2016/2017 Summer Studentship Project Application Form

Send to: Research Office, University of Otago Christchurch, PO Box 4345, Christchurch, by 5pm on **4 July 2016**

Supervisor Information (First named supervisor will be the contact):	
First Supervisor's Name and Title: Dr Siobhan Cross, Paediatric Haematologist and clinical senior lecturer	
Department - UOC &/or CDHB (if applicable): Paediatric Oncology	
First Supervisors Phone: 0210577611	First Supervisors Email: Siobhan.cross@cdhb.health.nz
First Supervisors Mailing Address: c/- Children's Haematology Oncology Centre, LGF CSB Christchurch Hospital, private bag4710	
Co-Supervisors Name and Title(s): Tony Walls, Paediatric Infectious Disease Specialist and clinical senior lecturer	

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

Project Title (20 words MAXIMUM):

Cost benefit analysis of routine serological titres in reducing re-immunisation in children post-chemotherapy for childhood cancer.

Project Description:

Introduction:

Children who undergo chemotherapy treatment for cancer may lose some or all of the immunity they acquired through routine childhood vaccination. Whether this immunity is lost depends in part on the type and intensity of the chemotherapy they undergo and also probably on individual host factors.

There is controversy in the literature regarding the utility of serological testing prior to revaccination. Two years ago the two child cancer centres in NZ have implemented a national immunisation policy to provide consistency across the country. The two centres have previously had different approaches to serological testing prior to revaccination. The new national immunisation policy has included routine antibody testing for all children prior to revaccination and it was decided to prospectively audit this change in policy.

Aim:

1. To determine if routine serological testing at 4-6 months post chemotherapy treatment reduces the number of vaccinations required by children (given that many products now contain multiple vaccines e.g. MMR, infanrix-hexa etc.)
2. If serological testing reduces the number of vaccinations required does this result in an overall cost saving taking into account the upfront costs of serological testing.
3. Audit the compliance with the national immunisation policy
4. Document the relation between immunisation history pre-cancer diagnosis, serological testing at diagnosis and 4-6 months post treatment.

For the last 2 years this data has been collected and we are now looking to answer the questions stated above. This would be the role that the summer student would undertake with supervision. We would envisage the results of this being published in a peer review journal.

Possible impact (in lay terms):

The aim of this audit was to see if:

- The numbers of needles a patient had to have for re-vaccination could be reduced

- If it was more cost effective for the health system to re-vaccinate every child fully (cost of vaccination + costs of needles/nursing time/pain) or to target re-vaccination (costs of serological testing)

The result would be a publication looking at reducing painful procedures for the child or whether if this was not achieved and if it was more cost effective not to do pre-vaccination testing for children post chemotherapy.

Method:

1. Collate demographics (age, sex, ethnicity, cancer type and treatment) results and determine the direct (total number of vaccination vials saved in $NZ) and indirect (cost including nursing/medical/administrative/consumable) monetary costs of the reduction in vaccinations. Document the number of needle sticks and health centre visits saved/child as non-monetary savings.
2. Collect immunisation history from immunisation register for each child pre diagnosis. Collect serological history at diagnosis for each child. Collect immunisations given post treatment from immunisation register.

Outcomes:

1. Report the number of injections avoided by children compared to the full post chemotherapy vaccination schedule
2. Compare the direct costs of vaccine vials and visits saved vs cost of serological testing.
3. Audit of compliance with current guidelines – timing of serological testing, vaccinations recommended, vaccinations received.
4. Report qualitative savings in reduction in pain and inconvenience to patients and their families (number of injections avoided, number of visits avoided)

Secondary Outcomes

5. Comparison of vaccination status pre-diagnosis, serological testing at diagnosis and post treatment serology.
6. Relationship of post treatment serology with age and chemotherapy given – are there groups in whom revaccination is un-necessary?