Centre for Public Health Research

Annual Report 2008
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Centre for Public Health Research

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Introduction

The Centre for Public Health Research (CPHR) is a multi-disciplinary team of researchers based on the Massey University Wellington campus. It is part of the Massey University Research School of Public Health, together with the Research Centre for Māori Health & Development, the Sleep/Wake Research Centre, the Social and Health Outcomes Research and Evaluation (SHORE) Centre and Te Ropu Whariki.

CPHR was established in 2000. Our research programme covers all aspects of public health research, but with a focus on:

- Non-communicable disease (respiratory disease, cancer, diabetes)
- Māori health
- Pacific health
- Occupational health
- Environmental health
- Socioeconomic determinants of health

CPHR recognises the importance of the Treaty of Waitangi and its relevance to our work. We have a long history of involvement with Māori research and policy development including the Māori Asthma Review, the Wairarapa Māori Asthma Project, and the Hauora Tamariki project. Much of our Māori health research is done in collaboration with the Research Centre for Māori Health & Development. We are also committed to employing and training Māori health researchers.

The Centre is based in the College of Humanities and Social Sciences, but we also work with researchers at other Massey Colleges and campuses, including the Veterinary Epicentre, and the Institute of Food, Nutrition and Human Health (IFNHH).
We also work with researchers at a number of other institutions, including:

- Malaghan Institute for Medical Research (MIMR)
- Department of Paediatrics, Auckland Medical School
- Department of Public Health, Wellington School of Medicine (University or Otago)
- Health & Disability Intelligence (Ministry of Health)
- Airway Research Centre (John Hunter Hospital, Newcastle, Australia)
- Institute for Risk Assessment Sciences (IRAS), University of Utrecht (The Netherlands)
- US National Cancer Institute (NCI)
- Centre de Recerca en Epidemiologia Ambiental (CREAL, Barcelona, Spain)
- Postgraduate School of Occupational Health (Milan, Italy)
- Department of Biomedical Sciences and Human Oncology, University of Turin (Italy)
- Department of Epidemiology and Preventive Medicine, Monash University (Melbourne)
- Department of Social Medicine, University of Bristol (United Kingdom)
- International Agency for Research on Cancer (Lyon, France)
- School of Occupational and Environmental Health, University of British Columbia (Canada)
- University of Groningen (The Netherlands)
- Department of Epidemiology, University of Kentucky (USA)
- Vrije Universiteit (The Netherlands)

Although our main activity is research, we also work with organisations such as the Ministry of Health (MoH), Department of Labour (DoL), the Accident Compensation Corporation (ACC) and various non-governmental organisations, unions and companies to ensure that the findings of research are relevant to, and applied in, public health policy. In particular, we have served on a number of advisory committees for the Health Research Council, the MoH, the Minister of Health, ACC, the Minister for ACC, the DoL and the Minister of Labour.
The last year has seen major developments in the work of the Massey University Centre for Public Health Research (CPHR) with considerable success in obtaining new research funding.

Despite the current severe shortage of health research funding, we had a successful year with $5.3 million of new funding, including a new Health Research Council (HRC) Programme Grant for Building Research in Occupational Health in New Zealand (BROHNZ), two new HRC project grants for cancer research, and grants from the International Agency for Research on Cancer (IARC), the Cancer Society of New Zealand, the Accident Compensation Corporation (ACC), the Wellington Medical Research Foundation, Genesis Oncology, Lotteries Health Research, the National Occupational Health and Safety Advisory Committee (NOHSAC), the Maurice & Phyllis Paykel Trust, and the Massey University Research Fund (MURF).

These grants represent a major expansion of our research programmes, particularly in occupational health and in cancer, in addition to our ongoing programmes of research in respiratory disease, and other areas of public health, Māori health, and Pacific health research. These programmes are described in more detail in the following pages.

We wish to thank all research collaborators involved in our various projects who have played an important role in ensuring a productive year, the agencies who have funded this programme of research, and all those who have participated in our studies. We also wish to thank Massey University and its staff for its excellent support for our research programme.
During 2008 we continued work on our major HRC-funded study of factors in farming that protect against asthma in farmers’ children and their parents. We are now conducting Phase III of the study which is examining the immune status of babies born on farms and a group of control babies.

We are examining the hypothesis that endotoxin exposure later in life may reverse pre-existing allergies and allergic diseases in an HRC-funded prospective cohort of previously unexposed allergic adults who are starting a work career in industries with moderate to high endotoxin exposures. If endotoxin exposure is indeed associated with a lower prevalence of allergies in adults then potentially vaccines could be developed, not only to protect against, but also to treat allergic disease both in children and in adults.

Our new HRC Programme Grant for Building Research in Occupational Health and Safety in New Zealand (BROHNZ) also includes funding for a major study of occupational asthma in sawmill workers.

We are also continuing to work on the International Study of Asthma and Allergies in Childhood (ISAAC). Neil Pearce is a member of the ISAAC Executive and the ISAAC Steering Committee. He was first author of the Phase III report on global trends in asthma prevalence that was published in Thorax in 2007. Sunia Foliaki is Regional Coordinator for Oceania and a member of the Steering Committee.

During 2008 Christine van Dalen also continued work on a study of the role of the lung macrophage in asthma pathology, and on other clinical asthma projects.

In 2008, Collin Brooks started his PhD research on the role of innate immunity in asthma development. The work is being conducted in collaboration with the Malaghan Institute for Medical Research, with funding support from the Asthma and Respiratory Foundation of New Zealand.
The last year has seen a major expansion of our cancer research programme. This includes ongoing studies of occupational cancer (see below), and a case-control study of breast cancer (with funding from Lotteries Health Research, the Cancer Society of New Zealand, and the Health Research Council).

In 2008, Dr Lis Ellison-Loschmann obtained funding from the HRC for two new major cancer research projects. The first will investigate possible reasons for the inequalities in breast cancer survival, focusing on the role of access to primary care and pathways through care from diagnosis to treatment. The second project involves a case-control study of risk factors for stomach cancer in Māori, in order to identify the major risk factors and the priorities for interventions.

In addition, we have been conducting a number of other analyses of cancer survival. These include Fiona McKenzie’s PhD research on the contribution of breast cancer risk factors to disparities in breast cancer survival (involving follow-up of the participants in the breast cancer case-control study), Mona Jeffreys’ work on socioeconomic and ethnic differences in cancer survival, a planned analysis of cancer survival in the participants in the stomach cancer case-control study, and Naomi Brewer’s PhD research on inequalities in cervical cancer survival. The latter work received a grant from Lotteries Health Research in 2008. A related project on human papilloma virus (HPV) prevalence in Tonga, has received funding from the WHO International Agency for Research on Cancer (IARC).

We also have US National Institutes of Health (NIH) funding for studies of occupational risk factors for Non-Hodgkin’s Lymphoma (NHL), and occupational exposure to electromagnetic fields (EMFs) and risk of glioma and meningioma.

Finally since 2005, CPHR has been contracted by the Ministry of Health to carry out independent monitoring of the National Cervical Screening Programme (NCSP). This involves the production of six-monthly and annual reports.
In the last year we have been awarded a new Programme Grant from the Health Research Council (HRC) for Building Research in Occupational Health in New Zealand (BROHNZ). This includes five major new studies: (i) a longitudinal study of the effects of exposures on new-onset allergies and asthma, and on lung function, in newly-recruited wood industry workers (with co-funding from the Department of Labour (DoL)); (ii) a study of prevalence and risk factors of work-related dermatitis in cleaners (with co-funding from the DoL); (iii) a case-control study of modifiable risk factors for congenital malformations, with particular emphasis on the role of occupational exposures; (iv) a survey of occupational exposures and occupational health in Māori; and (v) a study of workplace exposures to carcinogens in New Zealand (with co-funding from the DoL).

We are continuing to conduct a series of case-control studies of occupational risk factors for bladder cancer, Non-Hodgkin's Lymphoma (NHL), leukaemia, and lung cancer. These studies are funded by the HRC, ACC, Lotteries Health Research, and the Cancer Society.

We are continuing the development of a New Zealand Job-Exposure-Matrix (NZJEM) which will be used to assess occupational exposures on the basis of work histories.

We also have US National Institutes of Health (NIH) funding for studies of occupational risk factors for NHL, and occupational exposure to electromagnetic fields (EMFs) and risk of glioma and meningioma.

We are also conducting an HRC-funded study of dioxin exposures and health effects in former phenoxy herbicide production workers, and a similar study in firefighters.

We were funded by the National Occupational Health and Safety Advisory Committee (NOHSAC) to produce a report on women’s occupational health and safety in New Zealand.

