RAM Conference 2012

Australian Army Malaria Institute

Gallipoli Barracks Enoggera Qld

The official welcome was extended to delegates by Professor Dennis Shanks on behalf of the Army Malaria Institute. DG Carolyn Kruger extended the welcome on behalf of District 9600.

Maj. Alison Auliff briefed the delegates on the Security requirements of the weekend prior to RAM Chair PDG Ian Sayers doing the housekeeping and introductions.

Our first speaker was Prof. Dennis Shanks who gave us a potted history of the Army Malaria Institute and how, and why, it came into being, and what is its role today.

The battle of Milne Bay in Sept 1942 launched the necessity of the unit when the allied units that landed there had developed in excess of 1000 cases per 1000 by November that year. Malaria was so bad military operations had to be closed down. The controls put in place then reduced the rate to nearly 0 by the end of the war.

When the Army was initially deployed in East Timor they encountered another outbreak of the disease and this was quickly bought under control with Chloroquine and Primaquine.

The Institute is staffed with 27 Scientific officers (11 with PhDs) 10 military (Medical Corps personnel) and 17 civilian employees. The research areas covered are Drug Resistance Diagnostics, Drug Evaluation, Clinical studies and Evaluation, Entomology and Arbovirology. Field investigations include ADF in East Timor, Tulagi in the Solomons and the Santa Cruz elimination project.

International collaborations include WHO, US Military (Various Locations), Vietnam-Australia Defence Malaria Project (Hanoi), Wellcome Trust Unit (Bangkok), Eskitis Institute Griffiths University, Bayer Pharmaceutical Company (Germany), Jacobus Pharmaceuticals (New Jersey) and the Walter and Eliza Hall Institute (Melbourne).

Solomon Islands Malaria Eradication

Following the 1958 campaign to eliminate yaws it was decided to try to eliminate malaria. Various pilot projects were established including the spraying of DDT. Unfortunately the program was unsuccessful due to the following reasons:-

1. Inability to do intense surveillance over widely scattered islands
2. Inability to kill residual parasites especially vivax with mass drug administration
3. Inability to continue high level of resources required for spraying operations

The Solomons present a difficult control program with the movement of people between the islands. Guadalcanal is the key to malaria control as many people bring new parasites to Honiara. Most malaria detected in the Solomons is *P vivax* at very low levels and only detected by molecular methods.

AusAid is currently in the middle of a four-year, $25 m to try to eliminate Malaria in Melanesia. AMI is working in Tanna, Santa Cruz and Isabel, and has surveyed over 20,000 people

The main problem facing elimination is people not attending clinicsfor a blood smear if they are not sick. Currently malaria on Santa Cruz and Isabel has been reduced to 3.7%

To be totally successful resources need to be committed for at least a decade and preferably 20 years, a simple way to do malaria parasite surveillance and a better form of mass drug administration that kills residual *vivax* parasites in liver

Prof. Shanks and Maj. Auliff then conducted tours of the facilities.

PDG Richmond Manyweathers bought us up to date with the AAV program. To date Clubs have donated over $1,129,000.00 to the program. Most has gone to PNG and the Solomons. Currently PNG funds are being held until the Global Fund money is used. Funds for the Solomons are being used to supply villages with the tools necessary to keep village environments clear of stagnant water.

Our campaign to supply nets to Timor Leste has reached $85,000 approx and we are in a situation where we can order the nets. This will be done once the distribution program has been supplied by the Timorese National Malaria Control Program.

Richmond also advised that the Tenterfield RAM Fishing Fundraiser will now be held in January.

PDG Wayne Morris – Solomon Islands Update. Significant gains have been achieved in 2011 with 46,000 bed nets distributed in 2011. 91% of households surveyed own at least one net and 81.5% of households owning more than one. 37,900 households sprayed during 2011 and the annual incidence of malaria reduced from 75 per 1000 in 2010 to 46.5 per 1000 in 2011. Currently the overall malaria incidence is running at 4.6% down from 16.2% in 2000.

The plan for 2012 is for a reduction of annual incidence to 4% and reducing annual malaria related deaths to less than 1/1000. To increase access to early and quality diagnosis and accelerate malaria elimination efforts in Isabel and Temotu Provinces. The netting coverage program to be maintained and topped up as necessary.

Adopt – A – Village tools program The Ministry of Health is implementing Tools for village's concept in its healthy community program.
Ten communities on Isabel provided with tools and another four identified.
Isabel and Guadalcanal to be covered first.
Assessment of suitability of tools to be done in 2012

World Malaria Day was celebrated with the 2012 theme "Sustain Gains. Save Lives. Invest in Malaria" The campaign activities ran from the 2nd- 25th of April with radio and television spots, three billboards along highway in Honiara and 5000 flyers distributed to domestic ships/aircraft.
It was officially launched on 25 April on SIBC and included a talk back program.

Dr Paul Griffen, Microbiology Registrar, Queensland Institute of Medical Science,
Dr Griffen spoke on "how can we find out if new anti-malarial drugs can cure malaria. Paul bought us the latest figures on how all the global efforts are reducing the annual number of cases of malaria and the improvement in child mortality numbers. The Global reduction in child mortality has been reduced by 25% since 2000

To date there is no licensed vaccine, and the one currently undergoing trials is having only limited success and has raised some additional questions as to how long it is effective, and when will a booster be necessary.

Additional concerns are being raised as resistance is being found of the vector to insecticides. Forty five (45) countries have resistance to at least one of the four classes of malaria control insecticides.

Further resistance has also been found in South East Asia to Artemisinin. This drug is in the front line drug in the treatment of Malaria, and the resistance is of great concern.

