

Hello readers,

Welcome to the last edition of the newsletter for 2011. This edition is also a special issue featuring one of the Institute's biggest projects, the Malaria Control Program Evaluation (MalCon) project.

The Malaria Control Program Evaluation or MalCon is a 5-years project which began in 2008 and will end in 2014. The first phase of this program was successfully completed in October, this year. During its lifespan, the program has covered all of PNG and has collected significant data on malaria and its effects on the health of Papua New Guineans. It is hoped that these data will contribute to directing policies, intervention programs and treatments to decrease the burden of malaria in PNG and also contribute to improving malaria case management practice in the country.

From the field to laboratories, and from analysis to reports, the project could not have been possible without the contribution of project managers, procurement officers, accounts officers, researchers, research assistants, research nurses, HEOs, village reporters, microscopists, entamologists, scientific officers, social scientists and the lists goes on.

I hope, that as you read through the many success stories of the MalCon program, that it gives you an insight into the importance of the project as well as a perspective on the important role that the Institute plays and will continue to play in PNG.

This special edition would not have been possible without the help and assistance of Dr Manuel Hetzel, Head of the MalCon Project and Dr Justin Pulford, Senior Research Fellow, and I thank them for their contributions towards the articles and photos.

Thank you.

Editor

Twice around the country in 18 months: *The MalCon health facility survey*



BY DR JUSTIN PULFORD

The MalCon Project has conducted two countrywide Health Facility Surveys (HFSs) over the past 18 months. The aim of each HFS was to document malaria management capacity and practice and to assess whether current treatment guidelines were being adhered to. This is an important task as a new malaria treatment protocol has recently been introduced across Papua New Guinea. The new treatment protocol includes the routine testing of all fever patients for possible malaria infection by microscopy or rapid diagnostic test (RDT) and, if a patient tests positive, the prescription of the new antimalarial medication artemether/lumefantrine (branded as Mala-1). The first (baseline) HFS demonstrated that the introduction of this new protocol will require a substantial change in clinical practice.

For example, prior to the introduction of the new treatment protocol fewer than 20% of fever patients were tested for malaria infection by microscopy or RDT, yet 96% were provided an anti-malarial prescription. Thus, the new protocol will require health workers to test more fever patients for malaria infection than they normally would and to prescribe far fewer anti-malarial medication (assuming that many fever patients currently being prescribed an anti-malarial would in fact test negative for malaria infection if a test was conducted). All going well, MalCon will conduct another two HFSs over the next three years to further monitor clinician adherence to this new treatment protocol and their respective health facility's capacity to

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MESSAGE from the DIRECTOR



Dear Staff and Collaborators,

It is with great pleasure that I sincerely thank each and everyone of you for your collaboration and tireless contributions throughout the year. This is the final issue of our newsletter, it is also a special edition dedicated to the staff of the **Malaria Control Program Evaluation (MalCon)** and in particular our five missing scientists - who went missing in their line of duty.

This year has been a tremendous year for us in terms of research, training and new developments. With the realignment of IMR's research priorities, this year saw the emerge of two new research units - the Sexual and Reproductive Health Unit and the Population Health and Demography Unit. These new units emerged from the former Operational Research Unit (ORU). In light of these changes, we also ended two big research projects - the PNG-Australia Sexual Health Improvement Program (PASHIP) and the Malaria Control Program Evaluation.

The MalCon is a five-years project will began in 2008 and will end in 2014. The first phase of this program was completed successfully this year. The program worked closely with the NDoH's National Malaria Program. A lot of data collected from this project has been vital to the policy makers in trying to address the burden of malaria in PNG. The program has been very successful throughout its first phase and I congratulate the staff and the management of the project. The only mishap which affected the MalCon staff and also the staff and management of IMR was that five scientists went missing while on duty in August this year.

PNGIMR has done its utmost towards the search and continues to support the investigation into the mystery surrounding the scientists disappearance. As the Director, I will make sure we get to the bottom of this, and am still hopeful that they will be found.

This special edition is therefore dedicated to the five missing staff - Gibson Gideon, Leonard Vavana, George Dogoya, Lydia Petus and Tania Oakiva and to all their families.

To all the rest of the hard working staff at all IMR branches, I would like to take this time to sincerely thank you for all your contributions towards the continuous success of this Institute. I would also like to wish you and your families a very Merry Christmas and Prosperous 2012.

Thank you.

Professor Peter Max Siba
Director

Missing in the line of duty

On Monday, 1st of August 2011, five of our staff members went missing in the line of duty. On that day, Gibson Gideon, Leonard Vavana, Lydia Petrus, George Dogoya and Tania Oakiva boarded a dinghy to travel from the main island of West New Britain to the smaller Bali Island in the same province. The five were covering one of the last provinces for the country-wide household survey, one of the cornerstones of the Round 8 evaluation. After an extensive search and rescue operation, all evidence now suggests that the five were attacked by criminals. While we have faith in the ongoing work of the PNG police force, we think of our five colleagues, and hope for their safe return. This issue of the IMR Nius is dedicated to them.



GIBSON GIDEON - Scientific Officer and Team Leader

Born on 2 March 1978, Gibson has been with IMR since June 2008. While at IMR, he obtained a Graduate Diploma in Science.



LEONARD VAVANA - Nursing Officer

Born on 12 July 1974, Leonard has been with IMR's Global Fund Malaria Projects since October 2008.



GEORGE DOGOYA - Research Assistant

George, born on 23 September 1980, joined the IMR in May 2010 to work in the country-wide household survey.



LYDIA PETRUS - Nursing Officer

Lydia was born on 2 April 1986 and joined IMR in 2008 working first with an PNG-Australian Sexual Health Improvement Project (PASHIP) before moving to the malaria project in 2010.



TANIA OAKIVA - Scientific Officer

Tania was born on 29 May 1985. She joined the MalCon team in October, 2010 to work on the operational research project.

NEW SALARY SCALE IN 2012

All staff will see a pay rise starting next year following the introduction of a new salary scale for the Institute. This is news from the Director's Office.

According to Prof Siba, the new salary increase will be effective on the first fortnight of 2012. This is a result of the new salary scale to be introduced at the Institute in 2012.

Prof Siba also mentioned that there will also be an increase in travel and housing allowances. However, HR Manager, Denver Kave, said TA has increased this year and will be maintained through next year whilst there won't be any housing allowance next year.

He said there was an increase in travel allowance (TA) earlier this year following the policy review meeting so

the new TA will be maintained through to next year as well. For housing allowances (HAs), this will not eventuate as expected. This is "due to the current budget allocation by the government which is less than what we requested for, housing allowance will not be possible next year as anticipated until such time that we have sufficient allocated funds to expedite," explained Mr Kave. Also the current budget allocation is not sufficient to cater for HA.

Despite this, all staff will receive their new pay raise next year under the new salary scale. Prof Siba said with the new scale in place, staff will no longer

be paid using the public servants grade scale.

Prof Siba says this scale will be similar to what NRI and NARI are using and is very happy that IMR will be having its own salary scale. "I'm really happy with this as it is the first for IMR since its establishment 42 years ago and staff should be happy too," said Prof Siba. He further added that "it will be a significant pay rise for all staff". The new scale has been approved by the Department of Personal Management mid this year while the IMR Council approved it during the September meeting.

"Many people own mosquito nets, but don't use them."

WHY IS THAT?

BY DR JUSTIN PULFORD

This is an important question given that Rotary Against Malaria (RAM) will be providing over 8 million mosquito nets to Papua New Guineans across the country as part of the National Malaria Control Program (NMCP). If the mosquito nets are not used, then the potential benefits of the free distribution campaign will not be fully realized; recipients will remain prone to malaria infection by night biting mosquitoes and the anticipated reductions in malaria morbidity and mortality rates may not be met.