Finally, we are conducting a survey of environmental persistent organic pollutants (POPs) in breast milk, with funding from the Ministry of Health.
In 2007, Dr Lis Ellison-Loschmann returned from the Centre de Recerca en Epidemiologia Ambientale (CREAL) and the Institut Catalán d’Oncologia (ICO) in Barcelona, Spain, where she spent two years as part of her four-year HRC-funded Postdoctoral Fellowship for studies of cancer epidemiology in Māori.

Lis is conducting a case-control study of breast cancer in Māori, and has recently received HRC funding for two cancer studies. The first will investigate possible reasons for the inequalities in breast cancer survival, focusing on the role of access to primary care and pathways through care from diagnosis to treatment. The second project involves a case-control study of risk factors for stomach cancer in Māori, in order to identify the major risk factors and the priorities for interventions.

She is also developing a study of the role of primary care for Māori with cancer, and is supervising the PhD research of Fiona McKenzie (inequalities in breast cancer survival) and Naomi Brewer (inequalities in cervical cancer survival).

In 2008, Māori Health Research Fellows Tania Slater and Michelle Gray both undertook PGDipPH projects (their respective research projects were “Occupational asthma and respiratory symptoms in New Zealand cleaners” and “What works for interviewing Māori?”).

In addition, CPHR has been contracted by the Ministry of Health to provide epidemiological services and advice for the Māori Health Directorate.
Dr Sunia Foliaki is coordinating the ISAAC Phase III study in the Pacific. Further studies include an asthma self-management trial in Tonga funded by the Wellcome Trust. Dr Foliaki was awarded his PhD for this work in 2007.

Dr Foliaki was awarded an HRC Pacific Health Postdoctoral Fellowship for studies of cancer in Pacific populations, which he commenced in September 2007. This includes an HRC-funded study of cancer in Tonga, Samoa, Niue, and Fiji. He is also conducting (with Naomi Brewer) a survey of Human Papilloma Virus (HPV) prevalence in Tonga, with funding from the WHO International Agency for Research on Cancer (IARC).

Dr Ridvan Firestone is undertaking an HRC-funded Postdoctoral Fellowship in Pacific Health research, which commenced in mid-2006. Her work includes the establishment of the New Zealand internet-based birth cohort study (www.elfs.org.nz), and the conduct of the Pacific arm of our case-control study of early life factors and breast cancer risk. She is also developing a study of risk and protective factors for female reproductive cancers.
Other non-communicable disease research has included a series of analyses of mortality and morbidity in patients with diabetes.

We have also conducted a series of analyses in collaboration with the New Zealand Hepatitis Foundation to examine mortality, cancer incidence, and diabetes incidence in patients screened for diabetes using the HbA1c test.

In 2008 the New Zealand internet-based birth cohort study (Early Life Factors Study of Childhood Diseases - www.elfs.org.nz) commenced with a pilot study in the Wellington region. This study will assess associations between a wide range of early life exposures, events, and lifestyle factors, and a broad range of health outcomes later in life.
The Massey University Research School of Public Health Master of Public Health (MPH) Programme includes a Postgraduate Diploma in Public Health (PGDipPH) which commenced in 2005; it involves the equivalent of one year fulltime study (a total of 120 points with two 30 point papers being compulsory – the core paper, and a research project). The programme involves an applied approach to public health education and training that is different from existing public health qualifications, integrating public policy more strongly with public health, and also providing the opportunity for a greater emphasis on Māori health, Pacific health, and other areas such as occupational and environmental health.

An MPH-by-thesis option has been available since 2004 for candidates who have already completed an equivalent of the PGDipPH.

In 2008, Neil Pearce commenced a three-year term as President of the International Epidemiological Association. One of his priorities is training of epidemiologists in developing countries and he has developed (with assistance from Naomi Brewer and Hilary Nuttall) the Annual IEA International Course in Epidemiological Methods. The first course will be held in Jaipur (India) in April 2009, and it is anticipated that subsequent courses will be held in the Middle East (2010) and in Africa (2011).
1. Microbial and arsenic content of roof, well and public water supplies in rural New Zealand communities and impact on health

AIMS:

1. To assess the microbial water quality of roof, well and public water supplies in rural New Zealand.
2. To assess arsenic levels in roof, well and public water supplies in rural New Zealand.
3. To measure the association between water quality and health symptoms in rural New Zealand communities.

FUNDING: Massey University

RESEARCHERS: Jeroen Douwes, Neil Pearce, Soo Cheng, Elizabeth Harding, Heather Duckett

COLLABORATORS: Stan Abbott (Institute of Food, Nutrition & Human Health, Massey University)

KEY WORDS: Water Quality, Arsenic, Health, Farming
2. Determinants of survival in cancer

AIMS:

1. To document cancer survival rates in New Zealand and investigate whether these are comparable to those in other developed countries.
2. To describe differences in cancer survival rates in New Zealand according to gender, socioeconomic status and ethnicity.
3. To quantify the proportion of the socioeconomic and ethnicity differences which are attributable to differences in age or extent of disease at presentation.

FUNDING: Lotteries Health Research

RESEARCHERS: Mona Jeffreys, Lis Ellison-Loschmann, Sunia Foliaki, Barry Borman, Neil Pearce

COLLABORATORS: Craig Wright, Dr Martin Tobias (Health and Disability Intelligence, Ministry of Health), Professor Tony Blakely, Dr Diana Sarfati (Wellington School of Medicine), Dr Vladimir Stevanovic (NZ Health Information Service, Ministry of Health).

KEY WORDS: Cancer, Survival
Ongoing projects

3. Workplace exposure to carcinogens in New Zealand

**AIMS:**

1. To conduct a review of the occupational causes of cancer and the known solutions for reducing and/or preventing exposures.
2. To construct a New Zealand specific Information System on Occupational Exposure to Carcinogens (NZ-CAREX).
3. To construct a New Zealand specific Agricultural Chemicals Exposure Matrix (NZ-ACEM).
4. To identify key industries and key carcinogens for which intervention would result in marked reductions in occupational cancer.
5. To evaluate practice, knowledge and attitudes of employers, employees and health and safety personnel about workplace carcinogens and intervention strategies, in key New Zealand industries.
6. To engage industry and other relevant stakeholders in this.
7. To build research capacity and partnerships in the field of workplace exposure to carcinogens.

**FUNDING:** Department of Labour (DoL), Health Research Council of New Zealand (HRC)

**RESEARCHERS:** Andrea 't Mannetje, Neil Pearce, Dave McLean, Jeroen Douwes, Evan Dryson, Chris Walls, Lis Ellison-Loschmann, Sunia Foliaki, Tania Slater

**COLLABORATORS:** Dr Aaron Blair (US National Cancer Institute), Professor Hans Kromhout (IRAS, University of Utrecht), Dr Paolo Boffetta (International Agency for Research on Cancer)

**KEY WORDS:** Occupational Health, Cancer, Epidemiology, Exposure Assessment
4. Occupational asthma in New Zealand sawmill workers

AIMS:
1. To assess the incidence of occupational asthma in previously unexposed newly or recently recruited sawmill workers.
2. To assess the incidence of decline in lung function in previously unexposed newly or recently recruited sawmill workers.
3. To assess whether dust exposures in the sawmill work environment are associated with these effects.
4. To assess which specific work-related factors increase the probability of a favourable prognosis after the diagnosis of occupational asthma.
5. To assess which preventive programmes are likely to be most effective.

FUNDING: Department of Labour (DoL), Health Research Council of New Zealand (HRC)

RESEARCHERS: Dave McLean, Jeroen Douwes, Neil Pearce, Chris Walls, Evan Dryson, Ridvan Firestone, Elizabeth Harding, Tania Slater, Amanda Eng, Kerry Cheung

COLLABORATORS: Professor Chris Cunningham (Research Centre for Māori Health and Development), Professor Paul Demers (University of British Columbia)

KEY WORDS: Occupational Health, Epidemiology, Respiratory Disease, Asthma, Sawmill Workers
AIMS:
1. To assess the prevalence of work-related dermatitis in New Zealand cleaners and compare it with a non-exposed reference group.
2. To assess what proportion of work-related dermatitis is new onset or incident dermatitis (as opposed to exacerbation of pre-existing dermatitis).
3. To assess the severity of work-related dermatitis based on symptom history and expert opinion.
4. To assess the cleaners’ exposure to cleaning agents and the frequency and duration of ‘wet work’.
5. To assess the associations between cleaning exposures and wet work, and work-related dermatitis.
6. To assess which factors increase the probability of a favourable prognosis after the diagnosis of occupational dermatitis.
7. To assess which preventive programmes are likely to be most effective.