Problems in assessing new antimalarial drugs include field sites where malaria is endemic, ethical issues, co-infection and re-infection, co-morbidities, political issues and long regulatory timelines. The current vaccine being tested in Africa was discovered nearly 14 years ago and is still not approved.

Paul then led us through the Clinical procedures necessary in developing a new drug, and detailed some recent trials held in Brisbane.

He concluded that the unique Queensland resource had attracted international interest and support. It has hastened progress in new anti-malarials to field trials and expanded knowledge of the pathology of *P.falciparum* infection. These conclusions may aid other areas of areas of malaria research including diagnosis and vaccine development. A call for volunteers to assist in clinical trials finished Paul's presentation.

Timor Leste Presentation. Raul Sarmento and Johanes Don Bosco from the National Malaria Control Program, Timor Leste, bought us up to date on the situation in Timor Leste.

They reinforced the strategies detailed last year and updated us on how they saw these objectives for 2012 being achieved. There has been a reduction from 223,002 confirmed cases of malaria in 2006 to 42060 in 2011. Deaths have been reduced from 58 to 10 in the same period.

Six imperative strategic approaches have been adopted:-

1. Enhancement - case management through early case detection and delivery of effective anti-malarial therapies
2. Distribution of LLINs through targeted delivery to vulnerable populations with universal access to LLINs by providing one LLIN/two people in malaria risk areas.
3. Integrated Vector Management covering IRS, environmental manipulation, larval control, personnel protection for malaria prevention
4. Epidemic preparedness and prevention or outbreak response in emergencies
5. Involve community participation and undertaking Behavioural Change Communication (BCC) through Information, Education and Communication (IEC) Campaigns
6. Monitoring, Evaluation & Operational Research

To date over 279,000 LLINs have been distributed and to cover the population with one net for every two people, they need another 265,000 nets. They have a planned distribution of 166,000 LLINs through the Global

fund, and have asked Rotary to help with 25.000 LLINs. To finish the task another 75,000 LLINs are necessary to cover the low risk areas of Timor Leste.

Papua New Guinea update. PP Ron Seddon and Rio Fiocco informed us that RAM Port Moresby had nearly finished the first round of covering the whole of PNG with LLINs. To date over 3,000,000 LLINs have been distributed.

They were already in the planning stage to repeat the process starting later in 2012, and hope to have round 2 completed by the end of 2014.

The value of using LLINs has now been validated by a recent survey conducted by PNG Institute of Medical Research. They collected blood samples from people and children from 17 of their 21 provinces.

Results proved a major reduction compared with the 2008/9 survey. On average, 6.8% of all surveyed individuals and 7.0% of all children under the age of five years were infected with malaria parasites. *Plasmodium vivax* was more prevalent than *P. falciparum* in all age groups and in most individual survey locations. Infections with other malaria species and mixed infections were extremely rare.

The decrease in prevalence coincided with a significant increase in mosquito net ownership and usage but preceded the implementation of the new Citation artemisinin-based combination therapy treatment protocol.

A great result in PNG and RAM Port Moresby must be congratulated for their great effort.

Professor Michael Good. Principal Research Leader, Institute for Glycomics, Griffith University.
Professor Good was our guest speaker at the Conference dinner held at the Arana Leagues Club. He bought us up to date with the work being done at Griffith University on a vaccine to cover the four types of malaria. The work being done is hampered by Australian Government regulations which prohibit the use of Australian donated blood for medical experiments. This has resulted in the costly importation of blood from America at $2,800.00 per litre.

Work on the vaccine has progressed to the stage where it is now ready for human trials. These will occur later this year with Professor Good volunteering to be the first.

Day Two

Jo Beilby, District RAM Chair, District 9810. Jo presented the meeting with two proposals in relation to the Walter and Eliza Hall Institute. The first was in relation to the training of clinicians and the second was for the fit out of a new insectarium. Jo enquired if there was any funding available through RAM. Unfortunately all our funds are committed to the AAV program and the supply of nets.

Suggestions were offered on how to achieve her aims. The first to be treated as a funding only RAWCS project, and the second to be organised as a Matching Grant project through The Rotary Foundation.

Professor Maxine Whittaker. Professor of International and Tropical Health and the Director of the Australian Centre for International and Tropical Health at the University of Queensland, Australia. Professor Whittaker is also the Executive director of the Pacific Malaria Initiative Support Centre (PacMISC)

A Tale of Two Countries. Maxine presented us with some interesting observations on how the netting program was accepted in the Solomons and Vanuatu.

On the local information available:-

1. Ever heard malaria messages

   Van: 78%

   Sol: 41%

2. Ever seen malaria messages

   Van: 80%

   Sol: 37%

3. Women's (WRA) knowledge of fever link to malaria

   Fever link to malaria:
   Van: 93.2%
   Sol: 63%

   Mosquito bite link :
   Van 99.1%
   Sol: : 83%

Malaria can kill:
Van -
Sol Is: 98.1%

Preventative measures:

Knowledge/Acceptability

Net can prevent malaria
Van: 84.4%
Sol: 84%

IRS can kill mosquitoes
Van: 20.5%
Sol: 35%

Net ownership was higher in the Solomons with 91%, to71.6% in Vanuatu and the overall usage was also higher in the Solomons. The Solomons were also far more advanced with household spraying with nearly 54% sprayed compared to only 10.3% on Vanuatu.

However it was surprising to note that the adult population of the Solomons sought treatment earlier than Vanuatu, but those in Vanuatu sought treatment for their children quicker than those in the Solomons.

Overall the Solomons are currently more successful in the achieving of their objectives primarily driven by the near two fold increase in LLIN coverage, up from 46% to 91%

RAM Chair Ian Sayers wrapped up the Conference and moved a vote of thanks to the Prof Shanks and the Army Malaria Institute for hosting the weekend and sharing their facilities with us.