Another important question is what do people do when they have a fever? Is it common to seek formal assistance from a health facility, or do many people treat their own symptoms at home or seek help from a traditional healer? As the NMCP also includes provisioning health facilities across the country with the new anti-malarial Mala-1 then understanding how people respond when they experience fever or malaria-like symptoms is important. If people don't attend health facilities when they suffer from fever, then they may not be able to access this new medication and thought may need to be given to making it available via other means.

Ms Tania Oakiva and Ms Angeline Angwin have been



The number of treated mosquito nets distributed to villagers depends on the number of persons in a household. Pictured are village women in the Kainantu area receiving their treated nets.

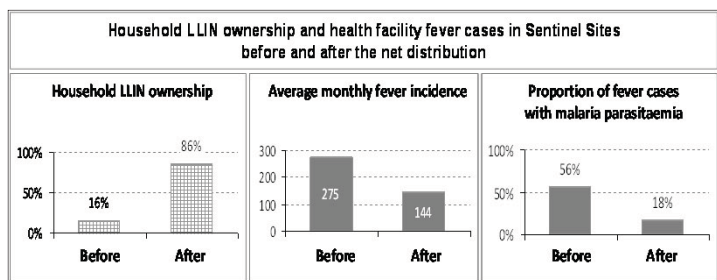
working on two qualitative studies specifically designed to help answer these questions as part of the MalCon evaluation of the NMCP. These two young scientific officers travelled the country to conduct in-depth interviews with villagers who own, but do not use a mosquito net or who have recently experienced fever symptoms. The projects were funded by an operational research fund attached to the NMCP and it is anticipated that the reported findings will directly inform program implementation. Tania was on her final field trip when she went missing in West New Britain Province, however, the interview data she had previously collected has been subsequently analysed by Angeline and the results make for interesting reading. So why don't people use mosquito nets? The findings will be reported soon!

Its (almost) all about the nets

BY DR MANUEL HETZEL

In 1987, researchers from the IMR published results of a study near Madang, demonstrating that insecticide treated mosquito nets (ITNs) reduced *Plasmodium falciparum* malaria in young children (Graves et al, Bull WHO 1987).

Evidence from 81 trials and over 30 descriptive studies carried out around the world confirmed the positive impact of ITNs against malaria. Since 1993, the World Health Organization emphasised the use of ITNs as the main measure for the prevention of malaria. But it was only in 2004, 17 years after the results of the study near Madang were pub-



lished, that the first PNG-wide distribution of long-lasting insecticide treated nets (LLINs) took off with support from the Global Fund to Fight AIDS, Tuberculosis and Malaria. Today, 25 years later, 90% of all households in PNG own a mosquito net, the majority of them an LLIN that should repel and kill mosquitoes for at least four years.

Over the past years and thanks largely to the free distributions carried out by Rotary Against Malaria with Global

Fund monies, ownership and usage of mosquito nets has significantly increased. In the first country-wide household survey conducted by IMR in 2008-2009, 65% of all households owned a LLIN; by 2011, this number had increased to 84%. In 2009 only 33% of all people were using a LLIN and the big question was why usage was so low. The main reason for not using nets was that not enough nets were available in households. After another round of distribution in a part of PNG in 2010, usage of LLINs had increased to 43%.

The increase in mosquito nets was followed by reductions in malaria cases in many parts of PNG. IMR entomologists also noted a reduced number of mosquitoes infected with malaria parasites and a significant impact of mosquito nets on the transmission of lymphatic filariasis. [See article on page 8.](#)

But there is still a long way to go. As more people sleep under nets, mosquitoes are getting more desperate to find blood meals which they need for the development of their eggs. Within a short time frame, changes in peak biting times have been observed as some mosquitoes start biting earlier in the evenings, before people are protected by a net. An increased usage of treated nets can reduce the number of mosquitoes and contribute to a reduction in transmission. Nevertheless, other measures complementing mosquito nets are also required. Prompt treatment of malaria cases with an effective medicine, for example, can reduce the reservoir from which mosquitoes are infected. Currently, the MalCon team is also investigating another innovative vector control method.



A young boy receiving his Long Lasting Insecticide-treated Net (LLIN).

Sentinel sites for **MALARIA** SURVEILLANCE

BY DR MANUEL HETZEL

With millions of mosquito nets distributed across PNG and the ongoing roll-out of artemisinin-based combination therapy (ACT) and rapid diagnostic tests (RDTs), the number of malaria cases is expected to decrease significantly. Unfortunately, existing data generated by the National Health Information System (NHIS) may not allow measuring the magnitude of this trend.

One of the problems with NHIS data is that so far, most reported malaria cases were diagnosed presumptively, that is without performing a laboratory test. With the introduction of better diagnostic tools such as RDTs, the reported number of malaria cases might drop enormously, simply due to the fact that non-malarial fevers are not reported as malaria any longer. The real effect of mosquito nets and drugs is then difficult to distinguish from the effect of introducing better diagnosis.

In order to measure the changes in confirmed malaria cases over time, the MalCon project has established seven sentinel sites for the surveillance of malaria. Naebo Oren, Rhona Sao, Lia Pitan, Paul Basanu, Sandra Mangona, Bridgette Kamuna and Brenda Sam are the Institute's clinical staff based far away from any IMR branch in these sites which are located across all four geographical regions of the country and far away from IMR branches.

In the sentinel site's health centres, the IMR research nurses ensure that each febrile patient is diagnosed using an RDT and only confirmed cases of malaria are recorded as such. The results are surprising: in many sites, less than 50% of the patients with fever have malaria. But there are big seasonal and regional differences (ranging from 10% to 70%) and proper diagnosis is therefore essential to ensure adequate

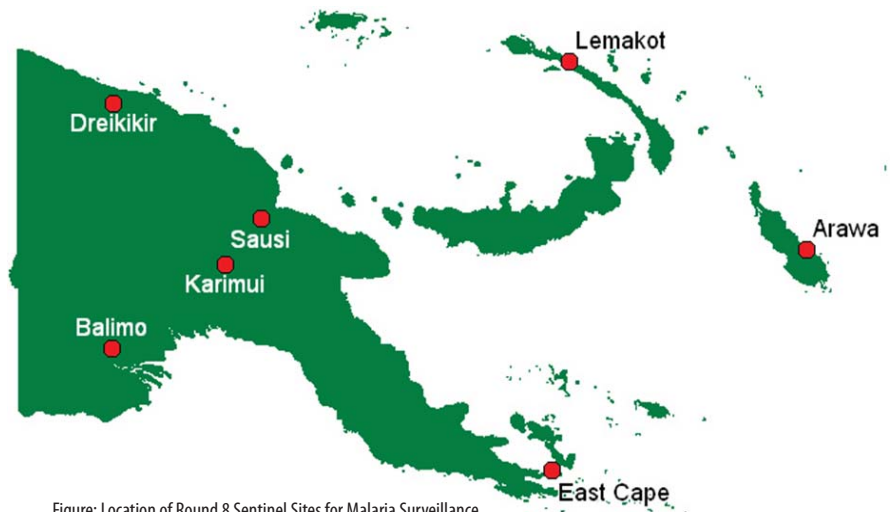


Figure: Location of Round 8 Sentinel Sites for Malaria Surveillance

treatment and proper reporting at all times.

But our sentinel site's activities are not limited to facility-based surveillance. In the catchment area of one site per region (Sausi, East Cape, Karimui and Lemakot), the project established a demographic surveillance. Over 6,000 households have been included in annual census and update rounds which are used to establish child mortality rates. Baseline data collection again found large discrepancies between sites with a crude under-5 year mortality rate of 35.9/1000 person-years in Karimui (Chimbu) and 1.8 in East Cape (Milne Bay).