FUNDING: Department of Labour (DoL), Health Research Council of New Zealand (HRC)

RESEARCHERS: Jeroen Douwes, Dave McLean, Neil Pearce, Ridvan Firestone, Chris Walls, Evan Dryson, Sunia Foliaki, Elizabeth Harding, Leigh Emmerton, Heather Duckett, Anne O’Dowd, Shirely-Belle Brogan, Tania Slater, Kerry Cheung, Colin Barr

COLLABORATORS: Dr Lissa Judd (Anwyl Specialist Medical Centre), Professor Pieter Jan Coenraads (University of Groningen)

KEY WORDS: Occupational Health, Epidemiology, Skin Disease, Dermatitis, Cleaners
AIMS:
1. To investigate the associations between maternal and paternal occupational exposures and congenital malformations (CM) in New Zealand.
2. To evaluate the contribution of non-occupational modifiable risk factors for CM including obesity, diabetes, alcohol consumption and folic acid supplementation.
3. To assess the contributions of (i) acute exposures during the critical period around conception and (ii) chronic lifetime exposures to the risk of CM.
4. To investigate the risk factors for specific CM subtypes.
5. To estimate the fraction of CM cases that can be potentially prevented.

FUNDING: Health Research Council of New Zealand (HRC), Massey University

RESEARCHERS: Andrea 't Mannetje, Amanda Eng, Lis Ellison-Loschmann, Barry Borman, Allan Smith, Shirley-Belle Brogan, Neil Pearce

COLLABORATORS: Dr Joanne Dixon (Wellington Hospital), Professor Innes Asher (Auckland Medical School)

KEY WORDS: Congenital Malformations, Pesticides, Occupational Exposures, Alcohol and Drugs, Epidemiology
AIMS:
1. To assess current and historical occupational exposures and work practices in a random sample of Māori workers.
2. To assess current morbidity from work-related disease in the same workers and its associations with current and historical occupational exposures.
3. To assess the overall burden of work-related disease in Māori and its relative importance for overall Māori mortality and morbidity.
4. To establish a prospective cohort of Māori workers in order to monitor future morbidity and mortality patterns in occupational health and workplace exposure.

FUNDING: Health Research Council of New Zealand (HRC)

RESEARCHERS: Lis Ellison-Loschmann, Katharine Haddock, Tania Slater, Michelle Gray, Andrea 't Mannetje, Neil Pearce

COLLABORATORS: Professor Chris Cunningham (Research Centre for Māori Health and Development), Professor Hans Kromhout (University of Utrecht)

KEY WORDS: Occupational Exposures, Māori Health, Epidemiology
8. Exposure to airborne hazardous substances in the wood conversion sector

AIMS:

1. To conduct a comprehensive review of the literature that will provide an overview of the key airborne exposures associated with elevated risks of cancer, respiratory morbidity and mortality, and other work-related illnesses in the New Zealand wood conversion sector.

2. To compare exposure levels reported in the literature with national and international limits.

3. To assess the prevalence of these exposures in the New Zealand wood conversion sector.

4. To assess which strategies have been most effective in reducing exposure in other countries.

5. To conduct an exposure survey in the New Zealand joinery and furniture industry involving measurements of airborne substances including wood dust and formaldehyde.

6. To estimate the risks to health of such exposures in New Zealand joinery and furniture workers.

FUNDING: Accident Compensation Corporation (ACC)

RESEARCHERS: Jeroen Douwes, Kerry Cheung, Colin Barr, Dave McLean, Andrea ’t Mannetje, Neil Pearce,

KEY WORDS: Occupational Health, Respiratory Disease, Cancer, Wood Industry, Epidemiology
9. Stomach cancer in Māori

AIMS:
1. To investigate the importance of known risk factors for stomach cancer in Māori including socioeconomic factors, *Helicobacter pylori*, obesity, diet, smoking, and alcohol consumption.
2. To investigate the role of genetic factors and gene-environment interactions (particularly alcohol consumption and specific genetic polymorphisms) on the risk of stomach cancer.
3. To explore potential risk factors for subtypes of stomach cancer including diffuse gastric cancer.
4. To record the care and treatment received by patients and examine factors that affect stomach cancer survival.

FUNDING: Health Research Council of New Zealand (HRC)

RESEARCHERS: Lis Ellison-Loschmann, Michelle Gray, Tracey Whaanga, Neil Pearce

COLLABORATORS: Associate Professor Jonathan Koea, Andrew Sporle (Apollo Centre), Pauline Harawira (Kimihauora Trust), Associate Professor Parry Guildford (Dunedin School of Medicine)

KEY WORDS: Gastric Cancer, Epidemiology, Risk Factors, Genetic Factors
10. Understanding the determinants of inequalities in breast cancer survival

AIMS:
1. To explore possible differences between ethnic, socioeconomic and urban/rural groups of women with breast cancer in their access to primary care.
2. To explore potential barriers/facilitators to diagnosis and optimum treatment.

FUNDING: Health Research Council of New Zealand (HRC)

RESEARCHERS: Lis Ellison-Loschmann, Fiona Mckenzie, Ridvan Firestone, Christine van Dalen, Neil Pearce

COLLABORATORS: Andrew Sporle, Dr Michelle Trumpelmann (Apollo Centre), Trish Clark (Southland District Health Board), Dr Belinda Scott (Breast Associates, Auckland), Dr Ben Gray (Wellington School of Medicine)

KEY WORDS: Breast Cancer, Cancer Control, Cancer Survival, Health Inequalities, Ethnicity, Socio-economic factors, Rurality
AIMS:

1. We have previously observed differences in cervical cancer survival in New Zealand according to ethnicity; are there similar differences by socioeconomic status or urban/rural status?

2. If ethnic, socioeconomic and/or urban/rural differences are present, are these explained by differences in stage at presentation?

3. What other factors (e.g. comorbidities, screening history, distance from clinic) may explain the observed demographic differences in survival?

FUNDING: Lotteries Health Research

RESEARCHERS: Naomi Brewer, Lis Ellison-Loschmann, Sunia Foliaki, Barry Borman, Neil Pearce

COLLABORATORS: Associate Professor Steven Fleming (University of Kentucky)

KEY WORDS: Cervical Cancer, Epidemiology, Survival
AIMS:
1. To investigate the age-specific prevalence of cervical abnormalities and HPV infection in women living in Kolofo'ou, Nuku'alofa, Tonga.
2. To assess risk factors for cervical cancer in Kolofo'ou, Nuku'alofa, Tonga.
3. To generate data to inform cervical cancer prevention programmes in Tonga.

FUNDING: International Agency for Research on Cancer (IARC)

RESEARCHERS: Sunia Foliaki, Naomi Brewer, Neil Pearce

COLLABORATORS: Dr Silvia Franceschi, Dr Gary Clifford (International Agency for Research on Cancer), Dr Peter Snijders, Professor Chris Meijer (Vrije Universiteit, Amsterdam)

KEY WORDS: Cervical Cancer, Epidemiology, Risk Factors, Human Papilloma Virus (HPV)
13. Chemical injury surveillance strategy

AIMS:
1. Review the international literature on chemical injury surveillance (CIS) methods and systems.
2. Evaluate the current chemical injury surveillance undertaken in New Zealand and recommend three future options CIS, including any new datasets required.
3. Conduct a stakeholders consultation on the options identified.

FUNDING: Ministry of Health
RESEARCHER: Barry Borman
KEY WORDS: Surveillance, Chemical Injury, Hazards

14. Providing Epidemiological Services to the Māori Health Directorate

AIM:
To provide the Māori Health Directorate, Ministry of Health with a variety of epidemiological services and analysis to support their policy and strategy development and implementation.

FUNDING: Ministry of Health
RESEARCHERS: Barry Borman, Lis Ellison-Loschmann, Neil Pearce
KEY WORDS: Māori Health, Epidemiology, Surveillance
15. The role of the innate immune system in childhood asthma development

AIMS:
1. To analyse gene expression of Toll-like receptors TLR2 and TLR4, and of CD14 in blood samples collected from 250 farmers infants and 250 control infants.
2. To analyse cell surface expression of TLR2, TLR4 and CD14 in blood samples from the same population using flow cytometry.
3. To assess whether expression of these receptors at either gene or cell surface is associated with farm and/or endotoxin exposure.
4. To assess which particular cell populations in blood show modulation of TLR2, TLR4 and CD14 due to farm/endotoxin exposure.
5. To assess whether expression of these receptors is associated with TH2 activity, allergies and symptoms of asthma.

