

**UNSW**  
AUSTRALIA

**The Kirby Institute  
Annual Report 2013**

Never Stand Still

Medicine

The Kirby Institute



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**ACCESS TO  
HEALTH IS A  
HUMAN RIGHT.  
WE ARE FIGHTING  
TO PREVENT  
TRANSMISSION  
OF INFECTION  
EVERYWHERE IT  
LIVES. ACROSS  
THE POPULATION,  
EQUALLY.**



## Message from the Director



2013 has been a very good year for the Kirby Institute. We have had some excellent academic publications, important funding grants, and a series of professional awards, all of which serve as public recognition of the excellence of our research output. 2013 was also the year of our Inaugural Kirby Institute Symposium, titled *Treatment as prevention: where to from here?* This day-long event, opened by the Hon. Jillian Skinner, NSW Minister for Health and Minister for Medical Research, addressed one of the most important current questions in infectious diseases research, and hosted as keynote speaker Associate Professor Till Bärnighausen from the Harvard School of Public Health.

2013 also saw the completion of the SECOND LINE study (and its publication in the Lancet). This enormously important randomised controlled trial was the first time that second-line treatments, after first regimens had failed, were examined in low- and middle-income countries. A novel regimen containing a new class of therapy called integrase inhibitors demonstrated equivalent outcomes to the validated WHO standard of care, giving patients and clinicians a real choice in second-line therapy.

Three members of staff – Drs Mark Boyd, Steve Kerr and Handan Wand – achieved promotion to the rank of Associate Professor and a number of important funding grants were announced or commenced in 2013. Professor Tony Butler, head of Kirby's Justice Health Research Program, was part of the successful bid to establish the Centre for Research Excellence in Offender Health, being awarded \$2.5m. Professor John Kaldor, head of Kirby's Public Health Interventions Research Group, received the largest partnership project grant for STRIVE Plus, a continuation of the novel and groundbreaking STRIVE study. This builds on his project grant to increase testing and treatment for endemic STIs in remote Aboriginal communities.

Ahead of World Hepatitis Day we released the first set of global recommendations for treating hepatitis C virus in people who inject drugs. These were developed in collaboration with colleagues from the International Network on Hepatitis Care in Substance Users (INHSU). The burden of liver disease could be dramatically reduced by increasing treatment for hepatitis C infection among people who inject drugs.

The 2013 Annual Surveillance Reports showed that the number of newly diagnosed cases of HIV infection in Australia continues to rise, having increased by ten per cent in 2012 to reach 1253, the largest number in 20 years. The rates of chlamydia and gonorrhoea diagnosis also increased. Aboriginal and Torres Strait Islander peoples living in remote communities had disproportionately higher rates of chlamydia and gonorrhoea. An estimated 230,000 people were living with chronic hepatitis C in 2012, an annual increase of 5,300; the estimated number of people living with chronic hepatitis B was 207,000, an annual increase of 9,000.

We will host our second annual symposium on 17 July, 2014. This event is affiliated to the International AIDS Conference (AIDS 2014) in Melbourne the following week. This presents Australia with an opportunity to bring to the forefront of public consciousness the issues we still face in our mission to end HIV/AIDS. AIDS 2014 will be a tremendous opportunity to showcase our contribution to the science that has changed the face of HIV/AIDS. It also presents an invaluable opportunity to learn from our global partners and be inspired to propel our world-leading research into the future.

A handwritten signature in dark ink, appearing to read 'David Cooper', written in a cursive style.

Professor David A Cooper AO

## Message from our Patron

As this Annual Report goes to press, we are on the brink of important and exciting developments for the Kirby Institute and the world.

For the Institute, the move in May 2014 to the new facilities on the UNSW Kensington campus brings together groups of researchers who have so far been scattered. Now they will be housed in the ambitious cutting-edge research facilities in the redeveloped Wallace Wurth building (as well as in the St Vincent's Research and Biotechnology Precinct in Darlinghurst). I acknowledge the \$20 million grant from the Commonwealth and a matching grant from the State of New South Wales and the University. The remaining funds have come through philanthropic gifts and community support.

All of these subventions will advance the Institute's research at every stage: from basic cell biology to designing therapies, behavioural surveillance, studies of risk behaviour and preventive interventions. This is where the next generation of leading Australian scientists will be trained to take the research success of the Institute into an exciting future.

In addition, the Kirby Institute's research program is increasingly taking on a regional focus. There are major collaborative programs in Papua New Guinea, Indonesia and in South East Asia, including Cambodia and Thailand. These are key partnerships which we cherish. They will help improve access to anti-retroviral treatment. They will save lives and re-enforce our country's links with its neighbours.

Defeating the epidemics of HIV, viral hepatitis and other sexually transmitted infections constitutes one of the greatest medical and social challenges of our time. By focusing research on biology and on prevention and treatment of infectious diseases, Kirby Institute at UNSW is working towards the ultimate goal of eradicating blood borne infections and the burden that disease places on individuals, communities and nations. Our work is at once scientific, communitarian and dedicated to the service of human beings.

The Kirby Institute, from its earliest days, has worked closely with the extremely vulnerable populations in that are most at risk from blood borne diseases. I refer to Indigenous populations (especially in regional, rural and remote areas) women in resource limited countries, sex workers, people who use drugs, young people and gay communities, upon whom the blight of disease has fallen so heavily.

At present, the Kirby Institute is investigating technologies that include rapid testing and immediate antiretroviral therapy to interrupt HIV transmission and to turn the tide of that epidemic. It has given critical leadership to decision-makers in Australia and internationally on the most efficient and sustainable strategies to address deadly epidemics.

Our work in laboratories is focused on finding ways to control HIV infection, develop new and more accessible antiretroviral therapies and, ultimately, to produce safe vaccines. The Institute monitors trends in viral hepatitis and contributes to policy initiatives on interventions that will prevent the transmission of hepatitis C: one of the most commonly reported notifiable infections in Australia. We are conducting trials to improve in the diagnosis and management of STIs in remote communities of Australia's Indigenous peoples where there have been disproportionately high rates of infection. All this is ground breaking, important and lifesaving work.

The coming second annual symposium of the Kirby Institute in July 2014 will coincide with the commencement of the International AIDS Conference in Melbourne in which the Institute and its members will play a highly visible part. We will be glad to welcome some of the finest world scientists, who will be visiting Australia, to join in the inauguration of our new Kensington facility. The spotlight of the world's attention will be on the good things we have done in Australia and the region to confront HIV. Necessarily, the spotlight will also shine in places where we can learn from others and improve our own efforts.

I cannot conclude this message without words of thanks and praise to our benefactors, university and hospital colleagues, staff and supporters. All of us were proud that Professor David Cooper, Director of the Institute was singled out as one of the ten leading innovators of UNSW for his early and continuing path-breaking work on antiretroviral therapies for HIV/AIDS. The past has been exciting. Even greater achievements lie ahead.



The Hon. Michael Kirby AC CMG



## About us

The Kirby Institute is a leading global research institute dedicated to the prevention and treatment of HIV, viral hepatitis and sexually transmissible infections.

The Kirby Institute for infection and immunity in society was formed on the 25th anniversary of the establishment of the National Centre in HIV Epidemiology and Clinical Research (NCHECR). In 2011, the Institute was named for the Hon. Michael Kirby AC CMG former High Court judge of Australia in recognition of his services at a national and international level to HIV AIDS and human rights.

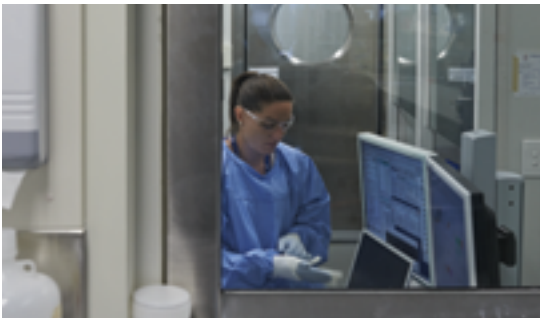
Our primary functions relate to the coordination of national surveillance programs, clinical research and clinical trials. While our original focus was exclusively on HIV/AIDS, our work has expanded to encompass viral hepatitis and sexually transmissible infections with a special focus on Aboriginal and Torres Strait Islander populations.

Our work in the laboratory is focused on finding ways to control infections, develop new therapies and ultimately, preventative vaccines. Outside of the laboratory, we provide critical leadership to decision makers in Australia and internationally on the most effective, efficient and sustainable strategies to address deadly epidemics.

Our clinical and behavioural research programs work in partnership with communities most affected by epidemics to implement trials of behavioural and biomedical prevention interventions designed to prevent the spread of infectious diseases in vulnerable populations.

The Institute's research has increasingly taken on a regional focus. Over the past two decades, we have developed collaborative programs in several countries that have involved training health workers and health researchers in the Asia Pacific region, advising governments on public health and clinical policy, and working to increase access to essential medicines. We have maintained particularly strong partnerships in Thailand since 1996 in collaboration with the Thai Red Cross ([www.hivnat.org](http://www.hivnat.org)), in Cambodia since 2002, and in Papua New Guinea and Indonesia.

The Kirby Institute has a staff of over 260 public health, clinical and laboratory scientists, research assistants and postgraduate students. We are fully affiliated with the Faculty of Medicine at UNSW Australia.







## Research programs

**The Kirby Institute conducts our research through eleven research programs and groups:**

### Aboriginal and Torres Strait Islander Health Program

The Aboriginal and Torres Strait Islander Health Program works collaboratively with the National Aboriginal Community Controlled Health Organisation, its State and Territory-based affiliate organisations and Aboriginal Community Controlled Health Services to close the gap in health between Aboriginal and Torres Strait Islander and non-Indigenous people, with a focus on sexual health and blood borne viruses. In doing so, the program engages in strategies that are designed to enhance the capacity of Aboriginal and Torres Strait Islander communities in health improvement.

### Biostatistics and Databases Program

The Biostatistics and Databases Program has a collaborative biostatistical role across many of the Kirby Institute's programs. This includes developing traditional CRF and web-based databases for research and surveillance studies, and ensuring the statistical design and analysis of clinical trials and epidemiological studies are to appropriate international standards. The program has independent research activities in large observational cohort studies and linkage studies, and an active mathematical modelling group, working in HIV, HBV, HCV and STIs. The program has active large collaborations across Australia, Asia-Pacific, Africa and Europe.



Associate Professor Rebecca Guy, Program Head (acting)



Professor Matthew Law, Program Head



Professor John Kaldor, Program Head (acting)

### HIV Epidemiology and Prevention Program

The HIV Epidemiology and Prevention Program (HEPP) conducts research into the transmission and prevention of HIV and sexually transmissible infections (STIs), and on the natural history of HIV. The program works in partnership with communities most affected by HIV, particularly the gay community and those people living with HIV. Their work includes behavioural risk surveillance, studies of risk behaviour and studies of use of biomedical preventive interventions. Researchers in HEPP also conduct a range of work on the intersection of infection, immunity and cancer to inform our knowledge of how we might prevent cancer in people with HIV.



Professor Andrew Grulich, Program Head

### Immunovirology and Pathogenesis Program

The Immunovirology and Pathogenesis Program is primarily involved in basic HIV research, with specific projects on various stages of the HIV infection, including transmission and the body's defence against the virus, and how these are modulated by therapies. The program conducts clinical and natural history studies in unique populations of patients with HIV-infection, such as those rare individuals who control HIV infection without therapy. Identifying the reasons why this group remain healthy, without damage to their immune systems, is extremely important for understanding control of HIV infection, and for developing new therapeutic interventions and preventative vaccines. The program also provides laboratory support for clinical and epidemiological studies across many of the Kirby Institute's programs.



Professor Anthony (Tony) Kelleher, Program Head

### Justice Health Research Program

The Justice Health Research Program compliments the Institute's approach to health and human rights, particularly among marginalised populations, including Aboriginal and Torres Strait Islander people. The Program undertakes research into a broad range of health issues affecting Australia's offender populations including communicable diseases, access to hepatitis C treatment in prison, mental health, sexual health, tobacco smoking, impulsivity, and alcohol use. Their work includes the national surveillance of blood-borne viruses and sexually transmissible infections among prison entrants, research into traumatic brain injury among prisoners, and juvenile offenders' sexual health. The Program is examining the use of citizens' juries in the decision making processes.



Professor Tony Butler, Program Head

## Research programs

### Public Health Interventions Research Group

The Public Health Interventions Research Group undertakes a diverse range of projects that focus on the evaluation of strategies to prevent infectious disease. The program collaborates extensively, both within the Kirby Institute and externally, and emphasises research that benefits the health of disadvantaged populations in Australia and the Asia-Pacific Region. Much of their work also has a strong capacity-building component. The group is currently involved in projects related to the control of HIV, sexually transmissible infections, viral hepatitis, tuberculosis, scabies and trachoma. Countries of activity include Australia, Papua New Guinea, Indonesia, Cambodia and Fiji.