Repeated household surveys in the demographic surveillance areas establish coverage with malaria control interventions which may explain changes to malaria indicators. In addition, the Institute's entomologists from Madang carry out regular collections of mosquitoes in these sites in order to monitor the number of infected *Anopheles* mosquitoes.



Blood slides taken from study participants during the malaria surveillance field trips.



The Papua New Guinea Institute of Medical Research (PNGIMR) is a statutory body of the Government of Papua New Guinea (PNG) established through an Act of Parliament in 1968. Its mandate is to undertake health and medical research into the disease problems affecting the people of PNG and through provision of local evidence support the delivery and improvement of health services.

OUR VISION

1. To improve the health and well-being of Papua New Guineans, by incorporating the priorities of PNGIMR Annual Activity Plan 2007-2011, National Health Plan (2011-2020), Medium Term Development Strategies (2010-2015), and the National Strategic Plan (2020-2050) through conducting research on major medical and health problems in Papua New Guinea, that supports the development of health services.

2. To consolidate the position of PNGIMR as the pre-eminent health and medical research institute in the South Pacific and to strengthen its role in the regional and global health and medical research community by maintaining the highest standards in research and through training a new generation of PNG biomedical, clinical and health research scientists.

OUR MISSION

To improve health through conducting research on the major medical health problems in PNG, that supports the development of health services in PNG and contributes to global knowledge and innovations in health.

As a consequence, our research priority areas are:

- Mosquito borne diseases
- Respiratory diseases
- Enteric/diarrhoeal diseases
- Sexual health including HIV/AIDS
- Infectious diseases (bacterial, viral and parasitic) surveillance, diagnosis and therapies
- Operational research including social science and health systems research

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NEC reappoints Prof Siba

The National Executive Council has reappointed Professor Peter Siba as Director for a second term.

The extension of Prof Siba as Director of the Institute, for another four years, commenced on 14 October, this year.

Details of his reappointment were stated in Government gazette of September, 2011. According to the gazette, "his reappointment is to ensure that there is stability and continuity at the Institute."

This will be Prof Siba's second consecutive term in office following his first appointment in 2006.

Prof Siba thanked the NEC and the O'Neal-Namah government for having the trust in him and says he is committed to ensure that stability and continuity prevails at the Institute.

Since IMR's inception in 1968, Prof Siba is the first national to be appointed as Director. His second term in office will expiry in 2015.

In the meantime, Prof Siba has also been appointed as Adjunct Profes-



Prof Peter Siba

sor in the School of Veterinary and Biomedical Science at the James Cook University. This appointment was made following a Memorandum of Agreement that was signed earlier this year between the

two institutions.

Prof Siba is humbled by this appointment and thanked JCU management for this appointment which will be for three years. He further stated that this appointment will further strengthen the relationship between the two institutions following the initial MoU that was signed in March this year.

"This will pave way for opportunities in terms of more collaborative research programs between the two institutions and will allow for our national scientists to get more trainings and assistance for our colleges in JCU."



Pink Morning Tea for Breast Cancer Awareness

Healthy Woman Healthy Papua New Guinea (HWPNG) members decked out in pink apparel, donned pink ribbons and sold pink food to mark Breast Cancer Awareness Month.

HWPNG annually hosts a Pink Morning Tea on the last Thursday of October. This year's Pink fundraiser made over K180.00.

Buzzing About Mosquitoes

BY DR LISA REIMER

The success of the nationwide long-lasting insecticidal nets (LLINs) distribution hinges on many factors including efficacy of insecticides, net distribution ratios, human behaviour and mosquito behaviour.

The Entomology Unit in Madang was tasked with assessing the impact of LLINs on the mosquito populations as well as measuring the resilience of these populations to control measures. Our entomological evaluations at the sentinel sites included an assessment of mosquito species diversity, mosquito densities, peak biting times throughout the night, preference for indoor and outdoor biting, and infection with *Plasmodium* species. In our insectary we are testing the strength of the residual insecticide to determine the optimum time for net replacement.

In Papua New Guinea there are approximately twelve species capable of transmitting malaria, with the five major malaria vectors belonging to the *Anopheles punctulatus* group. This group of mosquitoes is very diverse and each member exhibits different biting behaviours, propensities for infection, host and habitat preferences.

Following the nationwide LLINs distribution we saw a significant decrease in mosquito densities as well as the entomological inoculation rates (the number of infective bites received in one year). However, we have found that LLINs have a greater impact on those mosquito species that feed



Late Henry Dagoro and Muker Sakur identifying mosquitoes in Yapsie as part of the Global Fund Round 3 evaluation of malaria transmission.

indoors late at night than on the early evening biters. As a result, we have seen a slight shift in biting times and an increase in the proportion of early-biting species. We will continue to monitor mosquito populations to ensure LLINs are still the most effective control strategy.

All laboratory and field work is coordinated by Gussy Koimbu, Muker Sakur and Lemen Kilepak. Late Henry Dagoro was supervising field collections until he passed away in August 2010. Michelle Katusele is coordinating LLIN testing in the insectary.

Twice around the country in 18 months: The MalCon Health Facility Survey continues

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provide it, eg, whether they have RDT kits or Mala-1 in stock.

The logistics involved in conducting the two HFSs in this relatively short time frame were enormous. The hard working MalCon project management team had to contact health authorities in every province prior to each visit, arrange for a local health officer to accompany the team, organize the travel and accommodation of the field workers, and resolve the inevitable and unpredictable challenges that arise when teams are in the field. As up

to six health facilities were visited in each province during each survey, and as participating health facilities were randomly selected, then one can easily imagine the complexity of this task. Big planes, small planes, ships, and dingies were frequently used during each HFS and the MalCon landcruisers were tested on all sorts of terrain. The tireless HFS teams comprising, among others, Serah Kurumop, Elsie Bilam, Ismart Martin and Brown Kaupa, accepted the challenges in good spirit, successfully completed their duties, and inevitably impressed all they encountered along the way. The hardworking field teams occasionally found

time to explore the diverse parts of the country they found themselves in with Elsie Bilam even climbing to the top of Mount Tavurvur in Rabaul and staring down into the crater of the active volcano. Everyone involved in the HFSs have learnt an enormous amount from the experience and MalCon is confident that the findings will usefully contribute to improving malaria case management practice in Papua New Guinea. We look forward to conducting further HFSs in the future and continuing to support the national malaria control program.

What is the Global Fund?

The PNG National Malaria Control Program operates almost exclusively with funds provided by The Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM). But what really is 'The Global Fund'?

BY DR MANUEL HETZEL

Created in 2002 as an international public-private partnership based in Geneva, Switzerland, the GFATM is an international financing institution. It supports large-scale disease control programs in endemic countries. To date, the Global Fund has committed US\$ 22.4 billion in 150 countries in the fight against HIV/AIDS, tuberculosis (TB) and malaria.

The GFATM works in partnership with governments, NGOs and international agencies in disease-endemic countries. The GFATM itself neither develops nor implements programs. It is purely a funding body that responds to requests from local implementing partners. In order to be supported, funding proposals must be based on national strategic plans and priorities defined by disease-endemic countries. Funding support is limited to large-scale country-wide or regional programs rather than small targeted projects.

Global Fund support is based strictly on program performance. Implementing partners supported by the GFATM are bound to a set of pre-defined indicators and periodic targets. Program performance is not only measured in terms of services delivered (eg, number of mosquito nets

distributed) but also in terms of health impact achieved (eg, reduction in the incidence of malaria achieved). It is the implementing partner's responsibility to ensure that progress is achieved – and that it is adequately measured and reported. A reliable monitoring and evaluation system is therefore essential for the success of a program and for continuation of funding support.