FUNDING: Asthma and Respiratory Foundation of New Zealand (ARFNZ), Health Research Council of New Zealand (HRC)

RESEARCHERS: Collin Brooks, Christine van Dalen, Neil Pearce, Jeroen Douwes

COLLABORATORS: Dr Ian Hermans, Professor Graham Le Gros (Malaghan Institute of Medical Research)

KEY WORDS: Childhood Asthma, Allergy, Innate Immunity, Birth Cohort
AIMS:
1. To conduct a pooled analysis of 9 NHL case-control studies from North America, Europe, and Australia, to study the association between occupational risk factors and NHL, in different populations.
2. To investigate occupational risk factors previously found to be associated with NHL, using uniformly defined indicators for occupational exposure.
3. To evaluate risk by NHL subtype, using a standard NHL classification based upon histologically confirmed diagnoses.

FUNDING: US National Institutes of Health (NIH)
RESEARCHER: Andrea 't Mannetje
COLLABORATORS: Paolo Boffetta (International Agency for Research on Cancer, France), Pierluigi Cocco (University of Cagliari, Italy), Anneclaire De Roos (Fred Hutchinson Cancer Research Center, US), Silvia De Sanjose (Catalan Institute of Oncology, Spain), Geza Benke (University of Melbourne, Australia), Aaron Blair (National Cancer Institute, US), Paul Brennan (International Agency for Research on Cancer, France), Brian Chiu (Northwestern University, US), Patricia Hartge (National Cancer Institute, US), Elizabeth Holly (University of California), Eve Roman (University of York, UK), Adele Seniori Costantini (Centre for Oncologic Prevention, Italy), John Spinelli (BC Cancer Research Center, Canada), Tongzhang Zheng (Yale University, US)

KEY WORDS: Non-Hodgkin’s Lymphoma, Pooled Analysis, Occupational Risk Factors
17. Asthma causation, mechanisms and prevention

AIMS:

1. To assess whether atopic sensitisation can be reversed over time in a working adult population newly exposed to moderate to high levels of endotoxin.
2. To assess whether there is a dose-response between endotoxin exposure and change in atopic status.
3. To assess the time period in which the reduction in atopy takes place.
4. To assess the association between endotoxin exposure and lung function and respiratory symptoms.
5. To assess whether a change in atopic status is associated with a change in lung function and respiratory symptoms.
6. To assess the level of exposure at which the protective effect on atopy is most effective and the adverse effects on the airways (induced by non-atopic mechanisms) are minimal.

FUNDING: Health Research Council of New Zealand (HRC)


COLLABORATORS: Professor Graham Le Gros, Dr Jacquie Harper (Malaghan Institute of Medical Research)

KEY WORDS: Asthma, Respiratory Disease, Occupational Health
AIMS:

1. To describe the prevalence and severity of asthma, rhinitis and eczema in children living in different centres and to make comparisons within and between countries.

2. To conduct ecologic analyses of the association of asthma prevalence with factors such as diet, infections, immunisation, air pollution and allergen levels.

3. To examine trends in asthma prevalence over time.

4. To provide a framework for further aetiological research into genetic, lifestyle, environmental and medical care factors affecting these diseases.

The International Study of Asthma and Allergies in Childhood (ISAAC) was developed and organised together with colleagues in Auckland, London and Münster. This study now includes more than 1,000,000 children in more than 280 centres in 100 countries. Our involvement includes:

- Sunia Foliaki is Regional Coordinator for Oceania and a member of the ISAAC Steering Committee.
- We are participating in the New Zealand ISAAC Phase III survey, and have conducted the survey in Wellington.
- Neil Pearce is a member of the ISAAC Executive and ISAAC Steering Committee, and is the ISAAC Publications Coordinator.

FUNDING: Health Research Council of New Zealand (HRC), Wellcome Trust

RESEARCHERS: Neil Pearce, Lis Ellison-Loschmann, Sunia Foliaki, Soo Cheng

COLLABORATORS: Professor Innes Asher (Auckland Medical School), Professor Bengt Björkstén (Karolinska Institute, Stockholm), Professor David Strachan (St George’s Hospital Medical School, London), Professor Luis Garcia Marcos (University of Madrid, Spain) and many other colleagues in more than 280 centres in 100 countries

KEY WORDS: ISAAC, Asthma, Respiratory Disease, Child Health
AIMS:
1. To assess whether chronic inflammation in asthma is due to impairment in the ability of pulmonary macrophages to phagocytose apoptotic neutrophils and eosinophils.
2. To assess whether differences in the cell profile of asthma inflammatory phenotypes are due to differences in pulmonary macrophage phagocytic ability.

FUNDING: Marsden Fund
RESEARCHERS: Christine van Dalen, Elizabeth Harding, Prachee Gokhale
COLLABORATORS: Dr Mark Hampton (Free Radical Research Group, Christchurch School of Medicine, Christchurch)
KEY WORDS: Asthma, Inflammation, Macrophage, Eosinophil, Neutrophil
AIMS:

1. To assess adolescent exposures which may be pertinent to breast cancer risk.
2. To investigate the relationship between the potential risk factors and breast cancer risk in the New Zealand population.
3. To investigate whether these relationships differ between ethnic groups.
4. To follow the cases to assess which factors affect cancer survival.

FUNDING: Health Research Council of New Zealand (HRC), Cancer Society of New Zealand

RESEARCHERS: Mona Jeffreys, Fiona McKenzie, Ridvan Firestone, Michelle Gray, Lis Ellison-Loschmann, Ate Moala, Sunia Foliaki, Neil Pearce

COLLABORATORS: Dr Peter Dady (Cancer Society of New Zealand), Professor George Davey Smith (University of Bristol, United Kingdom)

KEY WORDS: Breast Cancer, Early Life Factors, Life-course Epidemiology
AIMS:
1. To conduct descriptive analyses of cancer incidence and mortality in four Pacific countries (Tonga, Samoa, Fiji and Niue) and in Pacific people in New Zealand.
2. To conduct a case-control study of breast cancer in women which will be conducted in the same four Pacific countries in parallel with a similar study of Pacific women in New Zealand.

FUNDING: Health Research Council of New Zealand (HRC)

RESEARCHERS: Sunia Foliaki, Mona Jeffreys, Ate Moala, Lis Ellison-Loschmann, Diana Best, Neil Pearce

COLLABORATORS: Dr Lepani Waqatakirewa (Ministry of Health, Fiji), Dr Siale ‘Akau’ola (Ministry of Health, Tonga), Dr Semisi Aiono (Ministry of Health, Samoa), Dr Hale Paka (Department of Health, Niue), Dr Paolo Boffetta (International Agency for Research on Cancer, Lyon, France), Dr Marc Goodman (University of Hawaii), Professor George Davey Smith (University of Bristol, United Kingdom)

KEY WORDS: Cancer, Breast Cancer, Pacific
AIMS:

1. To measure the prevalence of respiratory symptoms (with the focus on asthma) in farmers’ children and their parents, and in a comparison group from a non-farming population (Phase I).

2. To compare the prevalence of respiratory symptoms in children and parents in various types of farming (dairy, sheep & beef, and crop farming) (Phase I).

3. To measure the prevalence of atopy in a sample of children and their parents (farming and non-farming) in order to ascertain whether any protective effect of farming involves atopic mechanisms (Phase II).

4. To measure relevant environmental exposures in a sample of households (farming and non-farming) including house dust allergen and endotoxin, and to examine their association with the occurrence of atopy and asthma, while adjusting for other risk factors for asthma (Phase II).

5. To study through the conduct of an infant cohort study the immune status of babies born on farms, and control babies (Phase III).

FUNDING: Health Research Council of New Zealand (HRC)

RESEARCHERS: Jeroen Douwes, Neil Pearce, Soo Cheng, Elizabeth Harding, Heather Duckett, Shirley-Belle Brogan, Leigh Emmerton, Anne O’Dowd, Michelle Gray, Haidee MacKenzie

COLLABORATORS: Dr Joanna McKenzie (Massey University Veterinary Epicentre), Professor Graham Le Gros (Malaghan Institute of Medical Research), Dr Erika Von Mutius (University Children’s Hospital, Munich, Germany), Professor Chris Cunningham (Research Centre for Māori Health & Development)

KEY WORDS: Asthma, Respiratory Disease, Child Health, Occupation
23. Occupational cancer in adult New Zealanders (OCANZ)

AIMS:
1. To obtain an overview of the importance of occupational factors for bladder cancer, non-Hodgkin’s lymphoma, leukaemia and lung cancer in New Zealand.
2. To quantify the proportion of cases due to known occupational causes.
3. To identify new occupational causes of these cancers.