### Sexual Health Program

The Sexual Health Program leads and collaborates in research into the epidemiology, surveillance, microbiology, clinical management, and prevention of sexually transmissible infections (STIs); including chlamydia, syphilis, gonorrhoea, human papillomavirus infection, herpes simplex virus infection, and HIV infection. The program also conducts research into the behaviour and sexual health of priority populations for STI control such as youth, Aboriginal and Torres Strait Islander people, men who have sex with men, sex workers, prisoners and travellers. A particular focus is methods to increase STI/HIV testing using rapid point-of-care tests.

### Surveillance and Evaluation Program for Public Health

The Surveillance and Evaluation Program for Public Health monitors the pattern of transmission of HIV, viral hepatitis, specific sexually transmissible infections, transfusion transmissible infections and trachoma in Australia. The program conducts applied mathematical modelling studies, assessing past and expected epidemic trends with their financial implications. They also conduct efficiency studies of HIV programs and inform national strategic planning, operational plans and budgeting, including optimal resource allocation and financing with governments, and global health and multilateral organisations around the world.



Professor John Kaldor, Program Head



Professor Basil Donovan, Program Head



Associate Professor David Wilson, Program Head

### Therapeutic and Vaccine Research Program

The Therapeutic and Vaccine Research Program conducts a range of clinical trials designed to assess the effectiveness of new HIV therapies and therapeutic strategies. These studies provide data that have an impact on policy and clinical practice, in both resource-rich and resource-limited settings. The program is the international co-ordinating centre for the INSIGHT network, a major international collaboration for the conduct of large clinical endpoint strategic trials in HIV disease which has more than 300 sites in 30 countries. The program also co-ordinates the activities and operations of an international network in over 20 countries on seven continents in which investigator-initiated research is performed.

### Viral Hepatitis Clinical Research Program

The Viral Hepatitis Clinical Research Program is an international leader in hepatitis C research, particularly in key affected communities such as people who inject drugs and HIV co-infected populations. Clinical research, including clinical trials of acute and chronic HCV therapy, forms the main part of the program's work. The program is also involved in laboratory research, particularly molecular virology, and natural history studies in acute and chronic HCV infection, and HBV infection and preventative vaccines. The program also provides laboratory support for clinical and epidemiological studies across many of the Kirby Institute's programs.

### Viral Hepatitis Epidemiology and Prevention Program

The Viral Hepatitis Epidemiology and Prevention Program conducts research examining viral hepatitis and other infections in vulnerable populations, including people who inject drugs and female sex workers. In partnership with affected communities, the Program develops innovative approaches to identify and respond to infectious diseases by 1) integrating surveillance and epidemiological data to estimate incident infections and assess the effectiveness of interventions; 2) advancing methodological approaches through data integration, pooling and linkage; 3) trialing new prevention interventions; 4) building capacity for research, surveillance, and harm reduction through training and technical assistance; and 5) informing public health responses by translating outcomes into policy and practice.



Professor Sean Emery, Program Head



Professor Greg Dore, Program Head



Professor Lisa Maher, Program Head

## Campaign for the Kirby Institute

In 2013, generous supporters of the Kirby Institute continued to contribute to our ambitious \$80 million capital campaign.

Launched in 2011, the capital campaign for the Kirby Institute is funding our new world-class research facilities in the redeveloped Wallace Wurth Building on UNSW's Kensington campus and in the St Vincent's Research and Biotechnology Precinct in Darlinghurst.

With \$20 million from the Commonwealth, \$20 million from the state of New South Wales and \$20 million from the University, a remaining \$20 million is being sought through philanthropic gifts and community support.

Most notable among the philanthropic gifts is the \$10 million pledge from The Atlantic Philanthropies to match all donations made to the Kirby Institute dollar for dollar.

Inspired by this matched funding challenge and the vital contribution of the Kirby Institute in alleviating global health challenges, other significant contributors include the Estate of the late Peter Ikin, the Berg Family Foundation, The Glendonbrook Foundation, The Roth Charitable Foundation, Mr Geoffrey Alder, and an anonymous donation of \$1,000,000.

At the end of 2013, philanthropic gifts, including matching grants from The Atlantic Philanthropies, had contributed approximately \$13.8 million towards the \$20 million goal, leaving \$3.1 million to be raised to maximise the \$10 million grant from The Atlantic Philanthropies.

In May 2014, the Kirby Institute will commence moving into our new facilities, with the official grand opening scheduled for July 2014.



### Where world-class research lives

The Kirby Institute at Kensington: Our primary research hub will be on the UNSW Kensington campus. Here, our experts will advance every stage of research into the HIV/AIDS epidemic, viral hepatitis and sexually transmissible infections, with a particular focus on vulnerable populations. It is also where we will train the next generation of scientists to take our research success into the future. Our new facilities will enable greater collaboration between research groups within the Institute and a more effective partnership with other scientists at UNSW.



The Kirby Institute at Darlinghurst: We plan to develop a new facility to support our clinical research program in the St Vincent's Research and Biotechnology Precinct. Here, our scientists will continue to engage with our local patient populations and conduct clinical trials to determine the best new prevention and treatment methods that work on the ground and in the community.

**“FROM SMALLER, RECURRING GIFTS TO THE LANDMARK MILLION-DOLLAR DONATIONS, WE ARE TRULY GRATEFUL FOR EVERY DOLLAR ENTRUSTED TO US. THE GENEROSITY AND FAR-SIGHTEDNESS OF OUR SUPPORTERS WILL DO MORE THAN ADD STORIES TO BUILDINGS – IT WILL SET THE STAGE FOR SOME REMARKABLE STORIES OF DISCOVERY AND INNOVATION THAT WILL MAKE A DIFFERENCE TO SOME OF THE MOST VULNERABLE PEOPLE IN AUSTRALIA, OUR REGION, AND THE WORLD.”**

– Professor David A Cooper AO, Director of the Kirby Institute.







**A snapshot of some of the Kirby Institute’s key projects from the past year**

**Shimmer**

For the past decade, higher notification rates of chlamydia and gonorrhoea have been reported in Aboriginal and Torres Strait Islander people than non-Indigenous people, with the highest rates reported in 15-29 year olds and those living in regional and remote areas of Australia. Untreated chlamydia and gonorrhoea can lead to poor reproductive health outcomes such as pelvic inflammatory disease, infertility and poorer pregnancy and neonatal outcomes. Although both STIs are easily treated with antibiotics, the majority of infections do not have any symptoms and as a result people do not seek testing. This highlights the importance of testing young people for chlamydia and gonorrhoea to identify infections early, before poor health outcomes occur.

Through a sexual health quality improvement program known as SHIMMER, researchers at the Kirby Institute collaborated with four regional Aboriginal Community Controlled Health Services (ACCHS) to increase chlamydia and gonorrhoea testing among young Aboriginal clinic attendees. The program involved extracting de-identified data; visiting the ACCHS every six months to present attendance, testing and infections rates; and the clinic staff developing strategies to enhance STI testing and management practices.

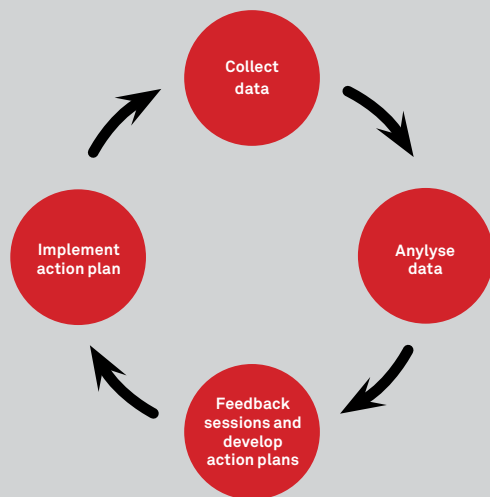
“The ACCHS in regional areas of New South Wales were able to triple the amount of STI testing they were doing among young Aboriginal people by taking a systematic approach and offering testing opportunistically in non-sexual health consultations,” reported Simon Graham, Project Manager of the SHIMMER program.

The ACCHS participating in SHIMMER achieved a STI testing rate three times greater than non-Aboriginal 15-29 year olds attending general practice clinics in Australia and detected double the number of chlamydia and gonorrhoea infections.

SHIMMER has now been expanded to other ACCHS in New South Wales.

Program: Aboriginal and Torres Strait Islander Health Program  
Funding: NSW Ministry of Health

The SHIMMER process



### Experiences of HIV: The Seroconversion Study

The HIV Seroconversion Study identifies demographic, behavioural, social, situational and other characteristics in individuals recently diagnosed with HIV infection.

“In order to improve education in both individual counselling and community-wide strategies, we need to have an understanding of those factors associated with HIV infection and individuals’ experiences of diagnosis and the period after diagnosis,” said Ian Down, co-author of the Seroconversion Study Report and project manager of the study.

In 2013, the report examined the apparent absence of non-condom based risk reduction strategies being used by men at the time they believe they acquired HIV. Additionally, as policy shifts towards encouraging earlier treatment for people with HIV, the latest report describes potential barriers to scaling up treatment uptake, such as low levels of knowledge about advances in HIV medicine. Data collection and analysis is ongoing.

The study aims to recruit at least one hundred recently diagnosed individuals across Australia each year to complete a self-administered questionnaire online. In addition, about twenty in-depth interviews with individuals who have recently been diagnosed with HIV are conducted. Participants are recruited through community organisation programs servicing those who have recently been diagnosed, and through clinic sites with a high caseload of recent HIV diagnoses, as well as through more broad-based publicity.

The study has been ongoing since 2007 and is a collaboration between the Kirby Institute and the Australian Research Centre in Sex, Health and Society at La Trobe University and AIDS Councils and HIV organisations around the country.  
To find out more: [www.hivss.net](http://www.hivss.net)

Program: HIV Epidemiology and Prevention Program  
Funding: NSW, VIC, QLD, WA, ACT & NT State and Territory health departments

### SiRNA

Today’s drug treatments allow HIV positive people to live longer and healthier lives and dramatically reduce their capacity to pass on infection. And while standard antiretroviral therapy can suppress viral load to virtually undetectable levels in the body, there still exists within the body of an HIV positive person a reservoir of virus that will rapidly begin to spread if treatment is interrupted. Many scientists believe that the next major advance in HIV therapy will be one that effectively challenges this viral reservoir, so that drug treatment is not required for the entirety of an infected person’s life.

In examining ways to respond to this challenge, researchers at the Kirby Institute have developed new ways to silence HIV, effectively putting it to sleep for long periods of time after a single treatment. This strategy involves silencing viral transcription and is based on novel small interfering RNA (siRNA) technology. Briefly through expression of a specific RNA sequence that matches a common sequence within the viral DNA located within the cells genome, the virus is kept asleep. This programmed sleep is achieved through by blocking the normal cellular pathways that are initially hijacked and give rise to infectious viral progeny (or offspring). We are now exploring ways to successfully take this from the lab to the clinic as a new type of gene therapy, which could serve as a functional cure of HIV-infection.

Program: Immunovirology and Pathogenesis Program  
Funding: NHMRC project grant scheme

**“IN OFFENDER HEALTH, EVERYTHING THAT CAN GO WRONG HAS GONE WRONG. DEPRIVED BACKGROUNDS, POOR EDUCATION, HIGH RATES OF SMOKING AND DRUG USE, SEXUAL AND EMOTIONAL ABUSE – AND WITH THAT COMES POOR MENTAL AND PHYSICAL HEALTH AND POOR ACCESS TO HEALTH SERVICES.”**

*– Professor Tony Butler From Broome to Berrima The Indigenous Offender Capacity Grant.*

### **Broome to Berrima: The Indigenous Offender Capacity Grant**

A Kirby Institute highlight for 2013 was the commencement of the Centre for Research Excellence in Offender Health. This CRE, under Professor Tony Butler, head of the Kirby's Justice Health Research Program, is a direct outcome of an earlier capacity-building grant which began in 2009.

Australia has one of the highest Indigenous incarceration rates of all OECD countries. Offender populations already have a far greater health burden compared to the general community, and Indigenous Australians make up a quarter of the prison population. There is a need to develop knowledge in this area, particularly in relation to Indigenous incarceration.

"Offender health is years behind, equivalent to diabetes research decades ago," Professor Butler says. "In offender health, everything that can go wrong has gone wrong. Deprived backgrounds, poor education, high rates of smoking and drug use, sexual and emotional abuse – and with that comes poor mental and physical health and poor access to health services. Prison is an under-utilised public health opportunity to address some of these health issues before they are released back to the community in a revolving door process."