For the purpose of transparency, many details about Global Fund grants are available publicly on the GFATM website. This includes continuously updated details on the performance of grant recipients. For more information check out <http://www.theglobalfund.org>

Papua New Guinea has so far obtained two malaria grants, one HIV and one TB grant. The direct recipients of GFATM money are called Principal Recipients (PR). The PRs can delegate specific tasks to sub-recipients (SR) which are selected based on a thorough assessment of their implementing capacity. In the Round 8 malaria grant, PNGIMR is a SR for monitoring and evaluation under the PRs National Department of Health (Phase 1) and Oil Search Health Foundation (Phase 2).

The Institute's Role as sub-recipient of the Round 8 grant

The availability of high-quality information on program performance is paramount to secure continued Global Fund support.

Technical and programmatic decisions related to the implementation of the National Malaria Control Program (NMCP) should also be made based on accurate and robust data. The National Health Information System (NHIS) reports routine disease statistics from health centres and hospitals across PNG. However, this information does not satisfy all requirements of the Global Fund supported program.

The PNGIMR's role as sub-recipient of the Round 8 grant is to fill this gap and provide accurate and timely data on the performance and impact of the NMCP. The Institute's independent evaluation of the grant implementation is a key component of the program. The evaluation includes

a variety of studies at the levels of the malaria parasites, the *Anopheles* vectors, the human hosts, the community at large as well as the health system. For this purpose, IMR field teams visit all 20 provinces at least once every year for different data collection activities. The continued implementation of malaria control interventions eventually depends on the data they collect.

Within IMR, the Round 8 Evaluation is conducted by the 'MalCon' (Malaria Control) Section which is part of the newly founded Population Health and Demography Unit (PHDU). Most of the MalCon team is based in Goroka but a few staff also work in other IMR branches and in sentinel sites across PNG. The team works closely with the malaria lab in Goroka and the entomology and microscopy sections at IMR Madang.

TO TREAT or NOT TO TREAT

BY DR MANUEL HETZEL & DR NICOLAS SENN

It is a seemingly simple question but it has the potential to spark controversy amongst clinicians: should malaria drugs be withheld from young children presenting with fever when a rapid diagnostic test (RDT) is negative? The intuitive answer would be 'yes', but clinicians will have also some questions: how accurate is the test? Can parasites remain undetected? What if clinical signs still suggest malaria?

Clinicians in malaria-endemic settings are sometimes reluctant to withhold antimalarials from febrile children – despite a negative test. The main fear is that a malaria case could be missed with fatal consequences.

It follows decades of presumptive treatment in the absence of adequate diagnostic tools with the notion that all fever episodes are due to malaria. Occasionally, this confusion is still today reflected in ambiguous malaria treatment guidelines in endemic countries, including PNG.

But with a decline in malaria morbidity, more expensive treatments and the rapid occurrence of resistances, proper diagnosis of fever cases is becoming more important than ever.

Researchers in Africa have demonstrated that children with fever and without signs of severe disease do not need to be treated with malaria drugs if the RDT is negative.

Researchers from IMR and Swiss Tropical and Public Health Research Institute in Basel have now demonstrated that the same holds true in

PNG. Alongside the IPTi trial, a prospective study was carried out in children aged 3 to 27 months to address this question.

A total of 3942 children with fever and a negative RDT (ICT Combo®) were not treated with an antimalarial.

Less than 1% (29) of these children re-attended within 7 days with possibly missed malaria. Most of them had mild symptoms and could be treated as out-patients; only four had severe symptoms and *Plasmodium vivax* parasitaemia without knowing if the severity of the disease could be attributed to malaria or another concomitant disease (because they had also signs and symptoms of severe respiratory infection). All were cured.

These data suggest that also in PNG, children with a negative test do not need antimalarial drugs. In fact, dispensing highly efficacious antimalarials to test-negative children is a waste of resources, can foster drug resistance, and may potentially undermine the public's trust in the new treatment regimen.

There is recent evidence from Africa that clinicians who have been using RDTs have understood the usefulness of the tests, in particular that their performance is not different in children under five years than in adults.

If adequate supply of RDTs and proper training of health care workers is provided, it should be possible to ensure that in PNG only those with malaria are treated with antimalarials – and that adequate attention is paid to other illnesses in malaria test-negative patients.

Round 8 Malaria Grant Implementing Partners



DEPARTMENT OF HEALTH

- Implementation of artemisinin-based combination therapy (ACT) as new malaria treatment: Artemether/Lumefantrine, branded 'Mala-1'
- Implementation of rapid diagnostic tests (RDTs) and improved microscopy in health facilities.



- Behaviour change communication promoting the proper prevention and treatment of malaria
- Advocacy and mass media campaigns for the National Malaria Control Program



- Distribution of long-lasting insecticide-treated nets (LLINs) to all households in PNG (over 2 million nets in years 1 and 2)



- Overall independent evaluation of the grant
- Operational research



- Training of health care workers in malaria case management using RDTs and ACT

Research at IMR boosted with new research units

BY GERALDINE VILAKIVA

The re-alignment of the Institute's research priorities has resulted in the formation of two new research units – Sexual and Reproductive Health (SRHU) and Population Health and Demography (PHDU).

The two units merged from the former Operational Research Unit (ORU). Under the PHDU, researchers are interested in assessing health problems and trends at the level of large populations. This includes the evaluation of the health impact of preventative and curative health interventions and the assessment of changes in disease patterns related to large-scale development projects. Health and Demographic Surveillance Sites (HDSS) are maintained for monitoring child mortality and causes of death and as a platform for population-level studies on a variety of health problems. The understanding and investigation

of health system's constraints plays a key role in formulating policy recommendations from data generated by the unit.

The one hundred and more unit staff from a variety of backgrounds (including social scientists, epidemiologists and public health scientists, clinicians, project managers and support staff), work in projects across all 20 provinces of Papua New Guinea. Dr Manuel Hetzel is the Head of this unit. The PHDU currently consists of three sections:

1. Malaria Control Section (MalCon)
2. Partnership in Health Program
3. Behavioral Research Section

The SRHU various aspects of research relating to sexual and reproductive health. The formation of a new SRHU represents a re-alignment of research priorities within the IMR and a renewed commitment to robust, policy-relevant research to improve sexual and reproductive health in PNG.

There are four main sections under this unit and they are HIV Social Research, Maternal Child Health, Clinical Studies and HIV/STI Laboratory. This unit is headed by Associate Professor Andrew Vallely.

IMR participates in first research fair

BY PAMELA TOLIMAN

PNG IMR participated in a research fair hosted by the World Bank and the University of PNG on the 6th of July. The research fair was held at the Holiday Inn ballroom and consisted of an exhibition in the morning followed by a round table discussion in the afternoon. Several research organisations and institutions participated at the research fair including the National Agriculture Research Institute, the Institute of PNG Studies, the Melanesian Institute, the University of Technology and the University of Goroka. The research fair provided an opportunity for institutions to exhibit and highlight their research activities.

Members of staff; Douglas Diave, Dr Patricia

Rarau and Pamela Toliman, represented IMR at the Research Fair. The IMR stall consisted of posters, a multimedia presentation, pamphlets and publications about IMR research units and projects. A roundtable discussion followed the exhibition included presentations and panel discussion on the theme of "Gender and Research".

Scientific officer Pamela Toliman presented findings from the Askim na Save Project that was conducted in 2009 by Dr Angela Kelly and her group. World Bank Country Manager, Laura Bailey, hailed the research fair a success for showcasing PNG institutions that are carrying out research into a broad range of issues relevant to the country.

The World Bank and the University of PNG aim to make the research fair an annual event.

