICD) coding. Annual age-specific and age-standardised admission rates in children aged <15 years will be calculated. Hospital admission rates will be compared to microbiological confirmed rates from ESR. Admission rates will also be analysed in the context of historical changes to the routine vaccination schedule, previously described disease epidemics in New Zealand.

This will provide the student with an excellent opportunity to develop skills in database management and basic epidemiology. They will work in a team with experience in Paediatric Infections Diseases and Epidemiology.

Student Prerequisites (eg. Medical Student) if applicable:

Good computer skills