This grant [\$2.5 million over five years] is to develop research capacity in Indigenous offender health research. Professor Mick Dodson of the ANU is the mentor and figurehead for this work in which ten researchers, the majority of whom are Indigenous, have addressed some of the social determinants of Indigenous offending, including alcohol, social capital, pathways into offending, and citizens' juries. The work has been national, represented in New South Wales, the Australian Capital Territory, Western Australia and previously Queensland.

Program: Justice Health Research Program  
Funding: NHMRC

### **Social media and adolescent sexual health**

"Early sexual activity is linked to adverse health outcomes in adolescents," Associate Professor Rebecca Guy, of the Kirby's Sexual Health Program, says. "It's also becoming more common. We know that one risk factor for early and risky sex is exposure to sexual content on the internet, but as yet, there is no published qualitative research exploring this relationship in depth."

A/Professor Guy is leading a study designed to elicit how adolescents are exposed to sexual content, the context and meanings of interactions they have which involve sexual content, and how these interactions shaped their experience and perceptions of relationships in general.

She is presently recruiting students aged 12-16 years, and parents and teachers of students in the same age group, from metro and suburban independent Sydney schools. Focus groups with students of similar age and same gender will be held. The use of a qualitative design will give a picture of adolescent experiences with sexual content in new media and a better understanding of parents' and teachers' perceptions and dealings with those experiences.

"We expect to be able to describe what types of new media adolescents use, in what ways and in what contexts," Guy says. "We will document how adolescents react to interactions of a sexual nature as well as the language they use to describe these interactions. It's also important that we can explore what parents and teachers are aware of, and describe how parents and teachers communicate with adolescents concerning sexual content online."

Program: Sexual Health Program

## Abstracts

### SECOND-LINE means new options for therapy

The roll-out of antiretroviral therapy in developing countries has been ramped up effectively in recent years, and with it has come a predictable increase in failure of first-line regimens. The SECOND-LINE study, co-ordinated by the Kirby's Therapeutic and Vaccine Research Program, has produced an evidence-based strategy for safe and effective treatment of patients in whom first-line treatment has failed. The RCT compared the WHO-recommended second-line treatment regimen (a ritonavir-boosted protease inhibitor (lopinavir) plus two or three nucleoside or nucleotide reverse transcriptase inhibitors) with a new combination regimen of ritonavir-boosted lopinavir plus the integrase inhibitor, raltegravir.

The new regimen has equal efficacy to the WHO-recommended second-line treatment, in particular comparative rates of virological suppression (<200 copies/mL) in the plasma viral load, and also has other potential advantages. A single treatment comprising two (rather than more) different drugs for patients requiring second-line treatment will ease pressure on drug stocks. In addition, less complex regimens might allow treatment to be delivered by health-care workers other than doctors, improving access to HIV care in limited-resource settings. Also, because the rescue treatment consists of two drugs from antiretroviral classes to which patients have not been previously exposed, genotypic resistance testing is not needed. Finally, the raltegravir regimen is likely to cause fewer toxic effects than NtRTI-based treatments. But these advantages are countered by the greater cost of raltegravir, which at present is unaffordable for many developing countries.

Programs: Therapeutic and Vaccine Research Program and Sexual Health Program  
Funding: Merck, AbbVie, amfAR and NHMRC

### New hazards for young women sex workers

In Cambodia, where the HIV epidemic is driven by sexual and drug use behaviours and socioeconomic disparities, female sex workers remain at high risk of infection. Conducted by a collaborative involving researchers from UCSF, the Kirby Institute, FHI 360, Samic and the Cambodian Ministry of Health, the Cambodia Integrated HIV/Drug Use Prevention Intervention (CIPI) is the first intervention trial in Cambodia aimed at reducing amphetamine-type substance (ATS) use and sexual risk behaviour among female sex workers. Researchers are assessing the impact of a Conditional Cash Transfer (CCT) program with group-based supportive after care in reducing amphetamine-type stimulant (ATS) use and HIV risk behaviour. Also being assessed is a Microenterprise program combining financial literacy education and microloan opportunities for ATS-free female sex workers. Outcomes being evaluated both pre- and post-intervention include self-report and biomarkers of drug use and sexual risk, HIV antibody status, and economic security indicators.

Formative research conducted with female sex workers to inform the study protocol and key operational needs indicated that the proposed intervention was acceptable to the target group and feasible. Of the ten provinces that will receive the intervention in a stepped-wedge rollout four have initiated to date, with 371 female sex workers enrolled. Activities in the six remaining provinces will conclude by 2015 and evaluation in 2016. Results will inform future HIV prevention efforts among female sex workers in low and middle-income countries.

Program: Viral Hepatitis Epidemiology and Prevention Program  
Funding: The United States National Institutes of Health (NIH)

**About 35 million people are living with HIV worldwide, most of them in lower and middle-income countries. Presently about 10 million people are on antiretroviral therapy.**

### The biggest bang for the HIV buck: allocating resources efficiently

International funding for HIV (and related) programs in middle-income countries is expected to decline in future years, and there is a risk that gains made through past funding may be eroded or lost. Through contracts with the World Bank, a team from the Kirby Institute's Surveillance and Evaluation Program for Public Health, led by Associate Professor David Wilson, has developed an approach to evaluate a country's spending and determine the optimal alignment of funds to HIV/AIDS programs. They also assess the minimum amount of money required from donors and domestic sources to address political and health-related objectives.

"Allocation of resources is complex," says Kirby lecturer and team member Dr Richard Gray. "We looked at a number of countries, at their public health objectives in relation to HIV, and the way they could spend their funding to get the best outcomes in terms of HIV transmission. From this, we propose a new approach for determining the best, or most efficient, allocation of resources in any country, to meet their strategic goals."

This approach also shows that the optimisation of resources in the short-term by spending the funds in a way most likely to achieve the country's public health targets, such as the virtual elimination of mother-to-child transmission, reaching 90 per cent coverage of antiretroviral treatments for HIV-positive citizens, and reducing HIV incidence by 50 per cent, will result in large long-term savings.

Program: Surveillance and Epidemiology Program for Public Health

### The "Medicare ineligible" study

Researchers from the Kirby Institute and the National Association of People with HIV Australia (NAPWA) released results from the first study in Australia to collect information on HIV positive patients who are not eligible for Medicare.

The Australian HIV Observational Database Temporary Residents Access Study (ATRAS) provided antiretroviral treatment (ART) via a compassionate access scheme for up to four years to 180 HIV-positive people who were temporary residents in Australia.

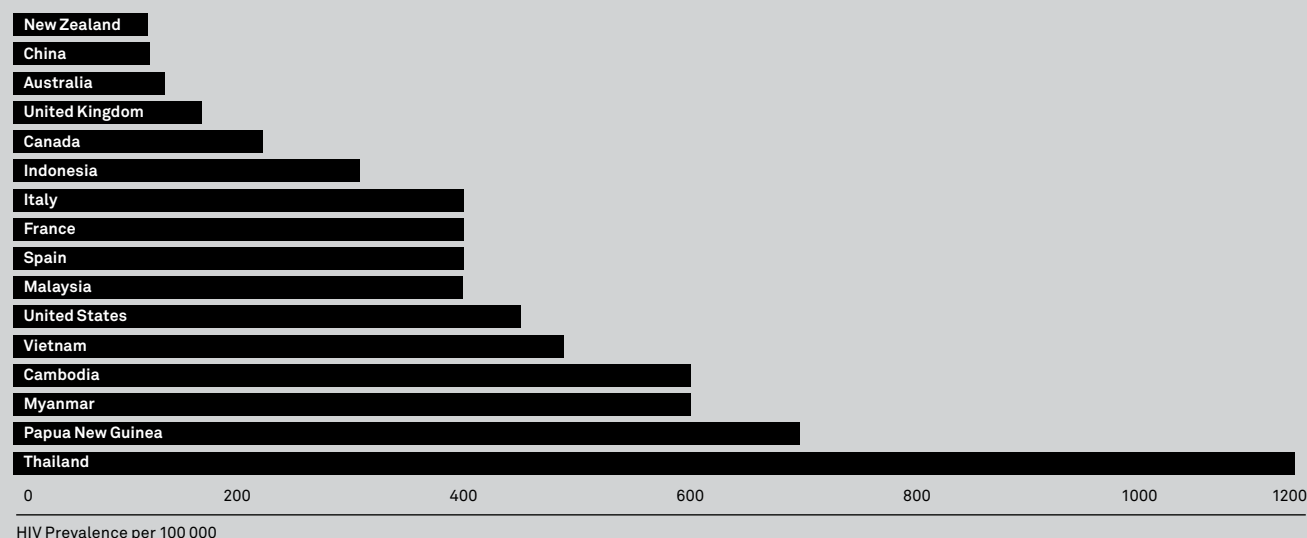
An estimated 450 HIV-positive patients are currently not eligible for Medicare in Australia and therefore may have to choose between independently funding their treatment, settling for sub-optimal treatment or delaying treatment altogether.

Researchers found significant immunological and virological improvements in patients after six months of commencing treatment. The proportion of study participant with detectable viral load (the amount of virus in the blood) decreased from 53 per cent when the study began, to 12 per cent after one year, demonstrating a potentially significant impact on the risk of onward HIV transmission. The study also found that a large proportion of HIV positive temporary residents will eventually become eligible for Medicare or leave the country and therefore not require further treatment in Australia.

Follow-up studies are examining transmission rates in HIV-positive temporary residents who do not receive effective treatment and the cost effectiveness of treating people who cannot access Medicare in Australia.

Program: Biostatistics and Databases Program

### HIV Prevalence in selected countries



From the Kirby Institute HIV, viral hepatitis and sexually transmissible infections in Australia Annual Surveillance Report 2013





**THE FIELD OF  
BLOOD-BORNE  
VIRUSES FAR TOO  
OFTEN INTERSECTS  
WITH ISSUES OF  
DISCRIMINATION,  
POVERTY,  
GENDER AND  
DISEMPOWERMENT.**

Sammy Chow is a Research Assistant in the Viral Hepatitis Epidemiology and Prevention Program. He facilitates the running of the HITS-c study (page 50), both in the field and in the office and assists with the Australian Needle and Syringe Program Survey.

## Staff and researchers

---

### Director's Office

#### Director and Scientia Professor of Medicine

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### Aboriginal and Torres Strait Islander Program

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#### Senior Lecturers

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### HIV Epidemiology and Prevention Program

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### Immunovirology and Pathogenesis Program

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### Justice Health Program

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**Public Health Interventions  
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**Sexual Health Program****Head and Professor of Sexual Health**

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## Staff and researchers

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### Viral Hepatitis Clinical Research Program

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### Researchers affiliated to Kirby Institute

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#### Senior Visiting Fellows

Philip Cunningham BAppSc(Med),  
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Robert Myers

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Bruce Brew MB BS(Hons), MD, FRACP,  
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Nick Crofts MB BS, MPH, FAFPHM, Professor  
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Mark Sullivan BSc, Chief Operating Officer,  
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Alex Wodak MB BS, MRACP, FRACP, MRCP, FAFPHM,  
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#### Conjoint Associate Professors

Jintanat Ananworanich MD PhD, Deputy Director,  
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#### Honorary Senior Lecturer

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Phillip Read BSc, MBBS, MRCP, DipGUM, DFFP,  
DipHIV, MPH, FChSHM, Post-graduate Fellow,  
Sydney Sexual Health Centre, Sydney Hospital  
Kathy Triffitt BA, Grad Dip, Ph D, Manager, Health  
Promotion, Positive Life NSW