Healthy Women Healthy PNG assists Well Women's Clinic



HWHPNG representatives Irene John and Pamela Toliman presenting new equipment to Well Woman's Clinic; Dr Mondarafa, Dr Kumbia and Sr Lavinia.

As part of our community service, the Healthy Woman Healthy PNG (HWHPNG), an IMR health awareness group, proudly presented items to staff of Goroka Well Woman's Clinic to assist its targeted health services to women.

The items included vaginal speculums, a medical trolley, an examination light, a footstool to enable women to safely get on and off the examination bed and a mobile phone to contact patients, particularly those in remote rural areas.

HWHPNG is pleased to support the Well Woman's Clinic which not only serves the women of Eastern Highlands but also neighbouring provinces.

Among other services, the Clinic offers Pap smears, a test that looks for changes or abnormalities in cervical tissue that may be caused by cancer.

The Goroka Well Woman's Clinic and Goroka General Hospital are about to partner with PNG IMR's Sexual and Reproductive Health Unit to investigate cervical cancer, screening and treatment and Human Papilloma Virus (HPV) in PNG. HVP, particularly types 16 and 18, has been shown to cause cervical cancer.

ONGOING ACTIVITIES AND PROJECTS

at the Population Health and Demography Unit

The PHDU consists of three main sections

1. Malaria Control
2. Partnership in Health
3. Comprehensive Condom Program

1. Malaria Control Section (MalCon)

Details of various studies under this section are stated below.

1.1. PNG & The Global Fund Round 8 Malaria Control Program Evaluation

PI: Ivo Mueller, Manuel Hetzel, Peter Siba

Timeline: 2009-2014

Funding: The Global Fund to Fight AIDS; Tuberculosis and Malaria

1.2. Reasons for non-use of long lasting insecticide treated mosquito nets

PI: Justin Pulford, Manuel Hetzel, Miranda Bryant, Ivo Mueller

Timeline: 2010-2011

Funding: The Global Fund to Fight AIDS; Tuberculosis and Malaria

1.3. Preparatory work towards a pilot of home management of malaria in PNG

PI: Justin Pulford, Manuel Hetzel, Miranda Bryant, Ivo Mueller

Timeline: 2010-2011

Funding: The Global Fund to Fight AIDS; Tuberculosis and Malaria

1.4. Artemether-Lumefantrine Clinical Effectiveness Study

PI: Manuel Hetzel, Ivo Mueller, Peter Siba

Timeline: 2009-2010 (delayed)

Funding: AusAID

1.5. In vivo and in vitro efficacy of the new first-line and second-line drugs for the treatment of uncomplicated malaria in Papua New Guinea

PI: Livingstone Tavul, Ivo Mueller, Manuel Hetzel, Peter Siba

Timeline: 2009-2014

Funding: The Global Fund to Fight AIDS; Tuberculosis and Malaria

1.6. Quality of Antimalarial Drugs at the Provider-Level in PNG

PI: Nancy Bala, Manuel Hetzel

Timeline: 20011-2012

Funding: The Global Fund to Fight AIDS; Tuberculosis and Malaria

1.7. Feasibility and acceptability of insecticide treated plastic sheeting (ITPS) for vector control in PNG

PI: Justin Pulford, Manuel Hetzel

Timeline: 2011-2012

Funding: IMR ICRAS

1.8. Control of Vector Borne Diseases to Lessen the Impact of Climate Change in Papua New Guinea – Project Evaluation

PI: Manuel Hetzel, Inoni Betuela

Timeline: 2011-2012

Funding: KOICA / WHO

Additional studies are collaborative projects led by other IMR units, e.g. on mosquito net bio-efficacy, Plasmodium population genetics, arbovirus infections in febrile patients.

2. Partnership in Health Program (PiH)

Details of various studies under this section are stated below.

2.1. Health and Demographic Surveillance System (HDSS)

PI: Peter Siba, Joe Burton

Timeline: 2010-2015

Funding: PNG-LNG

2.2. Cause of death: Improving Measures of Mortality by Cause

PI: Ian Riley, Alan Lopez, Chris Murray, Rafael Lozano

Timeline: 2010-2013

Funding: NHMRC – Australia

2.3. Non Communicable Diseases and Nutritional Transition

PI: Paricia Rarau, Gwendalyn and Suparat Phuanukoonnon

Timeline: 2011-2015

Funding: PNG-LNG

Additional studies are collaborative projects led by other IMR units, e.g. on STIs, tuberculosis, febrile illness and diarrhoea.



Some of the MalCon staff with Dr Justin Pulford (left) getting ready to go back into the field.

3. Behavioural Research Section

Details of various studies under this section are stated below.

3.1. Evaluation of Health Promotion Intervention in Eastern Highlands Province

PI: Geraldine Maibani

Timeline:

Funding: IMR

3.2. Comprehensive Condom Distribution

PI: Geraldine Maibani

Timeline:

Funding: IMR

UPDATE FOR THE PARTNERSHIP in HEALTH PROJECT (PiH)

BY JOHN TAIME

Since its establishment last year, the project has already set up four sites which it will be conducting research in. They are two impacted areas; Hides and Hiri; and two control sites; Asaro and Karkar Island. Research in those four sites will concentrate on five major public health and social problems - respiratory diseases, vector born diseases, TB, STI/HIV, diarrhea, social and non-communicable diseases. Data collection on those five major research areas has already begun using the Health and Demography Surveillance System (HDSS). This system is thought to be one of the most efficient solution to measure and verify associated problems fairly and transparently.

Being one of the biggest projects for the Institute, it will continue to require a lot of detail planning, resourcing, putting more time and effort to ensure all activities are running effectively and efficiently producing expected outcome on time. Nonetheless, most activities are progressing very well with good responses from the various communities at the four sites.

Hiri

Hiri and Hides are the two project impacted areas of the PNG LNG project. As such they are also the two impacted areas for the PiH project. Hiri was the first site that the project established in September 2010. Four villages were selected for the HDSS; Porebada, Boera, Papa and Lea Lea. Office and staff residences for the project were set up in Waigani however, increase in armed hold-ups and break-ins have forced the management of IMR to relocate the project's office to Gordons. With the establishment an office, recruitment of project employees as well as the start of the



Reporter Mea Morea (left) interviewing a villager from Boera village as part of the Nutrition Food Consumption survey in November, this year..

HDSS began. This include the recruitment and training of village reporters. Census for both Boera and Porebada villages were completed in July 2011 and the data is currently being entered at the IMR Madang branch. Verbal autopsy work is ongoing and there are preparations for disease surveillance in the coming months.

Hides

Consultation meetings with relevant stakeholders in the SHP were held in January this year to inform them about the project. Baseline census is ongoing in the areas by the project staff. Once the baseline surveys are completed, then all other health surveys will begin.

Asaro

Asaro started its baseline surveys in April and ended in August this year and the data entry for these surveys is in progress. The verbal autopsy surveys are still ongoing. Trial visits to validate the survey tools for both the socio-economic and nutrition surveys were conducted in the months of August to October. Preparations to begin the disease morbidity survey is underway and the project plans to begin these surveys in the new year.

Karkar

Work on Karkar Island commenced in July 2011 followed by the official launching of the project in early November.

Will bring more updates of progress of activities in the next report.



A reporter with the Karkar team conducting baseline survey in one of the villages on Karkar Island.

CASS Report *with*



Mr Samson Akunai

Find out what the Institute has been up to by reading the CASS Report. The updates are provided by the Deputy Director for Corporate Affairs & Support Services (CASS).

INFRASTRUCTURE DEVELOPMENT

Goroka transit accommodation

Due to the increase in activities at the all branches of the Institute, the movement of staff in and out of Goroka has increased significantly. This has put a lot of pressure on the only transit accommodation that is available within the Institute's head office premises. As a result, the management has decided to build another 2-bedroom transit house. Gold Bell Construction was awarded the contract and the building is nearing completion and should be ready within a few weeks time.

