Burnet Institute

Director: Professor Brendan Crabb PhD

www.burnet.edu.au

The past 12 months have been an exciting time for the institute with a number of strategic initiatives and structural changes implemented, the completion of new laboratory facilities, and a strong performance against key organisational indicators.

Our newly articulated mission statement is 'to achieve better health for poor and vulnerable populations in Australia and internationally through research, education and public health'. This statement best reflects who we are today and where we are headed. While it has a strong focus on the communities we serve, it provides us with the flexibility to address key health issues across our research and public health continuum.

Of great significance was the completion and occupation of the Alfred Centre Stage 2, which was the culmination of more than five years of planning and construction, involving the hard work and extraordinary commitment of many Burnet staff and board members. Our new state-of-the art laboratory facilities located on Level 7 of the Alfred Centre have significantly enhanced our capacity and we are already seeing the benefits of expanded research and public health programs.

A number of new initiatives were implemented during the year. The institute developed a new ImmunoMonitoring Facility (IMF), the only NATA-accredited facility of its kind in Australia, providing biotechs access to support for clinical trials of novel vaccines and immunotherapies.

The Centre for Population Health and its collaborating partners have established a Centre of Research Excellence aimed at reducing the health, social and economic problems of injecting drug use in Australia. This was just one of a number of grant and fellowship successes received from the NHMRC in what was a record year of achievement. Research in human immunodeficiency virus (HIV), malaria, hepatitis C, immunity and vaccines, drug dependency and health of prison populations were just some of the areas supported at the institute this year.

In developing our key health themes, we made a number of strategic appointments to the institute. Professor Louisa Degenhardt has been appointed as Principal in Young People's Health. Dr James Beeson and Dr Freya Fowkes and their team of researchers and epidemiologists joined our Centre for Immunology, significantly increasing the institute's expertise focused on the global health issues associated with malaria. Dr Beeson has since become the head of the Centre for Immunology.

Centre for Virology

The Centre for Virology's mission is to find innovative solutions for the world's most serious viral diseases, focusing on understanding how viruses manipulate their host cells in order to infect them and persist in the body. Research in this area is vital in developing ways to block infection and to prevent viruses replicating and causing disease. The management of chronic viral diseases requires new drugs and diagnostic tools. Research within the centre investigates new drug targets at the molecular level.

HIV-associated Neurological Disorders

The Wright Group is focused upon HIV-associated neurological disorders in diverse international settings. We have undertaken important epidemiological work on NeuroAIDS in both Asia and the Pacific, leading the international SMART Neurology Substudy that examined the neurocognitive performance of HIV-positive patients randomised to receive continuous versus intermittent treatment for HIV infection. We found that cardiovascular risk factors correlated strongly with poor neuropsychological performance. As a result, we recommended that patients be screened and treated for cardiovascular risk factors and disease to offset any potential contributory effects upon their cognition.

Identifying New Therapeutic Targets

The Viral Fusion Laboratory investigates how two major human pathogens, HIV and hepatitis C virus (HCV), attach to and enter cells. Proteins on the surface of viral particles mediate attachment to cellular receptors and then fusion of the virus and cell membranes, which are essential steps leading to viral entry. Understanding these processes at the molecular level enables us to identify ways in which we can block viral attachment and membrane fusion using antiviral agents. It also enables us to design novel vaccines based on the viral surface proteins to elicit an antibody response capable of blocking attachment of viruses to cells. We successfully used this approach to synthetically construct a modified form of the HCV attachment protein and showed that it elicits a neutralising antibody response that can prevent infection with HCV in *in vitro* studies. This modified form of the HCV attachment protein is now a lead vaccine candidate, and further studies will examine its potential for use as an HCV vaccine.