FUNDING: Health Research Council of New Zealand (HRC), Lotteries Health Research, Cancer Society of New Zealand, Accident Compensation Corporation (ACC)

RESEARCHERS: Evan Dryson, Chris Walls, Dave McLean, Neil Pearce, Soo Cheng, Andrea ’t Mannetje, Fiona McKenzie, Heather Duckett

COLLABORATORS: Professor Hans Kromhout (IRAS, University of Utrecht, The Netherlands), Dr Paolo Boffetta (International Agency for Research on Cancer, Lyon, France), Dr Aaron Blair (National Cancer Institute, Washington DC, USA), Professor Chris Cunningham (Research Centre for Māori Health & Development)

KEY WORDS: Occupation, Cancer, Bladder Cancer, Non-Hodgkin’s Lymphoma, Leukaemia, Lung Cancer
AIMS:
1. To examine the long term effects on mortality and cancer incidence in production workers and pesticide sprayers exposed to phenoxy herbicides, chlorophenols and dioxin contaminants.
2. To measure the dioxin levels and related biomarkers of dioxin toxic effects in the blood of former phenoxy herbicide production workers.
3. To determine whether dioxin levels are associated with higher cancer mortality and incidence in this population.
4. To determine whether dioxin levels are associated with chronic health problems and adverse reproductive outcomes in this population.
5. To determine whether dioxin levels are associated with biomarkers of dioxin toxic effects including effects on AhR-regulated biological functions.

FUNDING: Health Research Council of New Zealand (HRC)

RESEARCHERS: Andrea 't Mannetje, Dave McLean, Tania Slater, Amanda Eng, Shirley-Belle Brogan, Collin Brooks, Elizabeth Harding, Evan Dryson, Chris Walls, Barry Borman, Neil Pearce

COLLABORATORS: Professor Manolis Kogevinas (Centre de Recerca en Epidemiologia Ambiental (CREAL), Barcelona), Professor Pier Bertazzi (University of Milan), Dr Rod Lea (Environmental Sciences and Research), Dr Patrick O’Connor (MidCentral Health).

KEY WORDS: Cancer, Occupation, Pesticides, Dioxin
AIMS:
1. To obtain data on current levels of persistent organic pollutants (POPs) in human breast milk in New Zealand.
2. To compare these levels with previous levels and detect trends in POPs exposure.
3. To measure for the first time polybrominated diphenylethers (PBDE) in breast milk in New Zealand.
4. To use the collected New Zealand breast milk samples for inclusion in the fourth round of the WHO-coordinated study of human milk for POPs, thus providing an international comparison for levels of POPs.
5. To study the determinants of elevated levels of POPs in breast milk in New Zealand.
6. To provide recommendations for prioritising POPs for remedial action in New Zealand.

FUNDING: Ministry of Health

RESEARCHERS: Andrea ‘t Mannetje, Jeroen Douwes, Shirley-Belle Brogan, Heather Duckett, Leigh Emmerton, Lis Ellison-Loschmann, Allan Smith Neil Pearce

COLLABORATORS: Dr Stuart Harrad (University of Birmingham)

KEY WORDS: Breast Milk, POPs (Persistent Organic Pollutants), Dioxins, Polychlorinated Biphenyls (PCBs), Organochlorine Pesticides, Polybrominated Diphenylethers (PBDE)
AIMS:
1. To measure the individual serum dioxin levels of 40 firefighters previously stationed at New Plymouth.
2. To assess their health status through clinical examination.
3. To compare their dioxin levels with the dioxin levels of 20 firefighters never stationed in New Plymouth.
4. To determine whether dioxin levels are associated with chronic health problems and adverse reproductive outcomes of this population.

FUNDING: The New Zealand Fire Service
RESEARCHERS: Andrea ‘t Mannetje, Amanda Eng, Elizabeth Harding, Shirley-Belle Brogan, Tania Slater, Collin Brooks, Neil Pearce
KEY WORDS: Dioxin, Firefighters, Serum Levels, Phenoxy Herbicides
AIMS:
1. To establish a large dynamic cohort of infants who will be followed until adulthood.
2. To assess associations between a wide range of early life exposures/events/lifestyle factors and a broad range of health outcomes in early childhood including those listed below.
3. To assess the associations between maternal diet and congenital malformations, infant deaths, low birth weight, growth patterns up to age 18 months, hospital admissions in infancy, childhood obesity, and allergies and asthma symptoms.
4. To assess the associations between parental occupational exposures and congenital malformations, infant deaths, and low birth weight.
5. To assess the associations between domestic exposures to common cleaning agents during pregnancy and in the first few months after birth, and asthma symptoms in infants.
6. To assess the associations between indoor dampness and fungal exposure, and allergies and asthma symptoms in infants.
7. To assess the associations between ethnicity and/or low socioeconomic status and low birth weight, an increased risk of hospital admissions in infants, growth patterns up to 18 months, and obesity after two years of age.
8. To assess the associations between infant diet and allergy and asthma symptoms, and obesity after two years of age.
9. To provide a sampling frame for more detailed clinical studies on specific diseases by selecting subjects from the larger data base.

FUNDING: Health Research Council of New Zealand (HRC)

RESEARCHERS: Ridvan Firestone, Mona Jeffreys, Andrea ’t Mannetje, Lis Ellison-Loschmann, Barry Borman, Soo Cheng, Xian Chen (Jo), Neil Pearce, Jeroen Douwes

COLLABORATORS: Dr Lorenzo Richiardi and Prof Franco Merletti (Epidemiology Unit, Department of Biomedical Sciences, Turin, Italy)

KEY WORDS: Birth Cohort, Congenital Malformations, Infant Deaths, Obesity, Respiratory Disease, Lifestyle Factors, Socioeconomic Status, Environmental Exposures
28. Occupational exposure to EMFs and risk of glioma and meningioma

AIMS:
1. To evaluate the possible association between the occupational exposure to electromagnetic fields (EMFs) and tumours of the brain and central nervous system (specifically, glioma and meningioma).
2. To evaluate the possible association between selected occupational chemical exposures and tumours of the brain and central nervous system (specifically, glioma and meningioma).
3. To investigate the possibility of synergism and/or confounding between chemical and EMF exposures on the risk of brain cancers.

FUNDING: US National Institutes of Health (NIH)

RESEARCHERS: Dave McLean

COLLABORATORS: Elisabeth Cardis, Isabelle Deltour (International Agency for Research on Cancer), Geza Benke (Monash University), Joe Bowman Dave Conover (NIOSH), Maria Feychtng, Nils Plato (Karolinska Institute), Martine Hours (Université Claude Bernard), Daniel Krewski (George Washington University), Susanna Lagorio (Istituto Superiore di Sanita), Patricia McKinney (University of Leeds), Marie-Elise Parent (INRS-Institut Armand Frappier), Siegal Sadetzki (Tel Hashomer), Brigitte Schlehofer (DKFZ German Cancer Research Center), Jack Siemiatycki (Université de Montréal), Martie Van Tongeren (Institute of Occupational Medicine, Edinburgh), Timo Kauppinen (Finnish Institute of Occupational Health), Franco Merletti (University of Turin).

KEY WORDS: Cancer, Electromagnetic Fields
Projects Based in Other Research Groups and Institutions

1. Health effects of mobile (cellular) phones

AIMS:
1. To investigate whether mobile phone use causes brain cancer.
2. To investigate occupational causes of brain cancer.

COLLABORATORS: Professor Alistair Woodward (University of Auckland), Dr Angus Cook, Professor Tony Blakely (Wellington School of Medicine), Dr Elizabeth Cardis (International Agency for Research on Cancer)

CPHR RESEARCHER: Neil Pearce

KEY WORDS: Cancer, Environmental Health
2. Estimating the long-term health outcomes of people with epilepsy

AIMS:

1. To establish an epilepsy register in Tasmania.
2. To undertake a cross-sectional study of this community sample of people with epilepsy to investigate the prevalence of epilepsy syndromes, and their severity, epilepsy-related injuries and health service utilisation.
3. To establish a community cohort of people with epilepsy which can be followed prospectively to monitor health outcomes, measure risk factors contributing to these outcomes if indicated (with second stage case-control studies), and perform intervention trials if considered appropriate.

COLLABORATORS: Dr Wendyl D’Souza, Dr Mark Cook, Dr Terry O’Brien (St Vincent’s Hospital, Melbourne), Dr Bruce Taylor (Hobart Hospital, Tasmania), Professor Terry Dwyer (Menzies Centre, Hobart, Tasmania)

CPHR RESEARCHER: Neil Pearce

KEY WORD: Epilepsy
3. Centre for Māori Health Research and Development (HRC Programme Grant)

**AIM:**
Programme of research in Māori health, including studies of child health, mental health and the health of older Māori (Research Centre for Māori Health & Development HRC Programme Grant).