Acquisition of land at Gum, Madang Province

The operations at the Madang branch received a major boost when the Institute made the initial 10 % deposit to acquire a 1 hectare piece of land at Gum just outside Madang town. A Memorandum of Agreement (MoA) was signed on the 29th September 2011, with the land owner group - Palatek Land Group Inc - from the Gum area. This group holds a state lease on the parcels of land and after numerous discussions and negotiations with the Institute; they decided to sell a parcel to the Institute for us to develop our housing development for staff based in Madang. The signing of the MoA also paved the way for payment of the initial deposit for the land. A surveyor has already completed the subdivision survey of the land and formalities should be completed before the end of the year. Once this is completed, a geotechnical survey will be conducted prior to the actual ground earth works and development. The MoA signing was witnessed by Mr. Samson Akunai, DD/CASS; Andrew Raiko; Site Manager, Madang; Ketiri Rahanimo, private surveyor; Johannes Haay; and Nandao Tarongka.

Madang infrastructural development

The construction of the long awaited Madang Laboratory and office complex will finally begin before the end of the year. After lengthy tendering processes which include tendering, reviewing and selecting, the successful architectural firm, Alexander & Lloyd Architects, has been awarded the contract to design the laboratory and

office works. The signing of this contract between the PNGIMR and the contractor is expected soon and will be witnessed by the PNG Sustainable Development Program representatives. Once the signing is done, the architectural firm will develop the initial concept design phase for the proposed infrastructure and present it to the Institute and its key partners to review and have an input before the proper design is developed. It is exciting because there are clear provisions within the agreement for regular dialogue with the architect and other key stakeholders and this avenue will provide the opportunity to discuss issues and challenges with all key partners from design stage to contract awards and actual contract administration phases.

School of Medicine laboratory rehabilitation & upgrade

All the formalities for the rehabilitation and upgrade of the School of Medicine & Health Sciences laboratory at the Taurama Campus have been completed with the signing of the Investment Agreement. This was done between the Managing Director of Esso Highlands, Peter Graham Director and Director Prof Peter Siba in Port Moresby on the 3rd November, 2011. The signing now paves the way for the actual rehabilitation and upgrade work to begin. LAikos Architects, who have been awarded the contract, will be calling for expressions of interest from established construction firms to bid for the job before the end of November 2011. A steering committee to oversee the development works including the management of the laboratory will be decided between the UPNG-SMHS and the PNGIMR soon.

Closure of PiH office at North Waigani

The project offices for the Partnership in Health Program (PiH) at Waigani have been relocated to the main Gordons Administrative office site. The relocation is due to continuous armed hold ups and break-ins by criminals. The decision was a difficult one as the former location had adequate office and accommodation space which served the requirements of the PiH program.

CASS Report continues



The new vehicle parked in front of the Gordons office.

New administration vehicle for POM

The Port Moresby operations will experience increase in administrative errands once the Port Moresby laboratory work begins at the School of Medicine and Health Sciences. Also movement of staff from outside centres into Port Moresby will continue to increase and so management has made a decision to increase its vehicle fleet for general administration and has recently acquired a 4-door Harrier sedan. This new vehicle will cater for management and Council travel and business in Port Moresby.



Morris Sinivei
Internal Auditor



Levi Manenga
Junior Accountant

New accounts staff – Goroka

The accounts office at the Goroka headquarters has been under enormous pressure to adequately fulfil its role. The management has given due consideration to this serious problem and has made moves to address this matter by reassigning Ms. Eunice Wotene (formally the internal auditor) to take over the responsibility of senior accountant and she will now be responsible for all project financial management matters. This move has greatly relieved Mr Ulo Jasipa of the enormous pressure he had to endure in the last couple of months due to lack of adequate support. Appointment of two additional graduate accountants has been made. Mr Levi Manenga has been appointed as junior accountant to provide strength and capacity at the accounts office whilst Mr Morris Sinivei has been appointed internal auditor to take over from Ms Eunice Wotene. Whilst there is a backlog of outstanding reports that need to be brought in order, it is hopeful that given some breathing space, the accounts office with the current increase in staff will be able to successfully fulfil its role.

3 bedroom kit house

A 3-bedroom kit house from Hardware Haus is now nearing completion at Lopi, West Goroka. This house was initially ordered in 2009 and nothing was seriously done about the erection of the house since the departure of Mr. Saul Vilabat, the former Building Superintendent, until now. The construction of this building experienced significant delays as there were many instances of short supply of building materials and the onsite works had to be postponed on many occasions. The building is now finally nearing completion and should be ready for occupancy by the end of November 2011.

Launching of Karkar DSS

The PiH Health Demographic System was launched on the island of Karkar on the 10th November 2011 by the Member for Sumkar Open and Minister for Housing, Hon Ken Fairweather. When launching the program, Minister Fairweather thanked the management of IMR for choosing Karkar Island to undertake this important research work which will provide key findings to relevant authorities like the Department of Health which will in turn develop appropriate policies and health interventions to address some of the health problems affecting rural populations in PNG. He also extended his thanks and appreciation to the PNG LNG for supporting the work of the PNGIMR and expressed his gratitude on behalf of his electorate to both the PNGIMR and the PNG LNG for choosing Karkar Island as one of its operational sites. The occasion was witnessed by senior staff from both Goroka and Madang included PNG LNG representatives led by Dr Joe Burton and Mr Gibson Siune and including Gaubin Hospital staff and the community of Karkar. IMR runs two HDSS sites in the LNG impact areas of West Hiri and in the Hides area of the new Hela Province whilst Asaro and Karkar HDSS will be control sites.



The new kit house at Lopi, West Goroka



New Goroka transit house, still under construction



Launching of Karkar DSS

GOROKA IMR HOSTS OPEN DAY

The Institute successfully staged its Open Day events at the Goroka and Madang branches on the 7th of October with the theme partnering in health research. It was a first for Madang and the third for Goroka. At Goroka, the event was held at the Raunraun Theatre area. It was the first time for the event to be held outside of the Institute's premises.

All four research units at the Institute – Infection & Immunity, Vector Borne Disease, Sexual & Reproductive Health and Population Health and Demography - were represented by staff who organized very informative display booths, displaying the various research sections and projects under each of their units. The main purpose of the event is to inform the general public of what the Institute is about and to draw their attention to the different research work that is being conducted.

There was a really good turn out from the public in particular school and tertiary institutions that were really keen to know about the different research that are conducted. Almost all primary and secondary schools within the Goroka town sent their students to attend the event.

It was also an opportunity for the public to ask questions about the various diseases and the kind of research that is being undertaken to address these health problems. Scientific staff as well as the support services staff were on hand to assist and to answer all questions and

to distribute pamphlets and posters. Clinical staff were also present to test HB's, sugar levels, weight and to give out healthy living awareness information to interested individuals.

The Institute also invited our partners; the non-government organizations based in Goroka who were involved in various aspects of health to also set up information booths to promote their work. The five NGOs that had their information booths during the open day were Save the Children, Marie Stops, World Vision TB Program, Melanesian Institute and YWCA.

Apart from the displays, senior scientific staff also promoted the event on the provincial radio station – KBK Tokbek Show. However, power disruptions brought the whole program to a halt unfortunately. But it was an experience nonetheless.

One highlight of the event was the presence of the EMTV crew Meredith Kuusa and Adrian Gusage, who were invited to cover the event. Coincidentally, the youths at Red Corner where IMR is located were also doing volunteer clean up along the main road and were lucky to have the crew do an interview with them. Both events were later broadcasted on EMTV news the next day.

The IMR Open Day is an annual event and we are hoping for a bigger and better event next year.