#### Research Officer

Tetsuo Tsukamoto

## Students and student supervison list

Candidates	Research	Supervisors
<b>PhD Students</b>		
Amit C Achhra	Bio-markers and other predictors of AIDS and non-AIDS diseases in HIV Aobservational (cohort) studies	David Cooper, Janaki Amin, Matthew Law
Maryam Alavi	Barriers to the assessment and treatment of hepatitis C virus infection in injecting drug users	Greg Dore, Jason Grebely
Hammad Ali	Surveillance systems for STIs: understanding a changing epidemiology	Rebecca Guy, Basil Donovan, David Wilson
Sofia Bartlett	Molecular epidemiology of acute hepatitis C virus infection in Australia	Tanya Applegate
Ben Bavinton	HIV viral load and transmission in serodiscordant male homosexual couples.	Andrew Grulich, Garrett Prestage
David Boettiger	Adult and pediatric antiretroviral therapy in Asia: Results from the TREAT Asia HIV Observational and TREAT Asia Pediatric HIV Observational Databases	Matthew Law, Azar Kariminia, Stephen Kerr, Rossana Ditangco, Prof Pragakrong Lumbiganon
Louise Causer	Rapid points of care (RPOC) tests for diagnosis of sexually transmitted infections (STIs): evaluation of accuracy, acceptability and impact in Australia and Papua New Guinea (PNG).	John Kaldor, Rebecca Guy
Eric Pui Fung Chow	Understanding the past, forecasting the future – investigating the epidemiology of HIV/AIDS in China	Lei Zhang, David Wilson
Paul Clark	Barriers to Hepatitis C treatment and cure.	Greg Dore, Alex Thompson (St Vincent's Hospital, Melbourne), Gail Matthews
Damian Conway	Novel approaches to HIV testing for men who have sex with men.	Rebecca Guy, Martin Holt (NCHSR), Andrew Grulich
Laura Cook	Characterisation of T regulatory cells	Tony Kelleher, Nabila Seddiki, David Van Bockel, Mee Ling Munier
Andrew Peter Craig	Biomathematical and biostatistical modelling of Chlamydia infection, immunity, pathology and vaccine strategies	David Wilson
Ian Down	Meanings of HIV and 'safe-sex' among a sample of recently diagnosed gay men in Australia	Garrett Prestage, Jeanne Ellard Tony Butler, Jill Guthrie (ANU), Michael Doyle and Anthony Shakeshaft (NDARC)
Michael Doyle	Prison based alcohol and related other drug use treatment for Aboriginal and non-Aboriginal inmates in NSW	Tony Butler, Jill Guthrie (ANU), and Anthony Shakeshaft (NDARC)
Brigitte Gerstl	Biostatistics, epidemiology, public health	Handan Wand
Simon Graham	Quality improvement in Aboriginal Community Controlled Health Services in New South Wales	Rebecca Guy; Handan Wand
Behzad Hajarizadeh	Diagnosis and natural history of acute hepatitis C virus infection	Greg Dore; Jason Grebely, Tanya Applegate
Hila Haskelberg	Antiretroviral toxicity in HIV-infected patients	Sean Emery, Andrew Carr (St Vincent's Hospital), Janaki Amin
Belinda Hengel	What works? Improving Primary Health Care Centre access and STI amongst young people in remote Aboriginal and Torres Strait Islander communities in Australia	John Kaldor, Rebecca Guy, Lisa Maher
William Hey-Cunningham	Delineation of the latent HIV reservoir with subpopulations of Memory CD4 T cells	Tony Kelleher, Kersten Koelsch, John Zauanders (SVH)
Tina Hitchen	The Role of Dynamin-II in HIV Pathogenesis	Stuart Turville; Phillip Robinson (University of Sydney)
Denise Chee Hsu	Using novel biomarkers to define the role of TB specific effector T cell and TB specific regulatory T cell in patients with Mycobacterium tuberculosis (TB) and HIV co-infection	David Cooper, Tony Kelleher Jintanat Ananworanich (HIVNAT)
Jennifer Iversen	Epidemiology of hepatitis C virus among people who inject drugs in Australia: Prevention coverage	Lisa Maher, Libby Topp, Handan Wand
Brendan Jacka	Viral epidemiology of multiple Hep C infections in international high risk populations	Tanya Applegate, Jason Grebely, Greg Dore

Candidates	Research	Supervisors
Awachana Jiamsakul	Drug resistance and adherence to antiretroviral therapy in HIV infected patients in Asia	Matthew Law, Stephen John Kerr, Somnuek Sungkanuparph
James Jansson	Mapping HIV outcomes: geographical and clinical forecasts of people living with HIV in Australia	David Wilson, Richard Gray
Amy Kwon	Using mathematical modelling to evaluate public health interventions for viral epidemics	David Wilson, Rosie Thein, Cliff Kerr
Linh-Ve Le	HIV incidence and predictors of sexual and drug injecting behavioural risk among female sex workers/men who have sex with men in Vietnam	John Kaldor, Lisa Maher, Keith Sabin (WHO, Hanoi)
Frederick Ji-Yoon Lee	Chronic non-AIDS effects of HIV infection and anti-retroviral therapies	Andrew Carr
Lise Lafferty	National Perinatal Epidemiology & Statistics Unit	Tony Butler and Dr Georgina Chambers (National Perinatal Epidemiology & Statistics Unit)
Scott Ledger	The effects of anti-attachment and fusion inhibitor gene-therapies in the protection of HIV susceptible cells	Geoff Symonds, John Murray
Rebecca Lorch	Role of the Practice Nurse in chlamydia testing in general practice	Rebecca Guy, Jane Hocking and Meredith Temple-Smith (both University of Melbourne)
Tarana Lucky	Using quantitative techniques to improve monitoring and evaluation of HIV epidemics in Australia	Handan Ward, David Wilson
Dorothy Machalek	The natural history of anal human papillomavirus infection and anal cellular abnormalities in mature aged homosexual men	Andrew Grulich, Jeff Jin, Mary Poynten
Kylie-Ann Mallitt	Geospatial Models of HIV Transmission	Handan Wand, David Wilson
Kristin McBride	Studies of the latent reservoirs of HIV-1	David Cooper, Tony Kelleher, Kersten Koelsch
Skye McGregor	Capacity building for health research in developing countries	John Kaldor, Klara Henderson
Hamish McManus	Evaluation of survival in HIV-positive patients	Kathy Petoumenos, Matthew Law
Catalina Mendez	Understanding siRNA induced transcriptional silencing of HIV-1.	Tony Kelleher, Kazuo Suzuki (St. Vincent's Hospital), Chantell Ahlenstiel
Brian Mulhall	Sexually transmitted infections (STI) in patients in the Australian HIV Observational Database	Matthew Law, Christopher Fairley (University of Melbourne)
Daniel Murray	The role of microRNAs in HIV-1 infection and pathogenesis	Tony Kelleher, Kazuo Suzuki (St. Vincent's Hospital)
Patrick Nadol	Anti-Retroviral Therapy for Prevention in HIV Sero-Discordant Couples in Viet Nam: An Operational Research Study to Assess the Outcomes and Feasibility of Implementing Anti-Retroviral Therapy for Prevention among HIV Sero-Discordant Couples in Viet Nam	Matthew Law
Lisa Natoli	Health Service Implication of the Introduction of STI Point-of-Care Testing in Australia	Rebecca Guy, Lisa Maher, David Anderson (Burnet Institute), Mark Shepard (Flinders University)
Quang Duy Pham	Modelling HIV drug resistance in Vietnam	David Wilson, Lei Zang
Chansavath Phetsouphanh	Characterisation of CD4+ Antigen specific T cells to HIV	Tony Kelleher, Nabila Seddiki
Angie Pinto	Long term health outcomes in people with HIV followed since seroconversion	David Cooper, Tony Kelleher, Kathy Petoumenos
Suzanne Polis	Adherence to hepatitis B antiviral therapies	Lisa Maher, Armany Zekry (St George Hospital)

## Students and student supervison list

Candidates	Research	Supervisors
Phillip Read	Clinical and epidemiological aspects of syphilis	Rebecca Guy, Basil Donovan,
Lucia Romani	Factors associated with scabies in a highly endemic population	John Kaldor, Andrew Steer (Murdoch Childrens Research Institute)
Karen Schneider	Economic evaluation of HIV monitoring	David Wilson, Matthew Law, Basil Donovan
Andrew Shattock	Mathematical modelling of HIV/AIDS	David Wilson, Richard Gray
Bronwyn Silver	Sexual and reproductive health of Aboriginal women in remote communities	John Kaldor, Rebecca Guy, Alice Rumbold (Menzies School of Health Research)
Kristy Smith	Home-based sample collection to increase chlamydia retesting and detect reinfections following treatment	Rebecca Guy
Sowbhagya Somanadhan	Influence of civil society on HIV policies and services in India and the participation of people living with HIV/AIDS	Lisa Maher
Dam Anh Tran	Accessibility to anti retroviral (ARV) treatment in Vietnam.	Lei Zhang, Anthony Shakeshaft (NDARC), David Wilson, Chris Doran (University of Newcastle)
Winnie Wing Yin Tong	Measurement of immune responses to clinically significant viral pathogens in immunocompromised adults	Andrew Carr (St Vincent's Hospital), Tony Kelleher
Sasiwimol Ubolyam	Investigation of M. tuberculosis – specific – CD4 T cells immune response in TB-infection	David Cooper; Tony Kelleher, Jintanat Ananworanich (Chulalongkorn University & HIV-NAT, Thailand)
Nga Vu	Amphetamine type stimulants and HIV Infection among men who have sex with men	Lisa Maher, Iryna Zablotska – Manos
James Ward	Sexual health and risk factors among young Aboriginal people	John Kaldor, Basil Donovan
Lucy Watchirs Smith	The impact of sexual content in new media on adolescent sexual health	Rebecca Guy, Bette Liu, Louisa Degenhardt
Edward (Ned) Waters	The analysis, ecology and implications of HPV variants in HPV related cancers.	David Regan, David Philp (SPHCM), Andrew Grulich, Anthony Smith
Chris Weatherall	Immunology of HIV infection	Tony Kelleher, David Cooper
Bethany White	Hepatitis C vaccine preparedness	Lisa Maher, Greg Dore
Stephen Wright	Antiretroviral therapies and immunological outcomes in HIV-positive patients	Kathy Petoumenos, Matthew Law
Yin Xu	Mechanisms for SIV entry into T follicular helper cells	Tony Kelleher, John Zaunders

### Masters Students

Steven Badman	The Molecular Diagnosis of STIs in the Asia Pacific Region	Rebecca Guy, Basil Donovan
Anna Charisse Farr	Evaluation of HIV in the Philippines (Masters by Research)	
Phillip Keen	What factors are associated with delayed HIV testing and diagnosis of HIV among some at-risk gay and bisexual men in Australia and how can structural and other barriers to HIV testing be reduced?	Garrett Prestage, Rebecca Guy
Rebecca Lorch	Role of the Practice Nurse in chlamydia testing in general practice	
Elizabeth Mlambo	A study assessing HIV knowledge, risk behaviour, health service usage and testing in people from culturally and linguistically diverse (CALD) backgrounds in NSW	David Wilson, Rebecca Guy
Cecilia Moore	Health outcomes in HIV positive and negative gay men	Janaki Amin, Jeff Jin, Heather Gidding
Mahshid Mahshid Rafieeshahrbabaki	HIV viral load and CD4 monitoring in virologically suppressed patients in the Australian HIV Observational Database	Kathy Petoumenos, Azar Kariminia
Dina Saulo	Bound Volume for the Degree of Master of Applied Epidemiology	Tony Butler, John Kaldor



Candidates	Research	Supervisors
<b>Supervision of non-Kirby Institute Students</b>		
Leon Pierre Botes (The University of Sydney) PhD Candidate	Validation of the acceptability and reliability of self collected anal swabs used for cytological screening, to detect anal squamous intra-epithelial lesions in HIV-positive men who have sex with men	Richard Hillman, Jeff Jin
James Fetherston (Curtin University)	Blood-borne viral epidemiology and risk behaviours among incarcerated populations in Australia	David Wilson (Co-supervisor)
Laren Hawke (University of South Australia)	Epidemiology of HIV resistance and subtypes in South	John Kaldor
Thidarat Jupimai (The University of Amsterdam)	Monitoring of Early Warning Indicators for HIV Drug Resistance in Bangkok, Thailand	Stephen Kerr
Grace Kabaniha (Deakin University)	Priority setting for prevention of HIV/AIDS among adults in Uganda	David Wilson (Co-supervisor)
Stephen Lambert (University of Queensland)	Chlamydia in the Australian Defence Forces	Scott Kitchener (University of Queensland), Basil Donovan
Fredrick Lee (St Vincents)	Chronic metabolic effects of HIV infection and anti-retroviral therapy	Janaki Amin, Andrew Carr (St Vincent's Hospital)
Larissa Lewis (University of Sydney)	Social Media and Adolescent Development	A/Prof Rebecca Guy, AProf Rachel Skinner (USYD)
Bette Liu (Sax Institute)	Vaccine Preventable Diseases in adults aged 45 and above in Australia	John Kaldor, Raina MacIntyre
Samantha McAllery (University of Sydney)	Proteomics of True de novo HIV in the Context of Productive Infection	Stuart Turville
David Muscatello (SPHCM)	Pushing the boundaries of population based influenzae surveillance	Janaki Amin, Raina McIntyre (SPHCM)
Loay Othman (La Trobe University) PhD Candidate	HIV and stigma in the United Arab Emirates	Garrett Prestage
Danielle Phillips (University of Maryland)	Type three secretion and intracellular development of Chlamydia	David Wilson (Co-supervisor)
Tim Read (Melbourne University) PhD Candidate	Sexually transmitted viruses in men having sex with men	Christopher Fairley, Andrew Grulich
Rachel Sacks-Davis (Monash University)	Hepatitis C virus transmission and progression in cohorts of people who inject drugs	Margaret Hellard and Campbell Aitken (Burnet Institute), Jason Grebely
Ivy Shih (University of Sydney)	Characterization of Human Immunodeficiency Virus (HIV) spread between physiologically relevant cell targets of the immune system	Stuart Turville, N Nasr (University of Sydney)
Huachun Zou (University of Melbourne) PhD Candidate	HPV infection in young men who have sex with men	Marcus Chen (Melbourne), Andrew Grulich
Karen Hawke (University of South Australia)	Epidemiology of HIV resistance and subtypes in South Australia	John Kaldor
Nick Walsh	HIV and HCV diagnosis and treatment for people who inject drugs	John McNeil (Monash University), Lisa Maher

**THE KIRBY  
INSTITUTE WORKS  
WITH AFFECTED  
COMMUNITIES TO  
CONDUCT RESEARCH  
THAT IS **MAKING A  
DIFFERENCE NOW,  
AND WILL HAVE AN  
UNTOLD BENEFIT FOR  
ME AND OTHERS IN  
THE FUTURE.****

Peter Molloy is a participant in the SPANC project (page 53), examining of the prevention of anal cancer. (Although all information about our SPANC participants is kept private and confidential, Peter was happy to share his experience).