The Life Cycle of HIV

The HIV Molecular Pathogenesis Laboratory, headed by Associate Professor Paul Gorry, aims to understand the very earliest steps in the life cycle of HIV, namely how the virus interacts with cellular receptors

Burnet Institute Ambassador Ms Princess Kasune Zulu, author and AIDS activist, with Associate Professor Johnson Mak

to enter cells. We are demonstrating how alterations in this process accelerate the destruction of CD4+ T-cells in HIV-infected people and how this also renders macrophages susceptible to infection. Moreover, we study how alterations in the way HIV engages cellular receptors facilitates viral escape from new drugs that block virus entry.

Developing the Burnet AX-2 CD4 Test Reader

Associate Professor David Anderson and Professor Suzanne Crowe have continued development of a rapid point-of-care test for measurement of CD4+ T-cells in HIV-infected patients – an essential tool for management of drug therapy. A major focus during 2010 has been the development of the Burnet AX-2 CD4 test reader, together with Melbourne-based Axxin. This simple robust instrument provides enhanced accuracy for samples near the assay cut-off, and allows for improved quality control in assay design and manufacturing.

The Central Nervous System as a Viral Reservoir

The major obstacle to eradicating HIV-1 is the ability of proviral DNA to persist latently in cellular reservoirs. Resting memory T-cells are the best characterised HIV-1 reservoirs, but other cells such as astrocytes in the brain are also latently infected. Unique regulatory mechanisms directing HIV-1 persistence in astrocytes, and the critical nature of these cells for maintaining normal brain function, pose important challenges to strategies that aim to completely eradicate HIV-1 from the body. Led by Dr Melissa Churchill, the HIV Neuropathogenesis Laboratory aims to understand the mechanisms by which HIV-1 infects the brain and persists in the central nervous system.

Growth of Influenza B Viruses for Vaccine Use

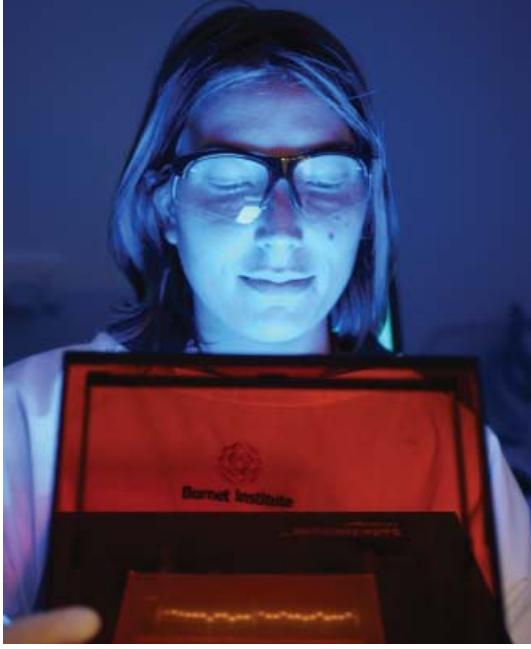
Seasonal vaccines against influenza usually consist of the surface antigens of specified epidemic strains of influenza A of the H1N1 and H3N2 subtypes, and influenza B viruses. The growth of seasonal influenza A viruses can be improved by the inclusion of certain genes in the virus. Unfortunately, a similar approach is difficult to achieve with influenza B viruses. Several reports have suggested the use of adaptation to growth at lower temperatures (25˚C; cold-adaptation) as a means of enhancing influenza B virus yields. In this project, supported by CSL Ltd, the properties of recent influenza B viruses were compared under different growth conditions to identify reasons for erratic growth in eggs. Several high-yielding, cold-adapted strains continue to be examined by the Tannock Laboratory as potential high-yielding donor strains in the preparation of vaccine reassortants.

Centre for Immunology

The Centre for Immunology's mission is to develop novel ways to prevent or treat major infectious diseases, cancers, and autoimmune diseases. The centre brings together outstanding research groups and integrates fundamental and applied research programs to understand the way the immune system functions in health and disease. This knowledge is used for the development of novel treatments and vaccines for major human diseases.