IMR Madang hosts first Open Day

BY NOEL BARRY

The IMR Madang branch, staged its first ever Open Day at the Bates oval in Madang town on 7th October with the theme – Partnering with Health Research.

It was a successful event which saw all existing projects under the Vector Borne Disease Unit (VBDU) as well as the Tuberculosis study setting up information booths showcasing their respective studies and the research work involved.

All sections under the unit - Entomology, Immunology, Microscopy, Molecular Parasitology along with its major project groups Drug Studies, Intermittent Preventative Treatment in Pregnancy (IPTp) study and the TB studies held exhibition stalls.

The Data Management Unit also displayed their work as well as informing the public on how vital research findings are translated and managed through the database system.

The event attracted hundreds of interested public from within the Madang township who came to see and get information on the type of research work that is being conducted at the Institute.

The Open Day committee would like to thank all the staff for their tireless efforts both in Madang and Goroka and the senior management of IMR for making the Open Day a successful event in both locations.

Many thanks also to all the business houses who supported the Institute through cash and kind especially Lae Biscuits, Coca Cola, SP Brewrey the RaunRaun Theatre, EMTV and KBK FM.



Interested public including school students gathering at the CASS stall to listen to our training officers talk about the Graduate Program at the Institute.



The Occupational Health & Safety Committee from all branches posing for a group photo at the end of the week-long Fire Emergency Workshop.

Training NIUS

Information in this section is provided by the Institute's Training Office.

GRADUATE PROGRAM

2010 Forgaty Honours students graduate

Four out of the five Honours students successfully graduated with Honours certificates at UPNG early this year. They were Barne Willie, Valentine Siba, Samuel Hurim and Heather Huaupe. Wendy Kirarock is expected to graduate next year. The five are the last Honours students under the Fogarty Graduate Program. In the meantime, Barne is currently doing his Masters program at the Cleveland University in Ohio, USA. The graduate program under the sponsorship of the Forgaty program ended in May last year. From 2011 and the graduate program will be under the sponsorship of the PNG Partnership in Health project and will run for two years.

2011 Partnership in Health Honours student

This year's four honours students are Cassey Simbiken, Monalisa Kas, Danga Mark and Grace Bande. They are the first lot of Honours students under the Graduate program that is being sponsored by the PNG LNG project. Cassey is attached with the HIV/STI Lab, Monalisa is with the Bacteriology Lab, Danga is with the Molecular Parasitology Lab and Grace is with the Virology lab. All four also presented at the recent PNG Medical Symposium in Kimbe as part of their assessment. Grace and Monalisa each received the President's award for the best student presentation. They have completed all assessments and are currently working on their thesis which they will submit in December.

2011 Joint PNGIMR/ DWU Epidemiology & Biostatistics Workshop

A joint workshop on Epidemiology and Biostatistics was held recently for staff of Divine Word University and PNGIMR. The workshop was aimed at equipping scientists, researchers and staff from both institutions to better understand the epidemiology and Biostatistics. The workshop was facilitated by Case Western Reserve University, from September 26-28, 2011 at DWU.

The workshop was facilitated by 4 faculty and post-doctoral fellows from Case Western Reserve University, Cleveland, Ohio, USA.

A total of 17 participants, 12 from PNGIMR and 5 from Divine Word University, attended the workshop.

The three day workshop focused on research methods, measurement, analysis, and dissemination for novice and experienced scientists. Quantitative and qualitative methods of research were presented, along with mixed method approaches. Data generation methods (both qualitative and quantitative) were presented. Data analysis focused on quantitative data analysis with presentations of descriptive statistics, correlation, regression, and mathematical modeling approaches. Individual and group consultations were provided to all participants to assist in their individual study designs and data analyses.

bits & pieces

- Lincoln Timinao and Barne Willie are Graduate Scientific officers who are currently pursuing their Masters program overseas. Lincoln is attached to the Malaria Parasitology Lab while Barne is with the HIV/ STI Lab. Both left in August and September respectively for Swiss Tropical Research Institute in Switzerland and Case Western Reserve Uni in Ohio, US. Both will be pursuing their Masters in Science studies for two years.
- Meantime, Dr Patricia Rarau and Pioto Namugium have handed in their thesis for their Masters program at the UPNG. Dr Patricia is doing her Masters in Medical Science at UPNG while Pioto is doing his Masters in Public Health. Also Pamela Toliman, Dr Paul Harino and Dr Benjamin John are expected to hand in their thesis in Masters in Medical Science - UPNG in the second week of December. We wish them all the very best.
- Christine Opa, has completed her one-year Post - graduate Diploma in Public Health at UPNG and is back. She will be graduating early next year.
- The 2012 Partnership in Health graduate program is now open for all interested applicants who want to be in the Graduate program next year. However, priority will be given to applicants from the PNLNG impacted areas which is SHP/HELA, Gulf and Central provinces.

WHO Malaria Microscopy External Competency Assessment & Training Workshops

These workshops were conducted at IMR Madang from the 6-10 September, 2010 and from June 20-24 2011.

The training was organized by Dr Leanne Robinson, Mr Dickson Kuvi, Mr John Yogiyo from the Training Unit and Prof. Peter Siba, Director of PNGIMR. Both workshops were facilitated by WHO Malaria Microscopist Ken Lilley.

The following is an interview done with Dr Leanne Robinson about the workshops.

1. What were the workshops about?

The workshops aimed to assess the competency of malaria microscopists and provide updated information and training in relation to the standardized WHO recommended method of counting being utilized all over the world. They also raised important issues of quality control procedures for slide preparation, staining and counting.

2. Who funded the workshops?

The first workshop was funded by PNGIMR from its allocated training budget and the second by IMR projects that utilize malaria microscopists.

The course facilitator, Ken Lilley, is employed by the Australian Army Malaria Institute (AAMI) and is also the Malaria Microscopy representative of the WHO Office for the Western Pacific.

3. In what way do you think the workshops are going to benefit IMR?

These workshops mark the beginning of a comprehensive training and evaluation system for the malaria microscopy team at the IMR that will enable the microscopists to continue providing a high level of diagnostic services to both the IMR and the wider community. They have identified areas where further training is required and also updated knowledge and skills in relation to current best practise and provided microscopists with the confidence and ability to continue with independent self-assessment and training. Conducting these externally facilitated workshops annually will allow IMR microscopists to continue to improve and develop their skills, which is critical to the work PNGIMR.

4. Where were the workshops held?

The first workshop was conducted at the Divine Word University (DWU) Research Centre, Modilon Campus, Madang & the most recent workshop was conducted at PNGIMR Yagaum.

5. How many participants took part in the workshops?

In total, 24 participants attended the two workshops.

6. Were they all from IMR? (Goroka, Madang, Maprik?)

The participants were field and laboratory-based malaria microscopists from all IMR sites (Goroka, Madang & Maprik), as well as several malaria microscopists from Modilon Hospital and DWU.

7. Your comments on the workshops.

In addition to providing greatly needed competency assessment and updating knowledge and skills, the workshops have provided a significant morale boost to all microscopists, sparking a renewed motivation for achieving quality results. Importantly, it was beneficial to conduct the course with a range of IMR, hospital and university based microscopists, bringing together people with different levels of experience and promoting a collegiate environment where everyone could learn from their combined experience. We look forward to making these workshops an annual training event.



Scholar Hasu (IMR Goroka) & Nandao Tarongka (IMR Madang), Sept 2010



All workshop participants with Ken Lilley, Sept 2010



Nixon Padapu (IMR Madang), Jennifer Igu (IMR Madang), Jane Simbrandu (IMR Maprik) & Ken Lilley, June 2011.