We continue to collaborate with organisations around the globe, creating solutions to global health challenges and driving our collective research success into the future.



Peer reviewed

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**THROUGH OUR  
REGIONAL  
COLLABORATIONS,  
WE ARE BUILDING  
THE CAPACITY OF  
LOCAL RESEARCHERS  
IN LOW AND MIDDLE  
INCOME COUNTRIES  
TO UNDERTAKE HIGH-  
QUALITY AND POLICY-  
SHAPING RESEARCH**

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**AUSTRALIA'S NEAREST NEIGHBOUR, PAPUA NEW GUINEA, HAS ONE OF THE HIGHEST RATES OF CERVICAL CANCER IN THE WORLD, WITH AN INCIDENCE ALMOST FIVE TIMES HIGHER THAN IN AUSTRALIA AND NEW ZEALAND.**



## Health Pregnancy Study in PNG

Australia's nearest neighbour, Papua New Guinea, has one of the highest rates of cervical cancer in the world, with an incidence almost five times higher than in Australia and New Zealand. Cervical cancer is the most common cancer among women in PNG and a leading cause of premature death. An estimated 1500 women die every year in PNG due to cervical cancer. Despite this disease burden, no large-scale surveys have been conducted to establish the prevalence of human papillomavirus (HPV) among general or at-risk populations of women. In addition, although national surveillance of HIV and syphilis in pregnancy is able to provide robust prevalence estimates, there have been no large-scale population estimates of other STIs in pregnancy, such as chlamydia, gonorrhoea or trichomonas.

The Health Pregnancy Study in PNG is a cross-sectional survey to investigate the epidemiology of sexually transmitted infections, including HIV and HPV, among 1000 women attending antenatal clinics in four provinces in PNG. Study recruitment began in 2011 and by late 2012, 241 study participants had been recruited at four antenatal clinics in Asaro and Hiri District, among whom high prevalences of HPV, HSV-2, chlamydia, gonorrhoea, trichomonas and syphilis have been observed. Recruitment at clinical sites in Madang and the Southern Highlands Provinces commenced in early 2013.

"This is the first-ever such survey in PNG and it will give us a much clearer picture of HPV subtypes," says Professor John Kaldor, head of the Kirby's Public Health Interventions Research Group. The group's Associate Professor Andrew Vallely is chief investigator for the study, which is being undertaken in collaboration with the PNG Institute of Medical Research, the PNG National Department of Health, The Burnet Institute and the Royal Women's Hospital, Melbourne. "The only survey published to date was conducted among 114 women in Goroka in the mid-1990s, which reported a 33 per cent prevalence of HPV-16/18. This study will allow us to measure the extent of HPV infection in pregnant women, alongside other STIs."

This study will provide the first general population-level estimates of HPV-type prevalence, and is expected to inform future national policy on HPV vaccination and cervical cancer prevention in PNG.

"The long-term goal for PNG would be vaccination, but there is no vaccination program in existence, and nor is there the infrastructure or the funding to establish one," Professor Kaldor says. "There is no Pap test available for diagnosis."

The existing strategy remains a visual inspection of the cervix with the addition of acetic acid, which although not as accurate as a Pap smear still provides some diagnostic benefit. The only available treatment for symptomatic cervical disease is cryotherapy.

The study will also provide the first general population-level estimates of HSV-2 prevalence in PNG, which is considered an important co-factor for HIV transmission in many heterosexual HIV epidemics.

## HEPATO and SToP-C

One-quarter of all prisoners who agree to testing prove to be positive for hepatitis C; but very few people in prison – about one in a hundred – are treated for their HCV infection.

HEPATO is a study in two parts. The qualitative component consists of in-depth interviews with both prisoners and prison health staff in Western Australia, Queensland and New South Wales, to tease out and clarify the contributing factors that lead to such a low HCV treatment rate behind bars. Once these barriers to treatment are understood (such as side-effects to existing drug therapy and the amount of time needed to receive treatment), and those that can be overcome are addressed, it is hoped to raise the prison HCV treatment rate from one per cent to five per cent.

“These HCV-positive people are in prison,” Professor Tony Butler, of the Kirby’s Justice Health Research Program, says. “We want to turn this unfortunate circumstance into an opportunity to treat their hepatitis C, and when they go back into their communities, they won’t pass the infection along to the next person.”

The second arm of HEPATO is a mathematical modelling component. Exciting new drugs have recently come into use for the treatment of HCV, replacing the existing regimen which is a challenging course of treatment with intense, influenza-like side-effects for the year of necessary adherence. The modelling component will seek to explore the impact of any increase in HCV treatment on reducing rates of transmission and incidence of HCV in prisons, by reducing the pool of infection.

This work dovetails with the SToP-C (Surveillance and Treatment of Prisoners With Hepatitis C) study, led by Professor Greg Dore of the Kirby’s Viral Hepatitis Clinical Research Program. Building from the work in HIV research, Professor Dore will use the Test and Treat approach for HCV among prisoners. Using the new generation of HCV drug therapy, which is better tolerated and with an improved side-effect profile, Professor Dore hopes to treat all eligible prisoners in one institution (and use eligible prisoners in a second institution, who will be offered the current HCV regimen, as the controls) with the new interferon-free Direct Acting Antivirals (DAAs) to achieve substantial reductions – at least 50 per cent – in the incidence of HCV infection over a two year period in the prison setting. The rate of HCV treatment uptake among eligible inmates and reasons for non-uptake will also form part of the study, as will the inmates’ on-treatment change in illicit drug use and other illicit drug use behaviours during treatment.

Rates of HCV reinfection following treatment will be monitored among the 650 people, who will be enrolled from September 2014. The study is expected to take three years to complete, with the treatment phase commencing in year two.

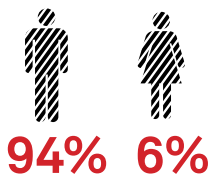
### Australian prisoner facts and figures



~50,000 flow through prisons each year

27%

27% Australian prisoners are Indigenous



94% Australian prisoners are men and 6% are women

36 mths

Median sentence length 36 months

## People who use drugs are key to eliminating HEP C

The burden of liver disease could be dramatically reduced by increasing treatment for hepatitis C infection among people who inject drugs, suggest new recommendations developed by researchers from the Kirby Institute, in collaboration with colleagues from the International Network on Hepatitis Care in Substance Users (INHSU) and released in 2013.

In Australia, an estimated 230,000 people are living with chronic hepatitis C and over 10,000 new cases are reported every year. Hepatitis C can lead to serious liver complications such as liver failure or cancer, which are associated with considerable costs to the health care system. Although almost 80 per cent of all infections occur among people who inject drugs, only one per cent of these people currently receive treatment.

“Treatment for hepatitis C infection among people who inject drugs remains unacceptably low,” said Dr Jason Grebely, Senior Lecturer in the Viral Hepatitis and Clinical Research Program at the Kirby Institute and co-lead author of the recommendations. “Clinicians have been hesitant to recommend treatment in this population because of a lack of understanding about how lifestyle factors may impede successful treatment.”

But research supporting the first set of international recommendations ever released for treating hepatitis C in people who inject drugs has shown that treatment can be very successful when barriers are addressed within a supportive environment.

“Reducing the significant burden of liver disease related to hepatitis C in Australia and internationally will require improved assessment and treatment of the population most affected: people who currently inject drugs and those who have injected drugs in the past,” says Philip Bruggmann, President of INHSU. “By providing appropriate care to this group, we can reduce the burden of hepatitis C-related liver disease in this vulnerable population and slow the spread of this world-wide epidemic. These new recommendations serve as a first step towards elimination of hepatitis C.”

The new global recommendations were published in the journal *Clinical Infectious Diseases* as part of a supplement entitled “Prevention and Management of Hepatitis C Virus Infection Among People Who Inject Drugs: Moving the Agenda Forward”, developed in collaboration with number of international researchers and clinicians, and in conjunction with INHSU.

“These are exceptionally positive and welcome findings,” said Stuart Loveday, CEO of Hepatitis NSW. “Following the listing of new hep C treatments for subsidy by the Australian Government in April, almost all people living with hepatitis C in Australia can enjoy cure rates of around 75 to 80 per cent. This new evidence shows us that people who have been least able to access treatment in the past, can and should be able to benefit from these new treatment advances.”

## The HITS-c project

People who inject drugs (PWID) are the key population affected by hepatitis C virus (HCV) globally. Among the estimated 15.9 million (range 11-21 million) PWID worldwide, ten million (range 6.0-15.2 million) are estimated to be HCV antibody positive. By international standards, Australia has relatively high coverage of harm reduction initiatives among PWID and low prevalence and incidence of HIV. In contrast, prevalence and incidence of HCV is high among PWID in Australia, with prevalence among needle and syringe program (NSP) attendees nationwide estimated at 50-60 per cent and HCV incidence of 44.1/100 person years observed in a previous Kirby Institute community-based cohort of PWID in South Western Sydney.

The Hepatitis Incidence and Transmission Study – community (HITS-c) is a prospective observational study of HCV un-exposed PWID in community settings led by Professor Lisa Maher, head of the Viral Hepatitis Epidemiology and Prevention Program at the Kirby Institute. HITS-c is part of a program of research comprising the first hepatitis C virus (HCV) vaccine preparedness study and designed to inform the feasibility of conducting efficacy trials of candidate HCV vaccines with this population. Initially funded by the UNSW Strategic Fund and subsequently by an NHMRC Project Grant, the study was conducted in close collaboration with community partners AIVL and Hepatitis NSW.

Between November 2008 and December 2014, 384 PWID were screened and 188 eligible participants were enrolled and followed up every three to six months. The study is conducted via an outreach van in community settings throughout Sydney with experienced staff on hand to conduct assessments and provide pre and post-test counselling and referrals. Participants who acquire HCV infection during follow-up are enrolled into a separate incident case cohort (HITS-i) with an intensive follow-up schedule designed to investigate the natural history of early acute hepatitis C infection.

As part of the HITS-c study, researchers also examined the effectiveness of respondent driven (RDS) and targeted outreach (TOS) sampling in identifying and recruiting anti-HCV negative PWID. While RDS resulted in a larger number of total enrolments, TOS was more efficient in identifying eligible individuals. Overall retention in HITS-c was very high with 89 per cent of participants retained at 48 weeks and 76 per cent of participants adherent to follow-up protocols (defined as completing at least 75 per cent of study visits within two weeks of schedule).

Hypothetical willingness to participate in future HCV vaccine trials is an important indicator of future vaccine trial viability and the majority (80 per cent) of HITS-c participants indicated they would be willing to participate in future candidate vaccine trials. The study has also documented a significant increase in HCV vaccine clinical trial literacy following a brief intervention designed to improve understanding of key HCV vaccine trial concepts. These results indicate that this group has the capacity to provide informed consent to participate in future trials.

With 34 incident infections observed to date, the rate of primary HCV infection in HITS-c is currently 7.11/100 person years (95 per cent CI 5.08 – 9.95), substantially lower than 44.1/100 person years observed a decade earlier in a similar Sydney-based cohort, highlighting the need for future trials to be informed by contemporary incidence data. While sample size estimates suggest that a primary infection rate of at least 16/100py would be required for standalone trials of candidates designed to prevent chronic HCV infection, results to date support the feasibility of Sydney participating in large multi-centre HCV vaccine trials.

While the HITS-c cohort will close in 2014 due to a lack of funding, results to date demonstrate that it is possible to identify, recruit and retain at-risk PWID who adhere to study protocols. The study has also provided important contemporary data on risk factors for incident HCV infection. In a paper currently in press in the Medical Journal of Australia we found that younger age and daily or more frequent injecting were independently associated with incident infection. Opioid substitution therapy was also protective against HCV seroconversion and was associated with a reduced risk of incident infection among those who mainly injected heroin.