HIV-1 Interactions with Macrophages

A cross-cutting collaboration between the laboratories of Dr Paul Ramsland and Associate Professor Paul Gorry has established a computational approach for predicting three-dimensional structures of an HIV-1 surface glycoprotein, gp120, which mediates entry into cells. Dr Jasminka Sterjovski and Michael Roche (PhD student) examined the structural mechanisms for engagement of the host receptors (CD4 and co-receptors CCR5 and CXCR4) by a series of gp120 variants isolated from HIV-1 infected people. The initial experiments examined the capacity of the gp120 variants to mediate CCR5-dependent viral entry into human monocyte-derived macrophages (MDM). This finding suggested that the gp120 interaction with CCR5 may differ in strength or architecture between different primary HIV-1 isolates. The capacity of gp120 to tolerate mutations at key positions of CCR5 was tested and compared against viral entry into MDM. Critical sites were found to be located in the N-terminal region (first segment of the protein) and the extracellular loop region 2 of the coreceptor. Our ongoing structure–function studies should lead to a detailed structural understanding of viral cellular entry and pathogenesis.



Production of Interferon-λ by DC Subsets

Dendritic cells (DCs) sense pathogen invasion via specific receptors expressed on the surface and inside the cells, known as pattern recognition receptors (PRR). Dr Meredith O'Keeffe and her group have further clarified exactly what PRR are expressed by DCs by analysing the proteome (entire suite of proteins) expressed by different subsets of DCs, in collaboration with colleagues in Munich at the Max Planck Institute for Biochemistry and Bavarian Nordic GmbH. They have also shown that a particular type of DC (CD8+ in mice and CD141+ in humans) is a major producer of interferon-lambda (IFN-λ) in response to viral RNA. These DCs are known to be important in inducing potent T-cell responses in viral infections. IFN-λ has been shown to play an important role in protection against mucosal viral infections and may be important for clearance of hepatitis C infection and the cells that make IFN-λ have been ill-defined. We are now investigating how IFN-λ production by these DC subsets may promote or otherwise affect the immune response to infection.

A Role for NFκB1 in Immune Homeostasis

Mice lacking the NFκB1 gene, which is involved in cell signalling within the haematopoietic compartment, develop a lymphoproliferative disease with features that resemble autoimmune disease. Seven months after the transfer of NFκB1-deficient haematopoietic stem cells into normal wild-type host mice, 95 percent of mice developed a multi-organ lymphoid infiltrate resembling the human autoimmune condition systemic lupus erythematosus. Characterisation of these responses revealed a marked increase in specific immune cells (B-cells and CD4+ T-cells) in organs such as the liver, lungs and pancreas. In all cases tested to date, autoantibodies were detected in the sera of mice lacking NFκB1 within the immune system. Collectively, these observations reveal a vital role for NFκB1 in maintaining the normal integrity of the adaptive immune system, as the absence of this regulatory protein may lead to development of a severe autoimmune-like disease.

Designing New Vaccines and Therapies

Professor Geoff Pietersz and colleagues are involved in the design of novel drug and vaccine delivery systems for viral infections and cancer. They have successfully validated a new composition of their cancer vaccine, MFP, in animals and *in vitro* human cell culture. An approach involving the mixing of mannan with whole inactivated influenza vaccine developed by the group has been further optimised using an intramuscular/intranasal prime-boost immunisation strategy

designed to enhance immune responses at mucosal surfaces like the lungs. Membrane translocating peptides were also successfully used to deliver multiple antigenic tumour peptides and confer protection to mice from tumour challenge. Furthermore, they have utilised a small chemical entity that activates an intracellular signaling pathway to increase the immunogenicity of DNA vaccines.