**COLLABORATORS:** Professor Mason Durie, Professor Chris Cunningham, Dr Maureen Holdaway, Dr Stephanie Palmer, Dr Te Kani Kingi, John Waldon, Dr Amohia Boulton, Sharon Taite (Research Centre for Māori Health & Development)

**CPHR RESEARCHER:** Neil Pearce

**KEY WORD:** Māori Health

4. The Glasgow Alumni Project

**AIM:**
To determine the influence of life-course exposure patterns on disease occurrence in later life.

**COLLABORATORS:** Professor George Davey Smith, Professor David Gunnell, Dr Bruna Galobardes (University of Bristol, UK)

**CPHR RESEARCHER:** Mona Jeffreys

**KEY WORDS:** Life-course Epidemiology, Cancer Cardiovascular Disease, Diabetes
5. The Glasgow Alumni Project
Mammography Study

AIMS:
1. To describe a novel technique of modeling volumetric breast density.
2. To determine the influence of life-course exposures on volumetric breast density.

COLLABORATORS: Professor George Davey Smith (University of Bristol, UK), Dr Peter McCarron (Queen’s University, Belfast, UK), Dr Ruth Warren (University of Cambridge, UK)

CPHR RESEARCHER: Mona Jeffreys

KEY WORDS: Life-course Epidemiology, Breast Cancer, Breast Density

6. Cardiovascular disease and oral health: The Glasgow Alumni Study

AIMS:
1. To investigate the relationship between cardiovascular disease and oral health, accounting for socioeconomic background.
2. To investigate the relationship between parental socioeconomic background and early adult oral health status.

COLLABORATORS: Dr Mark Gilthorpe, Dr Yu-Kang Tu (University of Leeds, UK), Professor George Davey Smith, Professor David Gunnell, Dr Bruna Galobardes (University of Bristol, UK), Dr Peter McCarron (Queen’s University, Belfast, UK)

CPHR RESEARCHER: Mona Jeffreys

KEY WORDS: Foetal Origins of Adult Disease, Life-course Epidemiology, Cardiovascular Disease, Oral Health
AIMS:
1. Investigate the role of occupational risk factors in the aetiology of lung cancer in Central and Eastern Europe.
2. Investigate other factors including tobacco consumption, air pollution and genetic susceptibility.
3. Conduct this analysis after combining the datasets of individual centres.

COLLABORATORS:
Dr Paolo Boffetta (International Agency for Research on Cancer, Lyon, France),
Dr Tony Fletcher (London School of Hygiene and Tropical Medicine, London, UK),
Dr Joelle Fevotte (Institut Universitaire de Médecine du Travail, UCB, France),
Dr Dana Mates (Institute of Hygiene, Public Health, Health Services and Management, Bucharest, Romania),
Dr Peter Rudnai (National Institute of Environmental Health, Budapest, Hungary),
Dr David Zardze (Institute of Carcinogenesis, Cancer Research Centre, Moscow, Russia),
Dr Eleonóra Fabiánová (Specialised State Health Institute, Banská Bystrica, Slovakia),
Dr Witold Zatonski (Maria Sklodowska Institute of Oncology, Warsaw, Poland),
Dr Neonila Szeszenia-Dabrowska (Department of Epidemiology, Lodz, Poland),
Dr Vladimir Janout (Department of Preventive Medicine, Palacky University of Medicine, Olomouc, Czech Republic),
Dr Vladimir Bencko (Charles University of Prague, First Faculty of Medicine, Praha, Czech Republic),
Dr Lenka Foretova (Department of Cancer Epidemiology, Masaryk Cancer Institute, Brno, Czech Republic),
Dr Judith Youngson (Roy Castle International Centre for Lung Cancer Research, Liverpool, UK)

CPHR RESEARCHER: Andrea ‘t Mannetje
KEY WORDS: Lung Cancer, Occupation, Tobacco
AIMS:

1. To assess the role of known (i.e., occupation, smoking, alcohol drinking, fruit and vegetable intake) or putative (i.e., human papilloma virus (HPV) infection) risk factors for cancer of the oral cavity and the larynx in the study populations.

2. To investigate the presence and pattern of P53 mutations and to assess whether they differ according to exposure to risk factors.

3. To assess the role of genetic susceptibility mediated through genetic polymorphisms of enzymes potentially implicated in the metabolism of carcinogens.

COLLABORATORS:

Dr Paul Brennan, Dr Paolo Boffetta (International Agency for Research on Cancer, Lyon, France), Dr Maria Paula Curado (Registro de Câncer de Goiânia, Associação de Combate ao Câncer em Goiâs, Brazil), Dr Alexander Daudt (Cancer Prevention and Control Section, Hospital de Clínicas de Porto Alegre, Brazil), Dr Sergio Koifman (Escola Nacional de Saúde Pública, Fundação Oswaldo Cruz, Brazil), Dr Ana Menezes (Departamento de Clínica Médica, Faculdade de Medicina, Universidade Federal de Pelotas, Brazil), Dr Victor Wünsch-Filho (Departamento de Epidemiologia, Faculdade de Saúde Pública, Universidade de São Paulo, Brazil), Dr Elena Matos (Dep.to. de Carcinogenesis Quimica y Ambiental, Instituto de Oncologia Angel H. Roffo, Universidad de Buenos Aires, Argentina), Dr Leticia Fernandez (Institute of Oncology and Radiobiology, Havana, Cuba), Dr Jan Walboomers, Dr Peter Snijders (Department of Pathology, Free University Hospital, Amsterdam, The Netherlands), Dr Joelle Fevotte (Institut Universitaire de Médecine du Travail, UCB, Lyon, France)

CPHR RESEARCHER: Andrea ‘t Mannetje

KEY WORDS: Oral Cancer, Laryngeal Cancer, Lifestyle Factors, Occupation
9. Environmental exposures and lymphoid neoplasms

AIMS:
1. To identify the contribution of Epstein-Barr virus, Human Immunodeficiency virus, Hepatitis C virus and Herpes virus 8 to the occurrence of lymphoid neoplasms.
2. To explore the potential associations of other infectious agents (Chlamydia, other related herpes virus, papovavirae virus) to the occurrence of lymphoid neoplasms.
3. To identify the contribution of specific occupational exposures (inorganic pesticides, organic pesticides, animal viruses, organic dust, organic solvents and radiation) to the occurrence of lymphoid neoplasms.
4. To explore the possible interactions between occupational/environmental factors and infectious agents.
5. To explore the possible contribution of exposure to ultraviolet radiation to the occurrence of lymphoid neoplasms.

COLLABORATORS: Dr Paul Brennan, Dr Paolo Boffetta (International Agency for Research on Cancer, Lyon, France), Dr Silvia de Sanjosé (Oncology Institute, Barcelona, Spain), Dr Marc Maynadie (Hôpital du Bocage, Dijon, France), Dr Nikolaus Becker (German Cancer Research Centre, Heidelberg, Germany), Dr Anthony Staines (Department of Public Health, University College, Dublin, Ireland), Dr Jose Iscovich (International Fertility Institute, Raanana, Israel), Dr Lenka Foretova (Department of Cancer Epidemiology, Masaryk Cancer Institute, Brno, Czech Republic), Dr Martine Vornanen (Department of Clinical Pathology, Kuopio University Hospital, Kuopio, Finland), Dr Pier Luigi Cocco (Institute of Occupational Health, Cagliari, Italy)

CPHR RESEARCHERS: Andrea ’t Mannetje, Lis Ellison-Loschmann

KEY WORDS: Lymphoid Neoplasms, Environmental Exposures, Infectious Agents, Occupational Exposures
AIMS:
1. To investigate the impact of exposure to arsenic in drinking water on lung function and respiratory symptoms and diseases in children.
2. To assess possible synergy between ingested arsenic and inhaled indoor air pollutants from biomass burning and second-hand smoke on lung function and respiratory outcomes in children.
3. To investigate nutritional susceptibility to arsenic-related respiratory effects in children.
4. To assess whether or not methylation of arsenic to MMA3 and MMA5 as measured in urine affects the risks of arsenic-related respiratory system effects in children and to store remaining urine samples for other testing including proteomics.
5. To identify whether children with reduced height-for-age, weight-for-height, or weight-for-age are at increased risk of developing arsenic-related respiratory symptoms and impaired lung function, while considering modifying factors, particularly nutrition.
6. To start a cohort for long-term follow-up into late adolescence and young adulthood to investigate the relation of childhood arsenic exposure and lung function and respiratory effects later in life.

COLLABORATORS: Professor Allan Smith, Dr Ondine von Ehrenstein (University of California, Berkeley, USA)

CPHR RESEARCHERS: Neil Pearce, Jeroen Douwes

KEY WORDS: Arsenic, Asthma, Respiratory Disease, Child Health
AIMS:
1. To examine the associations of exposure to traffic fumes with childhood asthma and other respiratory symptoms.
2. To examine the effects of immigration to Italy on the prevalence of childhood asthma and other respiratory symptoms.
3. To examine the associations of maternal complications and procedures in pregnancy and at birth with the prevalence of childhood asthma and other respiratory symptoms.