Results from this important program of research indicate that the ethical implementation of future HCV vaccine trials is possible in Australia and the HITS-c study provides important insights which will inform models of best practice for conducting future vaccine and other prevention trials with PWID.



**People who inject drugs (PWID) are the key population affected by hepatitis C virus (HCV) globally.**

## TTANGO and STRIVE

The ground-breaking TTANGO (Test, Treat ANd GO) study is a randomised trial of the point-of-care tests for chlamydia and gonorrhoea infections in remote Aboriginal communities. By the end of 2013, TTANGO was fully operational in twelve different health services. It was the first year of the implementation of a new point-of-care test for gonorrhoea and chlamydia, and the first time anywhere in the world the tests on site have used the PCR-based method (although these tests are now available in laboratories). This study was the first to use them at the point of care, in remote settings often difficult to access. This is in contrast to the standard practice of sending samples away to the lab for testing, which has the disadvantage in a scattered and highly mobile population of requiring patients to return at a later date for results and possible treatment.

For the first year, six sites were randomised to use the new point-of-care test and six sites continued with the standard procedure. In the following year, the two groups will cross over and use the other method of testing. Because of the rarity of symptoms, and the inherent delays in the majority of cases that are asymptomatic and therefore depend on a laboratory finding to initiate treatment, currently available diagnostic strategies for chlamydia and gonorrhoea are not ideal in remote settings. A potential solution to this problem is the use of rapid point-of-care tests that can provide an immediate result in field settings, thereby allowing clinical services to offer treatment and begin the process of partner notification at the time when the specimen is taken.

This novel study, under the direction of the Kirby Institute's Public Health Interventions Research Group, has also received input from the Sexual Health, Aboriginal and Torres Strait Islander Health, Biostatistics and Databases, and Surveillance and Evaluation Programs internally, and externally from Baker IDI, Central Australia; University of QLD/Queensland Paediatric Infectious Diseases Laboratory; Royal Women's Hospital; University of Melbourne/Melbourne Sexual Health Centre; Flinders University, SA; Burnet Institute, VIC; Ngaanyatjarra Health Service, NT; Apunipima Cape York Health Council, QLD.

The results of this definitive trial will provide crucial information to guide sexual health clinical practice in remote Aboriginal communities. If successful, the trial will provide clear evidence that rapid point-of-care tests are capable of improving the timelines of treatment and decreasing re-infection rates. Mathematical modelling and health economic analyses can then be used to make the case for large scale implementation of this technology.

Another equally ground-breaking study concerning sexual health in remote Aboriginal communities is STRIVE, a randomised community trial with an intervention of a sexual health quality improvement program. A total of 69 remote communities, grouped into 23 clusters of communities, in northern and central Australia have been supported to participate, and by late 2013 STRIVE is in its last few months of data collection and analysis.

**STRIVE** (STI in Remote communities: ImproVed and Enhanced primary health care), implemented by the Kirby Institute's Aboriginal and Torres Strait Islander Health Program with input from the Biostatistics and Databases Program and the Public Health Interventions Research Group, began implementation of the Sexual Health Quality Improvement Program in 2009. This program's main elements, through quality improvement and trial coordinators based in each region, were to develop a set of agreed best practice targets in STI control such as coverage, interval time to treatment, retests for cure of infection, and contact tracing with clinic staff and to modify patient information management systems. The objectives have been to achieve sustained improvements in the provision of sexual health clinical services in remote Aboriginal communities, and to determine whether the attainment of best practice levels in clinical activity can reduce the prevalence of STIs.

## SPANC

Anal cancer is relatively rare in the general population. However, its incidence among men and women has been steadily increasing and gay men experience higher rates of anal cancer than the general population. For HIV-positive gay men, the risk is further elevated, despite improvements in general health associated with effective HIV therapies. A linkage study of the Australian HIV and cancer registries found that anal cancer had become the most common non AIDS-defining cancer and the third most common cancer overall among people with HIV in Australia.

“There are more than 100 types of HPV,” explained Professor Andrew Grulich, Head of the HIV Epidemiology and Prevention Program at the Kirby Institute. “Some cause genital warts, while other types cause more than 90 per cent of anal cancer. Gay men are over 20 times more likely than others to develop anal cancer,” said Professor Grulich.

In 2013, the Kirby Institute continued recruiting gay men living in Sydney to participate in a study of anal human papillomavirus (HPV) that will provide critical information to inform the design of anal cancer prevention programs. By December, 369 men were recruited into the study. The SPANC study (Study of the Prevention of ANal Cancer) will track the prevalence of anal HPV infection and related anal disease in a cohort of gay men.

SPANC is open to all gay men aged 35 years or more (with no upper age limit) and is particularly keen to enrol more HIV positive men to the study. The two study sites are St Vincent’s Hospital and RPA Sexual Health. The study aims to recruit 600 men from community-based settings in Sydney, Australia. There are six study visits over three years. At the first five visits men undergo a digital ano-rectal examination (DARE), an anal “Papanicolaou” (Pap) test for HPV detection, genotyping and anal cytology, followed by biopsy of any visible abnormalities. The men also complete a behavioural questionnaire before each visit. Questions include a detailed history of sexual behaviour, of anal symptoms, possible anal cancer risk factors and quality of life and psychosocial questions. Questionnaires are also completed two weeks following the provision of test results and include questions on participant experience during the procedure and post-procedure symptoms, including pain and bleeding in addition to quality of life/ psychosocial outcomes.

There are a number of optional sub-studies being conducted. These include among others, a study of particular biomarkers that may predict risk of progression to anal cancer and a qualitative study to explore experiences of anal cancer screening and the potential impact on participants’ perception of their sexual health and relationships.

Results of the study will provide important information to guide the future introduction of anal cancer screening programs for gay men.

SPANC is led by the Kirby Institute, in partnership with the Western Sydney Sexual Health Centre at University of Sydney, St Vincent’s Centre for Applied Medical Research and RPA Sexual Health, Camperdown and is funded by the National Health and Medical Research Council of Australia and Cancer Council NSW. SPANC will run until 2018.

For more information: <http://www.nchecrsurveys.unsw.edu.au/spanc/>



There are more than 100 types of human papillomavirus (HPV): some cause genital warts, while other types cause more than 90% of anal cancer. Gay men are over 20 times more likely than others to develop anal cancer.

In the general population anal cancer is uncommon, with rates of between 1 and 2 cases per 100,000 per year in most settings. Anal cancer rates are highest in Men who have Sex with Men, especially in HIV-positive MSM, with no evidence of decline in incidence since the introduction of effective antiretroviral therapy.

## Surveillance

The big news in surveillance of HIV in Australia in 2013 was not good news. Australia's new diagnoses of HIV increased by 10 per cent in 2012, to 1253 cases, the largest number of new cases in 20 years. The rates of chlamydia and gonorrhoea diagnosis also increased in 2012. In contrast, the proportion of young women diagnosed with genital warts has continued to plummet since the national school-based human papillomavirus vaccination program for girls was introduced.

The HIV, viral hepatitis and sexually transmissible infections in Australia Annual Surveillance Report 2013 indicates that the number of cases of HIV infection diagnosed each year has increased annually over the past 13 years, with the largest single year increase in new diagnoses recorded in 2012. "Some of the rise in reported HIV diagnoses may be due to an increase in testing, but better testing simply cannot explain the magnitude of these rising rates," said Associate Professor David Wilson of the Kirby Institute.

By the end of 2012, a total of 34 029 cases of HIV infection had been diagnosed in Australia since the epidemic began. Between 28 600 – 34 300 people were estimated to be living with HIV infection.

"One of the biggest challenges in responding to Australia's HIV epidemic remains the estimated 10-to-25 per cent of people with HIV whose infection remains undiagnosed. We need to focus significant efforts on getting people diagnosed and initiating antiretroviral therapy in order to improve their health and reduce the risk of transmission in the community," said Associate Professor Wilson.

Treatment uptake for hepatitis B and C remains low.

"Less than two per cent of infected people receive treatment for hepatitis C each year, despite the fact that the majority of people who are treated can be cured," he said. "Similarly, only three per cent of people with hepatitis B are being treated. The low treatment levels for both hepatitis B and hepatitis C are associated with a rising burden of serious liver disease, cirrhosis and liver cancer in Australia, which places a great burden on the individual and on the health care system."

Gonorrhoea notifications continued to rise in 2012, having increased 68 per cent since 2008. Chlamydia remained the most frequently reported notifiable infectious condition in Australia, with 82 707 cases diagnosed in 2012. Chlamydia and gonorrhoea diagnosis rates in the Aboriginal and Torres Strait Islander population in 2012 were four times and 21 times greater respectively than the rates in the non-Indigenous population. Rates were highest in young people and those residing in remote areas of Australia. Chlamydia notifications among Aboriginal and Torres Strait Islander people living in remote areas accounted for 55 per cent of all notifications in the Indigenous population, despite just 25 per cent of the Indigenous population residing in remote areas.

Other important points from the 2013 Surveillance Report include:

- Vaccination against human papilloma virus in Australia has been very successful, decreasing rates of genital warts in women and heterosexual men.
- Chlamydia remains the most frequently reported notifiable infection, with 82,707 cases diagnosed in 2012; young heterosexuals are most affected and the rate of infection is four times greater among Aboriginal and Torres Strait Islander peoples than in the non-Indigenous population.
- Gonorrhoea levels have increased substantially, to 13,649 cases in 2012; most cases are among men who have sex with men. The rate of diagnosis is 21 times greater in Aboriginal and Torres Strait Islander peoples than in the non-Indigenous population.
- Syphilis rates have increased among men who have sex with men and are close to the highest levels recorded in Australia, with 1,534 diagnoses in 2012.
- Hepatitis B diagnoses declined in 2012 to 6,702; hepatitis C diagnoses have also fallen slightly, from 11,308 in 2008 to 10,114 in 2012.
- An estimated 230,000 people were living with chronic hepatitis C in 2012, an annual increase of 5,300; the estimated number of people living with chronic hepatitis B was 207,000, an annual increase of 9,000.
- Of newly diagnosed HIV cases attributed to heterosexual contact, 58 per cent were in people born in Africa or Asia or in people reporting sexual partners from these regions.
- The elimination of donovanosis from Australia is still on track, with only one case detected in 2012 in Australia.





**“One of the biggest challenges in responding to Australia’s HIV epidemic remains the estimated 10-to-25 per cent of people with HIV whose infection remains undiagnosed.”**

**–Associate Professor David Wilson.**

## HIV-NAT: an enduring gift

The enduring and productive partnership that is HIV-NAT began between just three colleagues. In 1996, the Kirby Institute's director, Professor David A Cooper, agreed with two longstanding colleagues – Dr Praphan Phanuphak, head of the Thai Red Cross and Professor Joep Lange of the Academic Medical Center at the University of Amsterdam – to establish an HIV research collaboration in Bangkok, which would undertake clinical research and clinical trials relevant to Thailand and to the Southeast Asian region. This agreement led to the name, HIV Netherlands, Australia, Thailand, or HIV-NAT.

“This research collaboration is now recognised internationally as the most important HIV research organisation both in Thailand and the region,” Professor Cooper says. “Along the way, it has been temporary home to Australian and Dutch staff who have participated in the capacity building and have in turn learned a great deal.”

Over the years a wide range of world-class research has been achieved through HIV-NAT. This has included vaccine research with the Australian Thai HIV Vaccine Consortium; dose optimisation studies, which is a sophisticated examination of the best outcomes that can be achieved at lower doses of HIV therapy; other antiretroviral strategy trials, and studies in tuberculosis and hepatitis coinfection. HIV-NAT has also given rise to the annual Bangkok symposium, which attracts large numbers of health care professionals from Thailand and increasingly from the region, including Myanmar, Cambodia, Vietnam and China. It is considered the premier event for postgraduate education and training in the region.

Studies such as the Thai arm of the dose optimisation work have had multiple benefits. Dose optimisation, which looks for the most effective levels of an anchor drug, leads to reduction in costs to countries in buying expensive but important second-line drug therapy. In fact, HIVNAT has been doing similar dose optimisation studies for many years. It was important to establish the right drug doses for Thais, who are sligher in frame than Westerners and on average of smaller body weight. It seemed clear that Thais would need a smaller drug dose and this is work which HIVNAT took the lead in many studies over the years. This work led in turn to the ENCORE study, a very large, multinational study funded by the Bill & Melinda Gates Foundation with the potential to extend drug therapy to millions of HIV-affected people worldwide, by freeing up resources and so allowing more patients to be treated, as well as directing some of those resources to increased prevention work. Treated patients are much less likely to transmit the infection, so this work brings direct benefit to prevention efforts everywhere. And it is work which the three colleagues began together at HIVNAT.