Immune Responses in Hepatitis C Virus Infection

It is still not understood why some people when infected with HCV are able to quickly clear the infection, while others go on to life-long infection and serious complications. Recent studies have shown that IFN-λ may be a critical factor in affecting this outcome and may influence the generation of effective immune responses. In collaboration with institute colleagues, Associate Professor Rose Ffrench and her group have studied immune responses and IFN-λ production in the Networks cohort of young injecting drug users. They have shown clear differences in the nature of the immune responses generated in those that resolve HCV infection compared to those with chronic infection, and further studies aim to elucidate the mechanism behind these differences.

Dendritic Cell Development

Studies by Professor Vasso Apostolopoulos and her lab have revealed that reactive oxygen species (ROS) may be responsible for the development of DCs, which play key roles in immune responses. ROS have been implicated in various physiological activities; however, their role in DC activation and generation had not been investigated. Induction of ROS correlated with inflammatory DC and functionality.

Infection, Cancer and Autoimmune Diseases: Identifying New Therapies

A newly discovered white blood cell type, Th17, may have major roles in infection, cancer and autoimmune diseases. These cells normally fight infection but also appear to promote destructive inflammation in autoimmune disease or inflammation that assists cancer cell growth. Professor Mark Hogarth and colleagues aim to identify new therapies and understand mechanisms of disease development. They isolate Th17 cells from mice expressing human Fc receptors that develop destructive autoimmunity and from patients with inflammatory autoimmune diseases like rheumatoid arthritis or lupus.

Studies in mice suggest that infection may trigger a series of events leading to the development of Th17 cells that results in arthritis and a lupus-like syndrome. Indeed, changes in white blood cell hormone levels, especially IL 21 and IL 23, are part of this process and precede disease. In patients, and with the CRC for Biomarker Translation, they have analysed 34,000 genes and surface proteins from Th17 cells to find unique molecules associated with disease that can be targeted for novel therapies that eliminate these cells in arthritis, lupus and cancer.

Centre for Population Health

The Centre for Population Health (CPH) improves the health of the community by conducting high-quality, policy relevant and innovative research into major public health problems associated with infectious diseases, drug use and related behaviours. Specific interests include HIV, hepatitis C, sexually transmitted infections (STIs), malaria, tuberculosis, drug and alcohol misuse and justice health – all serious health concerns in Australia and in the Asia and Pacific regions predominantly affecting highly vulnerable populations.

Chlamydia trachomatis

Chlamydia trachomatis is an STI predominantly affecting young heterosexual men and women, with over 74,000 new notifications in

Project officer provides home-based care at Wachet Jivitadana Sangha Hospital in Myanmar.

Australia in 2010. CPH aims to reduce the impact of chlamydia by reducing transmission and increasing the number of young people tested and treated. As part of this work, CPH explores the use of new technologies such as mobile phones and social networking websites for health promotion.

Scaling up Diagnosis and Treatment of Drug-resistant Tuberculosis in Khayelitsha, South Africa

Tuberculosis bacteria, resistant to commonly used antibiotics, are causing increasing morbidity and mortality in resource-poor settings. Although different drugs can be used to treat drug-resistant tuberculosis (DR-TB), treatment continues for almost two years, side effects are common and treatment outcomes remain poor, particularly among HIV-infected individuals. There are also significant problems with access to diagnosis for DR-TB. Working collaboratively with Médecins Sans Frontières in the large township of Khayelitsha, South Africa, Burnet epidemiologist, Dr Helen Cox has helped to integrate DR-TB diagnosis and treatment into the primary care health system through a more patient-centred approach. Key successes include diagnosis and treatment of approximately half of the estimated cases in Khayelitsha, a dramatic improvement on the three percent global figure. The program demonstrates that most patients with DR-TB can be diagnosed and treated at local primary care clinics, thus avoiding expensive hospitalisation.

Health Intervention for Adult Ex-prisoners

The Passports project (Passports to advantage: health and capacity building as a basis for social integration) is led by Dr Stuart Kinner, head of the Centre for Population Health's Justice Health research program. Passports is the world's first randomised clinical trial in its field, and aims to evaluate the impact of an innovative health and psychosocial intervention package for adult prisoners being released to the community in Queensland.