COLLABORATORS: Dr Claudia Galassi, Professor Franco Merletti (University of Turin, Italy), Professor Francesco Forastiere (Local Health Authority, Rome, Italy)

CPHR RESEARCHER: Neil Pearce

KEY WORDS: Asthma, Child Health, Risk and Protective Factors, ISAAC, SIDRIA
AIMS:
1. Establish a cohort of lead-exposed workers in scheduled lead occupations in the 1970s and 1980s in Victoria, New South Wales and South Australia.
2. Measure the cancer incidence and mortality in this cohort, in particular for cancers of the kidney, central nervous system, stomach and lung.
3. Investigate dose-response relationships in this cohort of occupational lead exposure for those cancer subtypes where sufficient numbers exist.

COLLABORATORS: Associate Professor Malcolm Sim, Dr Geza Benke, Ewan MacFarlane (Monash University Centre for Occupational and Environmental Health, Australia), Associate Professor Lin Fritschi (Western Australian Institute for Medical Research, Australia), Dino Pisaniello (University of Adelaide, Australia)

CPHR RESEARCHER: Dave McLean

KEY WORDS: Cancer, Occupational Health, Lead
13. Socioeconomic status, asthma and chronic bronchitis in a large community-based study

AIMS:

1. To investigate the relationship between socioeconomic status and the prevalence and incidence of asthma and chronic bronchitis using data from Phase II of the European Community Respiratory Health Survey (ECRHS II).

2. To investigate changes in these associations over time (between ECRHS I and ECRHS II).

COLLABORATORS: Professor Jordi Sunyer, Dr Jan-Paul Zock, Professor Josep Maria Antó, Professor Manolis Kogevinas (CREAL, Barcelona, Spain), Dr Deborah Jarvis (Royal Imperial College, London, UK), Dr Christer Jansen (Uppsala University, Uppsala, Sweden)

CPHR RESEARCHERS: Lis Ellison-Loschmann, Neil Pearce

KEY WORDS: Asthma, Socioeconomic Status, Time Trends
AIMS:
To investigate levels of IgE, IgM and IgG both prior to and post commencement of treatment, and evaluate lymphoma risk in relation to total and specific IgE levels.

COLLABORATORS: Dr Silvia de Sanjosé, Yolanda Benavente, Rebecca Font (Epidemiology and Cancer Registry Unit, Institut Catala d'Oncologia, Barcelona, Spain), Dr Enric Buendia (Immunology-Allergy Dept, Hospital de Bellvitge, Barcelona, Spain), Dr Tomás Alvaro (Pathology, Hospital Verge de la Clinta, Tortosa, Spain), Professor Manolis Kogevinas (CREAL, Barcelona, Spain)

CPHR RESEARCHERS: Lis Ellison-Loschmann, Jeroen Douwes

KEY WORDS: Lymphoma, Immunoglobulins
Training
PGDipPH projects

Michelle Gray
Title: What works for interviewing Māori?
Supervisor: Lis Ellison-Loschman

Cameron Ormsby
Title: Environmental pollution sources and their likelihood of causing bacteriological contamination of oyster farms in the Clevedon and Waiheke Island growing areas
Supervisor: Jeroen Douwes

Jodi Porter
Title: Tātou Papakainga Tātou Whānau Ora: Our homes, our families’ health and wellbeing
Supervisor: Lis Ellison-Loschmann

Toni Searl
Title: Factors associated with an increased uptake of seasonal influenza vaccination
Supervisor: Dave McLean

Tania Slater
Title: Occupational asthma and respiratory symptoms in New Zealand cleaners
Supervisor: Jeroen Douwes

Sharon Vera
Title: Prevalence of alcohol intoxication in patients attending A&E
Supervisor: Andrea ‘t Mannetje
Training
MPH theses

**Bianca Claas**
Title: Access to oral health information among pregnant women
Supervisor: Lis Ellison-Loschmann

**Masters students based in other research groups**

**Jason Kingsley**
Title: Fungal allergy and exposure to fungi in asthma
Supervisors: Professor Euan Tovey (Woolcock Institute for Medical Research, University of Sydney, Australia)

**Ruth Hinz**
Title: Hydrogen sulphide exposure and potential associated health effects in the adult population of Rotorua
Supervisors: Dr Vincent Neall (Department of Earth Sciences, Massey University), Jeroen Douwes

**Keriata Stuart**
Title: Factors influencing Māori women’s decisions about drinking alcohol during pregnancy: a qualitative study
Supervisors: Dr Maureen Holdaway (Research Centre for Māori Health and Development, Massey University) and Lis Ellison-Loschmann

**Toby Regan**
Title: The “Dirty Determinant of Health”: A review of intervention strategies to address income as a determinant of health
Supervisors: Dr Louise Signal (Wellington School of Medicine) and Anna Matheson
<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Supervisors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Naomi Brewer</td>
<td><strong>Title:</strong> Epidemiological studies of cervical cancer in New Zealand</td>
<td><strong>Supervisors:</strong> Lis Ellison-Loschmann, Dr Mona Jeffreys (University of Bristol)</td>
</tr>
<tr>
<td>Collin Brooks</td>
<td><strong>Title:</strong> Innate immunity and asthma</td>
<td><strong>Supervisors:</strong> Jeroen Douwes and Dr Ian Hermanns (Malaghan Institute of Medical Research)</td>
</tr>
<tr>
<td>Marine Corbin</td>
<td><strong>Title:</strong> Bayesian methods in epidemiology</td>
<td><strong>Supervisors:</strong> Neil Pearce and Dr Milena Maule (University of Turin, Italy)</td>
</tr>
<tr>
<td>Wendyl D'Souza</td>
<td><strong>Title:</strong> Epilepsy in Tasmania</td>
<td><strong>Supervisors:</strong> Neil Pearce, Professor Simon Easteal (ANU, Canberra) Submitted and awarded 2008</td>
</tr>
<tr>
<td>Amanda Eng</td>
<td><strong>Title:</strong> Epidemiological studies of occupational exposures and health effects in the New Zealand workforce</td>
<td><strong>Supervisors:</strong> Andrea 't Mannetje, Neil Pearce</td>
</tr>
<tr>
<td>Fiona McKenzie</td>
<td><strong>Title:</strong> Breast cancer survival in New Zealand</td>
<td><strong>Supervisors:</strong> Mona Jeffreys, Lis Ellison-Loschmann</td>
</tr>
<tr>
<td>Ate Moala</td>
<td>HRC Pacific Health Research Training Fellow</td>
<td><strong>Title:</strong> Health promotion in Pacific people</td>
</tr>
</tbody>
</table>
Doctoral students based in other research groups

Geoff Duff

Title: A multi-scale systems study of eye health services in New Zealand
Supervisors: Dr Richard Edwards, Professor Peter Crampton (Wellington School of Medicine) and Barry Borman

Brendon Stevenson

Title: Te Hoe Nuku Roa
Supervisors: Professor Chris Cunningham (Research Centre for Maori Health and Development, Massey University) and Neil Pearce
HRC Pacific Health Postdoctoral Research Fellow

**Title:** Life-course epidemiology of non-communicable disease

*Supervisors: Jeroen Douwes, Mona Jeffreys, Neil Pearce*

HRC Pacific Health Postdoctoral Research Fellow

**Title:** Cancer in Pacific populations

*Supervisors: Neil Pearce, Mona Jeffreys*

HRC Erihapeti Rehu-Murchie Māori Health Research Fellow

**Title:** Epidemiology and Māori health research

*Supervisors: Neil Pearce, and Professor Chris Cunningham (Research Centre for Māori Health & Development)*
Annual Symposia in Health Research and Policy

Occupational health in New Zealand: Challenges and opportunities

Te Papa, Wellington, 17-18 November, 2008

Keynote Speakers:
Professor Aaron Blair (US National Cancer Institute, Washington, DC)
Professor Hans Kromhout (University of Utrecht, the Netherlands)
Professor Malcolm Sim (Monash University, Melbourne)

Other Speakers and Chairs:
Ian Bartlett (New Zealand Occupational Hygiene Society)
Associate Professor Barry Borman (Massey University)
Professor Chris Cunningham (Massey University)
Associate Professor Jeroen Douwes (Massey University)
Amanda Eng (Massey University)
Dr Geraint Emrys (Department of Labour)
Dr Bill Glass (Occupational Medicine Specialist)
Dr Sarah Jay (Massey University)
Dr Lissa Judd (Dermatology and Occupational Medicine, Anwyl Specialist Medical Centre)
Dr John Kerr (Australian and New Zealand Society of Occupational Medicine)
Dr Lis Ellison-Loschmann (Massey University)
Paul Mackay (Business New Zealand)
Dr Margaret Macky (Accident Compensation Corporation)
Dr Andrea ‘t Mannetje (Massey University)
Anne-Marie McInally (New Zealand Council of Trade Unions)
Dr Dave McLean (Massey University)
Professor Neil Pearce (Massey University)
Dr Sara Souter (Occupational Physician/Company Medical Officer Air New Zealand Ltd)
Judith Vercoe (NZ Occupational Health Nurses Association)
Dr Chris Walls (Occupational Medicine Specialists)

This was the eighth in a series of Annual Symposia in Health Research and Policy. The symposium was organised by the Centre for Public Health Research, with funding support from the Accident Compensation Corporation (ACC) and Massey University. The presentations are available in downloadable form on our website.
Presentations

9th South East Asia Regional Scientific Meeting of the International Epidemiological Association, Dhaka, Bangladesh, February, 2008.