Several years ago, it was decided that since HIV-NAT is now a very mature organisation, with many achievements and excellent staff, that HIV-NAT should become even more autonomous, setting its own agenda and taking leadership for all stages of the clinical trials in Thailand and the region. Thailand is now considered by the United Nations to be an upper-middle income country, and this fortunate position means that it no longer receives the level of donor aid and assistance which might once have been the case. One of the possible strategies to address the costs of conducting HIV research in the region is to forge collaborations with Thailand's neighbouring countries which do qualify for donor aid in relation to HIV research. In this way, the many years of skills and experience which have built up in Thailand through HIV-NAT is also of benefit to her neighbours. In fact, HIV-NAT is now seen as a successful model used by less developed countries for their own HIV research centres.

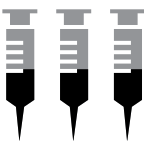
### Establishing correct drug doses:



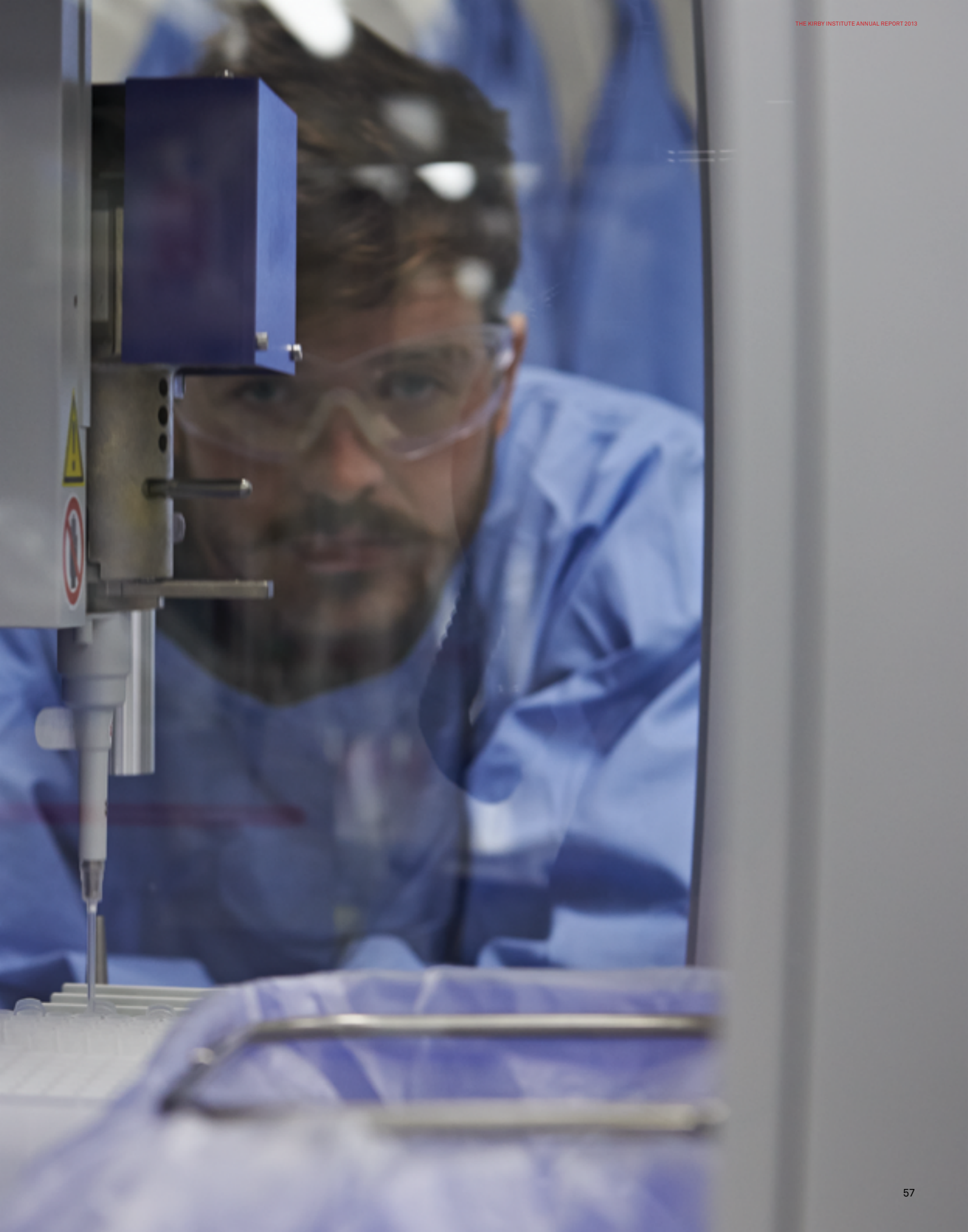
Larger doses for heavier frames



Smaller doses for lighter frames



Freeing up resources,  
allowing more patients to be treated





**WITHIN TWENTY  
YEARS HIV HAS  
GONE FROM A  
DEATH SENTENCE  
TO A DISEASE  
YOU CAN NOW  
LIVE WITH.**

**BUT THERE IS STILL  
NO MAGIC BULLET.**

David Polson is a long-time friend of the Kirby Institute and participant in Kirby-led clinical studies. He has been living with HIV for half of his life.

## Ovation

### National Awards

- Associate Professor Rebecca Guy was named the top ranked Career Development Fellowship applicant in population health by the National Health and Medical Research Council (NHMRC).
- Ms Dorothy Machalek, PhD candidate was awarded The Aileen Plant Memorial Prize in Infectious Diseases Epidemiology.
- Professor Lisa Maher received the 2013 Prime Minister's Award for Excellence in reducing the harms of drug use in Australia and across the Asia/Pacific Region at the National Drug and Alcohol Awards at Parliament House.
- Professor Lisa Maher was named the top ranked female Research Fellowship applicant for public health by the National Health and Medical Research Council (NHMRC).
- Associate Professor David Wilson awarded the 2013 3M Eureka Prize for Emerging Leader in Science for his use of sophisticated scientific techniques to understand the spread of HIV/AIDS and provide ongoing leadership and evidence-based advice to governments and agencies seeking to respond to epidemics.
- Associate Professor David Wilson was awarded the 2013 Edgeworth David Medal for his exceptional contributions to the mathematical modelling of HIV/AIDS epidemics, as well as to the evaluation and strategic planning of global, regional and country-level responses to this disease.

### Fellowships and promotions

- Mark Boyd was promoted to Associate Professor.
- Professor Basil Donovan was awarded a Fellowship of the Royal College of Physicians, London.
- Steve Kerr was promoted to Associate Professor.
- Handan Wand was promoted to Associate Professor.
- Dr John Zaunders was granted a Visiting Professorship at Universite Paris-Est Creteil (UPEC), Faculte de Medecine, Hopital Henri Mondor.

### UNSW Awards

- Dr Hammad Ali received the Dean's List award in the category of Outstanding Research.
- Professor Basil Donovan was awarded a UNSW postgraduate supervision award.
- Associate Professor Rebecca Guy received a UNSW Goldstar Award.
- Dr Denise Hsu received the Dean's List award in the category of Outstanding Research.
- Professor Tony Kelleher was chosen as the UNSW Medicine "Supervisor of the Year."
- Professor Tony Kelleher received a UNSW Goldstar Award.
- Dr Lei Zhang was awarded a UNSW Medicine Dean's Rising Star Award for 2013 for significant contributions to research.

### Other awards and recognitions

- Professor Basil Donovan became President of the International Society for STD Research.
- Professor Basil Donovan was invited to be a patron of Touching Base Inc. – Sex Workers and People with Disability Coming Together.
- Professor Basil Donovan gave the Gollow Lecture – the keynote address to the Australasian Sexual Health Congress in Darwin.
- Dr Behzad Hajarizadeh won a Junior Researcher Support Award in HIV and Hepatitis from the Australasian Society for HIV Medicine (ASHM).
- Muhammad Jamil was awarded the Sexual Health Prize 2013 for best written abstract at the Australian Sexual Health Congress.
- Mark Boyd was one of JAIDS five top reviewers for 2013.

**We applaud some notable achievements of scientists at the Kirby Institute during 2013**

## The Kirby Institute inaugural research symposium

A group of more than 350 academics, researchers, clinical professionals, policy makers and community partners working in the field of infectious diseases, blood-borne viruses and related infections came together at UNSW on Thursday, June 27 2013 for the inaugural Kirby Institute Research Symposium. The theme of the day was "Treatment as prevention: where to from here?"

The symposium was officially opened by the Hon. Jillian Skinner, NSW Minister for Health and Minister for Medical Research, and showcased the work of academics from the Kirby Institute, as well as invited international and national guests, presenting on a range of work related to treatment as prevention themes.

The keynote address was given by Associate Professor Till Bärnighausen from the Harvard School of Public Health.

Professor David Cooper, Director of the Kirby Institute, said the symposium is an important step toward addressing the needs and challenges facing the field.

"When we bring together like-minded individuals who are working toward shared goals, we make strides toward finding new ways to accomplish our ultimate aim of reducing the burden of the HIV epidemic, blood-borne viruses, other sexually transmissible infections and related illnesses for the affected communities," said Professor Cooper.



## Financials

**It is through the valued support of our funders that the Kirby Institute is able to conduct the leading edge research that is improving health outcomes in Australia and beyond.**

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AUD\$

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**National Health and Medical Research Council (NHMRC)**

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**Program Grants**

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HIV & HCV vaccines and immunopathogenesis	1,731,520
Sexually transmitted infections - causes, consequences and interventions	1,152,340

**Project Grants**

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A randomised controlled trial to evaluate the effectiveness and cost-effectiveness of chlamydia testing in general practice	147,000
A randomised open-label study comparing the safety and efficacy of two alternative treatment options in the management of HIV-1 infected participants who have virologically failed a standard first-line combination art regimen	457,677
A randomised trial of rapid point-of-care tests for chlamydia and gonorrhoea infections in remote Aboriginal communities	189,153
A randomised trial to control sexually transmitted infections in remote Aboriginal communities	41,181
A randomised trial to determine the safety and efficacy of early vs deferred treatment of HIV	210,512
Developing a system for comprehensive quantitative evaluation of public health strategies against HIV/AIDS in Australia	191,008
Efficacy of mass drug administration strategies to control scabies in a highly endemic population	202,126
Encore1 Study: the pharmacokinetic, pharmacodynamic and pharmacogenomic outcomes of reduced dosage of Efavirenz	732,350
HIV assembly, transport, egress and transfer from infected dendritic cells	66,065
HIV-1 transcriptional gene silencing by promoter targeted si/shrnas	201,937
Improving antiretroviral treatment (ART) initiation for people living with HIV in Australia: a realistic and feasible approach?	66,033
Liver disease in HIV-HBV co-infection	4,000
Neisseria gonorrhoeae antimicrobial resistance, detection and propagation	34,363
Regulation of F-actin during HIV spread	123,961
siRNA Induced transcriptional silencing of HIV-1: Elucidating the mechanisms and exploring options for delivery	512,631
Viral load, HIV treatment and HIV transmission in serodiscordant male homosexual couples	376,514

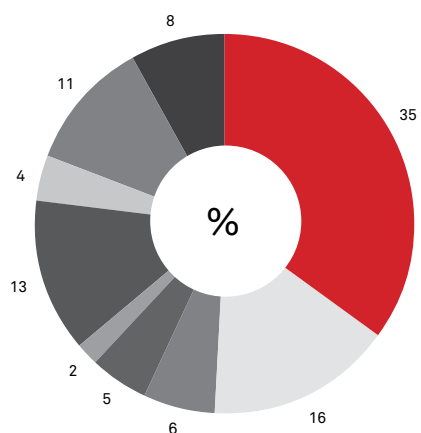
**Partnership Grants**

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Evaluation of a model for assessment and treatment of hepatitis C virus among injecting drug users in the opiate pharmacotherapy setting (ETHOS)	315,129
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**2013 Research Grant Income**

	\$'000	%
● NHMRC/ARC Grants - Program Grants	9,499	35%
● Australian Government - Federal Department of Health and Ageing	4,345	16%
● Australian Government - NSW Office of Medical Research	1,614	6%
● Australian Government - NSW Ministry of Health	1,261	5%
● Australian Government - Other State Departments	490	2%
● National Institutes of Health, USA	3,429	13%
● Other Grants and Contracts - Australian	1,140	4%
● Other Grants and Contracts - International	2,936	11%
● Pharmaceutical Industry	2,179	8%
<b>Total</b>	<b>26,892</b>	<b>100%</b>

AUD\$

**Capacity Building Grants**

From Broome to Berrima: Building Australia-wide research capacity in Indigenous offender health and health care delivery	422,012
Centres of Clinical Research Excellence	
Aboriginal Health: Blood borne viral and sexually transmitted infections	117,880