Major research foci are post-release physical and mental health and risk behaviours, access to and use of health services, and the incidence and timing of recidivism. Over 1,300 prisoners were recruited into the cohort, and are being re-interviewed approximately one, three and six months post-release. We anticipate that Passports will lead to significant gains in our knowledge of how to improve the health of Australian ex-prisoners, a large and growing population.

Malaria

Scientists working in the Gilson/Crabb Malaria Laboratory are interested in how malaria parasites attach to and then invade red

blood cells (RBCs) in order to develop new drugs and vaccines that block invasion. They study the parasite surface protein, AMA1, that helps the parasite strongly and irreversibly attach to the RBC surface. They have discovered that the short stubby tail of AMA1 that pokes back inside the parasite needs to be modified by one of the parasite's kinase enzymes before RBC invasion will occur. If the AMA1 tail modification is blocked, then the parasites can attach to but cannot invade the RBC. This is a novel and important finding and was recently published in a high profile parasitology journal. The group believes that the modification of the AMA1 tail is part of a complex chain of signal transduction events that help parasites make decisions about which cell types to invade and when.

Drug Reporting Systems – IDRS/EDRS

Since 2008, Burnet Institute has run the Victorian arms of the Illicit Drug Reporting System (IDRS) and the Ecstasy and Related Drugs Reporting System (EDRS) in partnership with the National Drug and Alcohol Research Centre. This work provides important surveillance information on patterns of drug use and related harms in Victoria using standard methods that have been applied since 1997 (IDRS) and 2003 (EDRS). These methods include a survey of people using particular types of drugs, interviews with key experts and analysis of secondary data sources. The importance of these systems in picking up new trends in drug use is highlighted by the 2010 Victorian EDRS, through which a large increase in the use of the drug mephedrone (street name: miaow miaow) was documented for the first time in Victoria.

Hepatitis C

Our research into HCV continued largely through our ongoing Networks study and the development of models for the integrated management of hepatitis C in the community. Since commencing in 2005, Networks researchers have followed a cohort of people who inject drugs (the major risk group for HCV infection in Australia) with the primary aim being to better understand the transmission of hepatitis C. Important findings include the identification of very high rates of hepatitis C reinfection and associations between the probability of an individual being infected with hepatitis C and the nature of their injecting network.

Centre of Research Excellence in Injecting Drug Use

CPH successfully applied to NHMRC to establish a Centre of Research Excellence in Injecting Drug Use (CREIDU). CREIDU brings together Australia's leading researchers on injecting drug use (IDU), along with partners and key experts from the non-government sector and policy sectors, to generate new evidence on ways to ameliorate the health and social burden of IDU. With a focus on translating research into policy and practice, CREIDU aims to reduce the key harms associated with IDU by identifying ways to reduce blood-borne virus transmission (particularly hepatitis C), prevent overdoses, and improve justice health and psychiatric health.

Informing HIV Prevention

Burnet Institute has conducted HIV surveillance for the Victorian Department of Health since 1986. In 2010, after four years of historically high annual HIV notifications, new diagnoses of HIV in Victoria declined by 15 percent to 228. An increasing proportion of these notifications were newly acquired in the past 12 months. These data suggest that health promotion activities designed to increase HIV testing, particularly among gay men, may be having an impact. This outcome is supported by Burnet's evaluation of HIV prevention initiatives in Victoria. In a report provided to the Victorian Government in 2010, Burnet staff outlined their findings that recent social marketing campaigns were successful in raising gay men's awareness of the importance of testing and prompted a meaningful proportion to present for HIV testing. Burnet's sentinel surveillance data also showed a significant increase in monthly HIV testing rates among gay men attending high caseload clinics over the campaign period.