Sylvia Raulo (IMR Madang), Lindy Maken (IMR Maprik), Trevor Mare (IMR Madang) and Christine Kalopo (IMR Madang), June 2011.

spotlight

PNGIMR leading cholera Research in PNG

BY DR ANDREW GREENHILL

Papua New Guinea is home to many infectious diseases, such as malaria, pneumonia and tuberculosis. These and other diseases have been a problem in PNG for many years, and are major causes of illness and death amongst the PNG population. One tropical infectious disease that has not been a problem historically in PNG is cholera; despite it being a major problem in other parts of the world. Infection with *Vibrio cholerae* can cause the disease cholera, which is an acute watery diarrhoea. The diarrhoea can be so severe that patients become severely dehydrated, resulting in death.

Until recently, cholera was not a major health concern in PNG. However, that changed in mid-2009 when the first cases of cholera were reported in the Morobe Province. Since then the disease has spread throughout lowland PNG, and to date there have been over 15,000 cases and over 500 deaths. Given that cholera has only recently become a problem in PNG, little is known about the disease in this country. PNGIMR is trying to address this lack of knowledge, and has been conducting important research on cholera for the past 18 months.

"There are many questions that need answering about cholera in PNG" said Dr Andrew Greenhill, the Head of Bacteriology at PNGIMR. "One of the questions being asked during the early stages of the outbreak was from where had cholera come, and how did it get here."

With these questions in mind, the research team conducted molecular studies to determine how closely related the isolates are to each other, and to isolates from other countries. Dr Paul Horwood, the Head of Virology at PNGIMR, has played an important part in this component of the research.

He said, "we now know that all the

isolates of *V. cholerae* in PNG are very closely related. This suggests that the pathogenic strain recently arrived in PNG. The strain of *V. cholerae* is related to some isolates from countries in South-east Asia, but it is not possible to tell exactly where the germ came from due to the lack of data from other countries."

He also stated that although the spread of cholera has slowed in recent months, according to the cholera research team PNG should not be complacent.

"*Vibrio cholerae* survives very well in water. It is likely that the recently arrived pathogenic strain is surviving in the rivers, estuaries and coastal water in PNG. Under certain environmental conditions the number of *V. cholerae* may increase in the environment, leading to further outbreaks of cholera," said Dr Horwood.

Consequently, the research team is now developing methods to detect *V. cholerae* from water, and they will conduct surveillance of waterways in the Lae area to see what factors influence numbers of the pathogen.

Alice Lafana, a graduate scientific officer, has been working on this project.

Spotlight allows you to read in detail the various studies that are undertaken at IMR. In this edition of the spotlight, we will look closely at one study - the Cholera Research. Dr Andrew Greenhill, Head of Infection and Immunity Unit and the Bacteriology Laboratory gives an insight into the study.



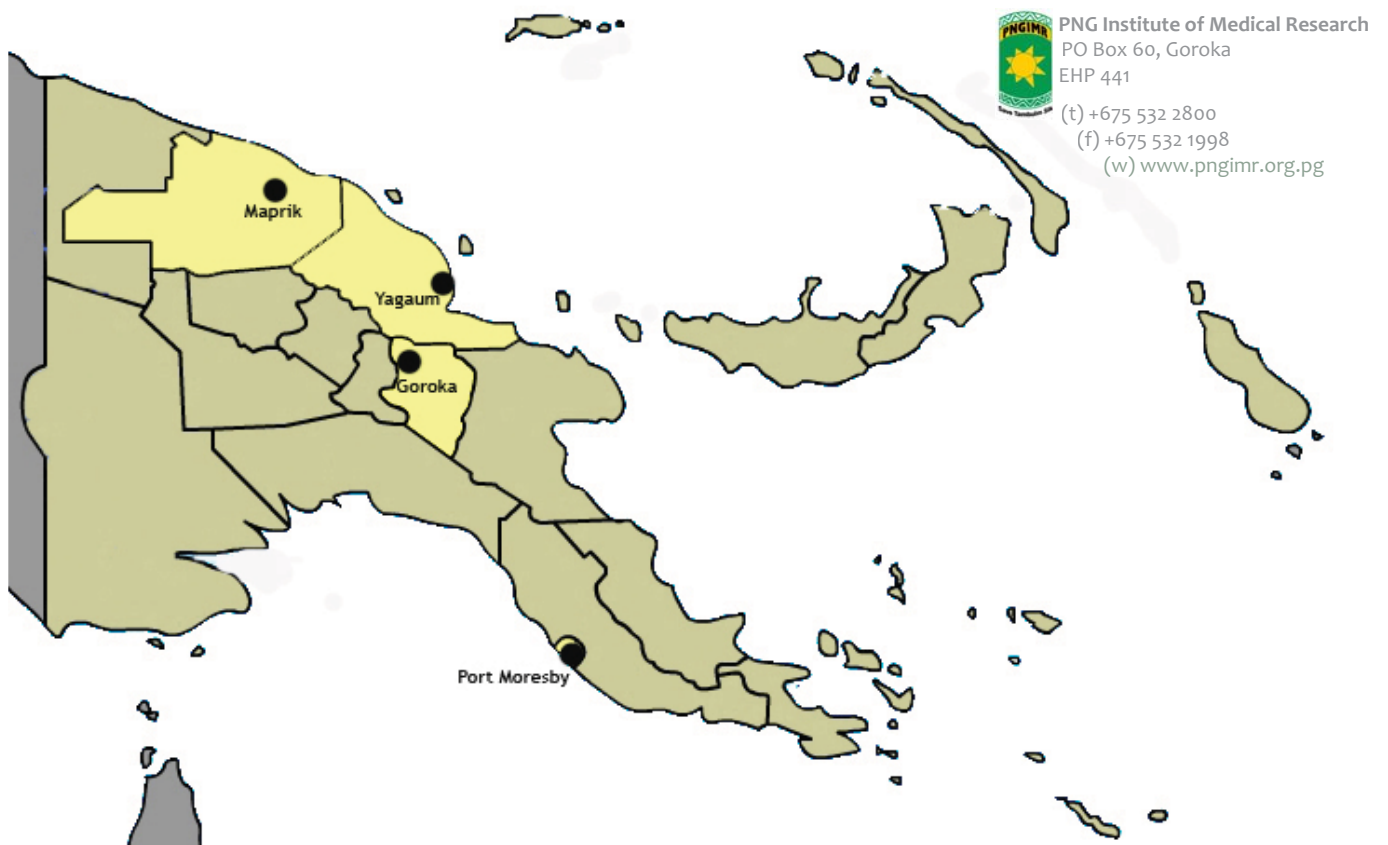
Scientific staff working in the Bacteriology Laboratory. They are isolating *Vibrio cholerae* (the bacteria that causes cholera) from environmental water samples.

"We have almost completed our optimization of the detection methods and very soon we will be using the best methods to detect *V. cholerae* from water," says Ms Lafana. She adds, "these results may also enable them to predict an outbreak of cholera if numbers of the germ in water are increasing."

Given the potential ongoing threat of cholera in PNG, the research team is very keen to continue their research. Although our research is still in its early stages, we have made good progress to date.

We have other aspects of cholera research: an Honors student, Monalisa Kas, is trying to improve diagnosis; and a graduate scientific officer in Port Moresby, Elias Nomosha, is incorporating GIS. We also have some excellent collaborators included staff at the Port Moresby General Hospital and the PNG University of Technology; and are grateful to those that have supported the research to date, including WHO and the PNGIMR ICRAS.

Our Locations



The IMR Nius is a quarterly publication of the Papua New Guinea Institute of Medical Research and is written and edited by Geraldine Vilakiva of the Institute's Communications Unit. News contributors include PNGIMR management, Research Units and Departments including Madang and Maprik branches. To be included on our mailing list, please contact us at the following address:

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