**Fellowships**

Prof. Basil Donovan (Practitioner Fellowship)	108,443
Prof. Greg Dore (Practitioner Fellowship)	108,443
Prof. Anthony Kelleher (Practitioner Fellowship)	108,443
Prof. John Kaldor (Senior Principal Research Fellowship)	164,585
Prof. Andrew Grulich (Principal Research Fellowship)	133,395
Prof. Lisa Maher (Senior Research Fellowship)	120,284
Dr Jason Grebely (Career Development Fellowship)	101,221
A/Prof Rebecca Guy (Career Development Fellowship)	101,221
Dr Gail Matthews (Career Development Fellowship)	101,221
Dr Stuart Turville (Career Development Fellowship)	249,536
Dr Fengyi Jin (Postdoctoral Training Fellowship)	98,215
Dr Bradley Mathers (Postdoctoral Training Fellowship)	83,649
Dr Anna Olsen (Postdoctoral Training Fellowship)	76,419
Dr Mary Poynten (Postdoctoral Training Fellowship)	41,825
Dr David Templeton (Postdoctoral Training Fellowship)	26,964
A/Prof Andrew Vallely (Postdoctoral Training Fellowship)	83,649

**Postgraduate Scholarships**

Maryam Salehi Alavi	29,464
Louise Causer	38,957
Denise Hsu	20,540
Tina Iemma	13,952
Yin Xu	53,000

## 2013 Financials

AUD\$

### Australian Research Council (ARC)

#### Linkage Projects

In vivo molecular imaging using engineered affinity reagents and fluorescent laser scanning confocal endomicroscopy	40,567
Sexual health and relationships in young Indigenous people	88,411

#### Future Fellowships

Prof. Tony Butler	112,550
David Wilson	97,935

### Australian Government

#### Federal Department of Health and Ageing

Establishment and maintenance of a trachoma surveillance and reporting unit	211,542
Evaluation of chlamydia pilot in general practice (subcontract with University of Melbourne)	36,000
Extended genital warts surveillance network	157,738
HPV genotype surveillance in Aboriginal and Torres Strait Islander women	139,000
Research activities for blood borne virus and sexually transmissible infections	3,800,426

#### NSW Office of Medical Research

Institute of Virology infrastructure funding	1,614,253
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#### NSW Ministry of Health

ACCESS-Plus – a national sentinel surveillance system for STIs	272,552
Briefing paper on the injection of Performance and Image Enhancing Drugs (PIEDs) in NSW	6,038
The eTEST project: An initiative to enhance STI testing in gay men	68,386
Evaluation of a model for assessment and treatment of hepatitis C virus among injecting drug users in the opiate pharmacotherapy setting (ETHOS)	200,000
The HIV Seroconversion Study	142,386
Male Sex Workers and HIV and STI risk project	20,781
NCHECR HIV surveillance and epidemiology support	50,000
NPA-IECD Aboriginal sexual/reproductive health project	27,002
NPA-IH Aboriginal hepatitis C project	5,616
NSW Aboriginal sexual health and BBV research study (SHIMMER)	2,000
NSW HIV rapid testing evaluation framework	246,358
NSW needle and syringe program enhanced data collection	78,500
Reducing impulsive behaviour in repeat violent offenders using a selective serotonin reuptake inhibitor	100,000
Sexual health and relationships in young Indigenous People	41,000

#### Other State Departments

Australia-Canada-India Chlamydia Research Alliance (Queensland Department of Employment, Economic Development and Innovation)	35,000
Australian collaboration for chlamydia enhanced sentinel surveillance (ACT Health)	8,387
Australian collaboration for chlamydia enhanced sentinel surveillance (access) (Victoria Health)	79,723
Expansion of sexual health quality improvement activities in six nsw Aboriginal community controlled health services (Hunter New England Local Health District)	87,600
HIV serconversion and PASH studies (Victoria Health)	180,100
The HIV Seroconversion Study (ACT Health)	9,730
Sexual health and relationships in young Indigenous people (ACT Health)	1,000
Sexual health and relationships in young Indigenous people (Victoria Health)	15,500
Sexual health and relationships in young Indigenous people (Western Australia Health)	1,500
Study of risk and HIV among men who have sex with men in Western Australia (Western Australia Health)	10,293
Study of risk factors for HIV serconversion (Queensland Health)	61,665

	AUD\$
<b>National Institutes of Health, USA</b>	
AHOD suicide study supplement (subcontract with American Foundation for AIDS Research)	70,937
Asia Pacific HIV research collaboration: cancer studies (subcontract with American Foundation for AIDS Research)	38,120
Asia Pacific HIV research collaboration: tuberculosis studies (subcontract with American Foundation for AIDS Research)	29,059
Cambodia intergrated hiv and drug prevention implementation (subcontract with University of California)	25,629
Eco-pathogenomics of chlamydial reproductive tract infection (subcontract with University of Maryland)	35,330
Hepatitis C Virus (HCV) (subcontract with American Foundation for AIDS Research)	8,666
International collaborative of prospective studies of HIV and Hepatitis in IDU (subcontract with University of California)	31,183
INSIGHT - Leadership (subcontract with University of Minnesota)	397,025
INSIGHT - FLU 002 & FLU 003 (subcontract with University of Minnesota)	438,599
START study (subcontract with University of Minnesota)	1,551,426
TREAT Asia data harmonisation supplement (subcontract with American Foundation for AIDS Research)	37,471
TREAT Asia HIV Observational Database (subcontract with American Foundation for AIDS Research)	322,051
TREAT Asia pediatric HIV observational database (TApHOD) (subcontract with American Foundation for AIDS Research)	261,740
Treatment of recently acquired hepatitis C virus infection (ATAHC 2)	181,669
<b>Other Grants and Contracts</b>	
<b>Australian</b>	
An integrated model of care targeting at-risk clients in metropolitan Aboriginal community controlled health service (Lowitja Institute)	21,666
Epidemiology, prevention and management of liver cancer in NSW: towards a strategic partnership (Cancer Council NSW/University of Sydney)	50,000
In vivo molecular imaging using engineered affinity reagents and fluorescent laser scanning confocal endomicroscopy (MedImmune Limited)	97,188
Monitoring transfusion transmissible infections among blood donors (Australian Red Cross Society)	20,000
Postgraduate Scholarship Damian Conway (Rotary Club of Sydney)	21,250
Preventing morbidity and mortality from anal cancer (Cancer Council NSW)	403,950
Reducing Australia's Aboriginal prisoner population using justice reinvestment - Assessing the public's views to treatment versus incarceration using citizens' juries (Lowitja Institute)	39,388
Support for clinical and epidemiological HIV research capacity in Indonesia (AusAID/Australian Society for HIV Medicine)	368,350
Testing of biomarkers of human papillomavirus on anal cytology in homosexual men to predict the presence of high-grade anal intraepithelial neoplasia and its progression and persistence (Cancer Australia)	118,138
<b>International</b>	
The DAD Study, Data Collection on Adverse Events of Anti-HIV Drugs (Copenhagen HIV Programme)	67,700
ENCORE: Evaluation of novel concepts in optimization of antiretroviral efficacy (Bill and Melinda Gates Foundation, USA)	2,137,288
Evaluation of a decade of DFID and World Bank supported HIV and AIDS programmes in Vietnam from 2003 to 2012 (Department for International Development UK)	111,232
Evaluation of HIV epidemics and programs in Asia (World Bank, USA)	513,198
Hepatitis C virus transmission dynamics among injection drug users (Canadian Institutes of Health Research)	106,304
<b>Pharmaceutical Industry</b>	
Abbott Australasia Pty Ltd	60,000
Boehringer Ingelheim Pty Ltd	40,000
Bristol-Myers Squibb Aust Pty Ltd	40,000
CSL Limited	136,364
Gilead Science Pty Ltd	72,000
Janssen-Cilag Pty Ltd	100,073
Merck Sharp & Dohme	1,118,155
Pfizer Inc	572,204
ViiV Healthcare Pty Ltd	40,000
<b>26,891,711</b>	



Our wet laboratories include PC2 (Physical Containment Level 2) and PC3 laboratories. The PC3 labs are certified to one of the highest levels of biological containment to handle human immunodeficiency viruses (HIV-1) and house a cell sorting flow cytometer and sophisticated fluorescence microscope for live imaging of real time interactions between virus and immune cells allowing researchers to safely study cell populations from individuals with HIV and viral hepatitis infections. This facility enables research into the immunology, natural history and pathogenesis of these infections.



B95-8 EBV Cell line  
VPIS3R8B4

PIS3R6B8: MISCELLANEOUS  
NN

WTEL H-C VPIS6R8B8

PIS3R6B7: CELL LINES-NN

WILL H-C VPIS6R4B8

PIS3R6B6: CELL LINES-NN

VPIS1R7B8: CHRN-  
LT

PIS3R6B8: MISCELLANEOUS  
NN

VPIS1R7B8: CHRN-  
LT

PIS3R6B10: HOS CD4  
CL - NN

VPIS5R4B11 CELL-LINES?

PIS3R6B5 OOS  
+ RESEARCH

VPIS5R4B10 CELL  
LINES



Never Stand Still

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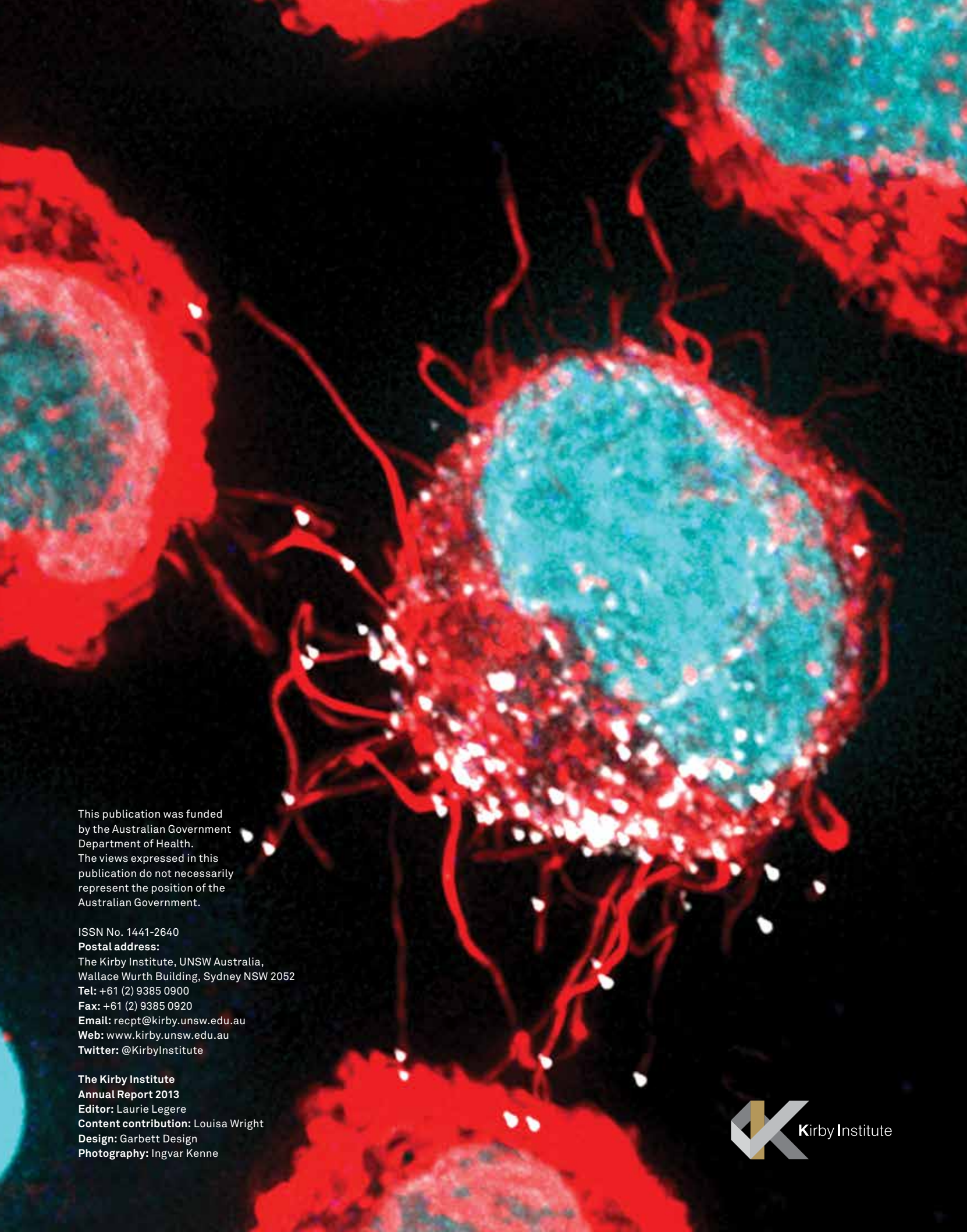
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**The Kirby Institute**

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