McLean D. Exposure assessment in occupational epidemiology. Wellington School of Medicine and Auckland Medical School, February, 2008.


Douwes J. Storms, floods, damp indoor environments and respiratory morbidity. Wellington School of Medicine, Wellington, March 2008.

Pearce N. Corporate influences on epidemiology. Sawmill Workers Against Poisoning (SWAP), Whakatane, May 2008.


Douwes J. Occupational asthma. XVIII International Epidemiological Association World Congress of Epidemiology, Porto Alegre, Brazil, September 2008.

Brewer N, Wright CS, Travier N, Cunningham CW, Hornell J, Pearce N, Jeffreys M. A New Zealand linkage study examining the associations
between glycosylated haemoglobin concentration and mortality.


Pearce N. Epidemiology in a changing world.

Pearce N. The International Study of Asthma and Allergies in Childhood (ISAAC). Annual Scientific Meeting of NZ Section of Urological Society, Palmerston North, October, 2008.

Pearce N. Epidemiology of bladder cancer in New Zealand. Wellington School of Medicine, Wellington, October, 2008.


Pearce N. Environmental causes of asthma. National Centre for Epidemiology and Public Health (NCEPH) 20th Anniversary Symposium, Canberra, Australia, November, 2008.


Eng A. Self-reported occupational exposures in the New Zealand workforce.
McLean D. Building Research in Occupational Health in New Zealand (BROHNZ).

Pearce N. Getting unstuck in environmental and occupational cancer research.

Centre de Recerca en Epidemiologia Ambientale (CREAL), Barcelona, December 2008.
Journals


Saracci R, Pearce N. Observational studies may conceal a weakly elevated risk under the appearance of consistently reduced risks. Int J


Conference proceedings and book chapters


Books and Reports

Foliaki S. Epidemiology of asthma in selected pacific countries. Wellington: Centre for Public Health Research, 2008.


CPHR Technical Reports


Other Publications


10 March - Wijnand Eduard. Fungi, MVOC and mycotoxins in indoor air.


14 March - Neil Pearce. Corporate influences on epidemiology.

22 April - Paul White. Coughs and sneezes spread diseases: how we'll know when you've got bird flu.

6 May - Andrea 't Mannetje. The New Zealand Job-Exposure-Matrix (NZJEM).

27 May - Dave McLean. Health outcomes in former New Zealand timber workers exposed to pentachlorophenol (PCP).


21 July - Colin Cryer. Occupational Injury Research at the IPRU.

22 July - Geoff Kira. Fitness and fatness: ethnic or economic?.

- Collin Brooks. Innate immunity and asthma.

2 September - Steven T. Fleming. Cancer survival analysis: concepts and caveats.

4 November - Steven T. Fleming. Diabetes, Asthma, Cancer Screening, and “Medical Home” Attributes: Is there a Connection?
11 November - Sarah Hill. Māori/non-Māori disparities in colon cancer treatment and survival - results from a retrospective cohort study.

20 November - Andrea Forde. The Public Health Consequences of a Disaster: the Wenchuan Earthquake.

Advisory Committees

**Policy**

Chronic Respiratory Diseases Expert Group, WHO Global Burden of Disease Project (Neil Pearce)

College of Humanities and Social Sciences Research Committee, Massey University (Jeroen Douwes)

Committee on Guidance for Biological Agents in the Indoor Environment. World Health Organisation (WHO) (Jeroen Douwes)


Medical Advisory Committee, Food Standards Australia New Zealand (Neil Pearce)

Ministerial Advisory Panel on Work-related Gradual Process, Disease, or Infection. Accident Compensation Corporation (ACC) (Dave McLean)

National Advisory Committee on Health and Disability (National Health Committee). Ministry of Health (Neil Pearce)

National Occupational Health and Safety Advisory Committee (NOHSAC). Department of Labour (Neil Pearce, Chair, Evan Dryson)

Occupational Risks Expert Group, WHO Global Burden of Disease Project (Neil Pearce)

Organochlorines Technical Advisory Group. Ministry of Health (Andrea ‘t Mannetje, Dave McLean)

Pacific Advisory Drafting Group. Massey University (Sunia Foliaki)

Respiratory Disease Expert Group, WHO Global Burden of Disease Project (Neil Pearce)


WHO Working Group on Guidelines for Indoor Air Quality: Dampness, Mould and Ventilation (Jeroen Douwes)
Working Group on Burden of Cancer from Asbestos Exposure, International Agency for Research on Cancer (Neil Pearce)

WHO International Agency for Research on Cancer (IARC) Working Group on carcinogenicity of some aromatic amines, organic dyes, and related exposures (Andrea ‘t Mannetje)

Funding

Health Research Council Public Health Research Committee (Lis Ellison-Loschmann)

International Union Against Cancer (UICC) International Cancer Technology Transfer Fellowships (Neil Pearce)

Italian Association for Cancer Research. Study Section (Neil Pearce)

Wellcome Trust PhD Programme Assessment Committee (Neil Pearce)

Ethics

Massey University Human Ethics Committee (Dave McLean, Tania Slater)

Conferences

Scientific Committee, 20th International Symposium on Epidemiology in Occupational Health, San Jose, Costa Rica, 2008 (Neil Pearce)

Scientific Committee of the XVIII World Congress of Epidemiology, Porto Alegre, Brazil, 2008 (Neil Pearce)

International Advisory Committee, 9th South East Asia Regional Scientific Meeting of the IEA, Dhaka, Bangladesh, 2008 (Neil Pearce)

Scientific Committee, Annual Meeting of the Australasian Epidemiology Association, Dunedin, 2009 (Neil Pearce)

Professional societies

International Epidemiology Association (Neil Pearce, President)

Research

Advisory Committee for Cancer Control Council Survey of Experiences of Cancer Patients Accessing Treatment (Barry Borman, Neil Pearce)
Advisory Committee for Citizen's Jury on Privacy and Research on Medicine Safety, University of Otago (Neil Pearce)

Advisory Board for Healthwise Alumina Workforce Studies. Monash University, Melbourne, Australia (Neil Pearce, Chair)

Advisory Committee for Tasmanian Epilepsy Register (Neil Pearce)

International Study of Asthma and Allergies in Childhood (ISAAC) Executive (Neil Pearce)

International Study of Asthma and Allergies in Childhood (ISAAC) Steering Committee (Neil Pearce, Sunia Foliaki)

Scientific Advisory Committee, Defence Health Surveillance Program (DHSP), Department of Defence, Australia (Neil Pearce)

Scientific Advisory Committee for Centre de Recerca en Epidemiologia Ambiental (CREAL) (Centre for Research in Environmental Epidemiology), Barcelona, Spain (Neil Pearce)

Steering Committee, International Agricultural Consortium (Jeroen Douwes)

Editorial Advisory Boards

Asian Pacific Journal of Cancer Prevention (Neil Pearce)

BMC Environmental Health (Neil Pearce)

BMC Medical Research Methodology (Neil Pearce)

Cancer Causes and Control (Neil Pearce)

Current Cancer Therapy Reviews (Neil Pearce)

Faculty of 1000 Medicine (Neil Pearce)

Journal of Epidemiology and Community Health (Jeroen Douwes, Associate Editor)

Scandinavian Journal of Work Environment and Health (Neil Pearce)

The Open Cancer Journal (Neil Pearce)

The Open Environmental Journal (Neil Pearce)

The Open Epidemiology Journal (Jeroen Douwes)
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- Accident Compensation Corporation (ACC)
- Cancer Society of New Zealand
- Department of Labour (DoL)
- Health Research Council of New Zealand
- International Agency for Research on Cancer (IARC)
- Lotteries Health Research
- Marsden Fund
- Massey University
- Ministry of Health
- New Zealand Fire Service
- US National Institutes of Health (NIH)

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