Centre for International Health

The Centre for International Health (CIH) leads practical action to improve the health of people in low-income countries. Our expertise spans HIV prevention and care, women's and children's health, sexual and reproductive health, drug use, primary health care, strengthening national health systems, and education about all these fields. We work with local communities, governments, the UN system and international organisations including Australia's development agencies. We have overseas offices in Papua New Guinea (PNG), Indonesia, Lao PDR, Myanmar (Burma), China (including Tibet), Mozambique and Thailand and also work in other countries through Burnet's local partners.

CIH staff members were engaged to help develop: HIV strategic plans in Fiji, Solomon Islands, Federated States of Micronesia, and Marshall Islands; a national plan to prevent and control emerging infectious diseases in Vietnam; and a national health promotion policy in Samoa. We led a review of the Australian-funded Pacific Malaria Initiative and are in the process of designing a second phase of the program. Our staff also designed a new Clinton Foundation program focusing on AIDS in children in PNG. Burnet staff were active in a number of regional and global harm reduction networks and provided technical assistance to the Tanzanian Government to reduce the HIV risks associated with the escalating wave of injecting drug use in Zanzibar. The centre's HIV prevention work included an innovative sexual network modelling study of bisexual men in Vientiane and Hanoi.

As a partner in the AusAID-funded Women's and Children's Health Knowledge Hub, CIH undertook research to: analyse the barriers and enablers to adolescents accessing sexual and reproductive health information and services in Vanuatu; develop competencies for community health workers to provide quality services to adolescents; identify effective community interventions to save the lives of mothers and babies; increase the counselling and communication skills of maternal care providers; and assess health systems interventions for improving access to maternal and child health services in urban areas of the Philippines.

With AusAID, Burnet co-hosted a roundtable on developing a maternal and child health strategy. Burnet also hosted a technical consultation, sponsored by the WHO, on best practices and tools for preventing

Lao women and children benefit from Burnet's maternal and child health projects.

perinatal transmission of hepatitis B. CIH staff members were on the organising committee for the annual UN-DPI NGO conference held in Melbourne in September, and the institute co-sponsored a conference workshop on the unfinished agenda of sexual and reproductive health rights. Burnet hosted 16 participants from India, Mongolia, Sri Lanka, Indonesia, Fiji and Malaysia for a three-week program on healthy ageing, with the aim of establishing a Healthy Ageing Research Hub for Asia and the Pacific. Professor Mike Toole, Head of CIH, was appointed by the Director-General of the WHO to the Independent Monitoring Board of the Global Polio Eradication Initiative.

Myanmar (Burma)

Burnet has successfully completed the first year of co-implementation with three community-based partners to provide antiretroviral therapy to HIV-positive people with clinical AIDS. In collaboration with Myanmar Interfaith Network on AIDS, Burnet co-facilitated workshops to develop a common platform among religious organisations to respond to HIV and AIDS in communities, and from this, four religions reached a consensus on caring for people living with HIV with loving kindness and preventing stigma and discrimination against vulnerable people. To commemorate World AIDS Day, Burnet, in conjunction with Myanmar Anti-Narcotics Association, hosted an event named 'HIV/AIDS Knowledge Quiz with Celebrities and Entertainment'. The event attracted an audience of more than 1,000 people from all walks of life.

China (including Tibet Autonomous Region)

China-Australia Health and HIV/AIDS Facility (CAHHF) is now in its fourth year of implementation. The continued tightening of CAHHF's strategic focus towards funding policy-oriented research relevant to China's current health reform process has ensured the facility remains highly relevant to China's national health priorities. The AusAID-funded Tibet Health Sector Support Program (THSSP) concluded in June 2010 after six years of operation, having successfully contributed to significantly strengthened health systems in the Tibet Autonomous Region of China, in the areas of HIV testing and counselling, STI testing and treatment, development of clinical management protocols, strengthened approaches to health promotion and outreach, and the first prevalence survey in the region covering HIV and other STIs. Burnet successfully negotiated the continuation of the Cooperation Agreement that allows us to continue our important work in Tibet.

Indonesia

In May 2010, Burnet, along with other consortium members, was awarded a five-year USAID project for 'Scaling Up for Most-At-Risk Populations: Organisational Performance (SUM II)' which focuses on improving organisational performance to expand coverage of effective, integrated HIV interventions that lead to substantial and measurable behaviour change among most-at-risk populations, such as sex workers, men who have sex with men (MSM) and people who inject drugs. Two programs concluded in 2010, including 'Capacity Building for Local Responses to HIV Among Injecting Drug Users in Bekasi, West Java'. The evaluation showed that there is a marked increase in awareness of health risks and willingness to adopt harm reduction measures; however, there remains a reluctance to access public health services.

Sri Lanka, Vietnam and Malaysia

Burnet maintains its presence though partnerships in Sri Lanka (improving the health and well-being of elders), Vietnam (harm reduction and a sexual networking study) and Malaysia (harm reduction).

Mozambique

For more than 11 years, Burnet's work in Mozambique has focused on building the capacity of local non-government organisations that provide vital services to very poor communities grappling with the impact of the HIV epidemic. These services typically include: counselling; home-based care for the sick, and care and support of orphans and other vulnerable children. Burnet has taken an intensive approach to capacity building and worked closely with 30 organisations in Manica Province to maximise the potential for positive change. We established and educated a local team to train and mentor the 30 organisations in a range of topics, according to their needs.

Papua New Guinea

Burnet completed its management of the AusAID-funded Tingim Laip HIV prevention project and entered a new phase including relocation of headquarters to the School of Medicine and Health Sciences, University of PNG. The East New Britain Sexual Health Improvement Project continues to strengthen the capacity of local services and communities to prevent and treat STIs. Positive outcomes associated with this project include reported shifts in religious and cultural beliefs and values relating to sexual health issues; strengthened relationships between health workers and community advocates (Stret Tokers); and individual behaviour change, such as health care-seeking behaviour, condom use and a reduction in the number of sex partners.

Lao People's Democratic Republic

During its 12 years of operations, Burnet's Lao office has developed a niche area of work in peer education with MSM. Further peer education programs also include sex workers and youth, funded by the Australian government, Global Fund and other donors. A major focus of effort in 2010 was a large regional infrastructure initiative funded by the Asian Development Bank. This project has developed provincial and district HIV prevention teams consisting of representatives from different government sectors that are responsible for project implementation. The teams work with youth in villages along a new highway and also with private sector employees. Initial findings show a strong increase in HIV knowledge across all target settings. Funded by an Australian government development research grant, Burnet conducts innovative research that identifies network maps of sexual relationships in Vientiane and demonstrates how even individuals deemed as being in low risk categories are directly linked to high risk categories such as MSM.

Pacific Program

Burnet engaged with a number of Pacific countries through operational research and capacity development in the fields of drugs and alcohol, adolescent sexual and reproductive health, and infectious diseases. The Pacific Drug and Alcohol Research Network maintained its research capacity-building focus, and in February, the Australian National Council on Drugs launched Burnet's report 'Situational Analysis of Drug and Alcohol Issues and Responses in the Pacific 2008-09'.

The Women's and Children's Health Knowledge Hub partnered with Vanuatu-based NGO, Won Smol Bag, to conduct operational research exploring barriers to accessing sexual and reproductive health services. Burnet continued to support HIV programming through partnerships with regional agencies, such as the Secretariat of the Pacific Community, governments, and civil society in five Pacific countries reviewing and developing national strategies to respond to HIV and STIs. Preliminary work to establish research on HIV prevalence in Fiji's prisons was completed.

Postgraduate Students

46 PhD Students
11 Masters Students

Publications

159 Journal Articles
1 Book
2 Book Chapters
6 Comissioned Reports