THE FEDERATION OF INFECTIOUS DISEASES SOCIETIES OF SOUTHERN AFRICA

FIDSSA Quarterly

Volume 3 Issue 4 1st December 2012

Special points of interest:

- 5th FIDSSA Conference 2013
- FIDSSA-GSK Research Fellowships awarded
- Diagnosis of Syphilis
- Conference season feedback

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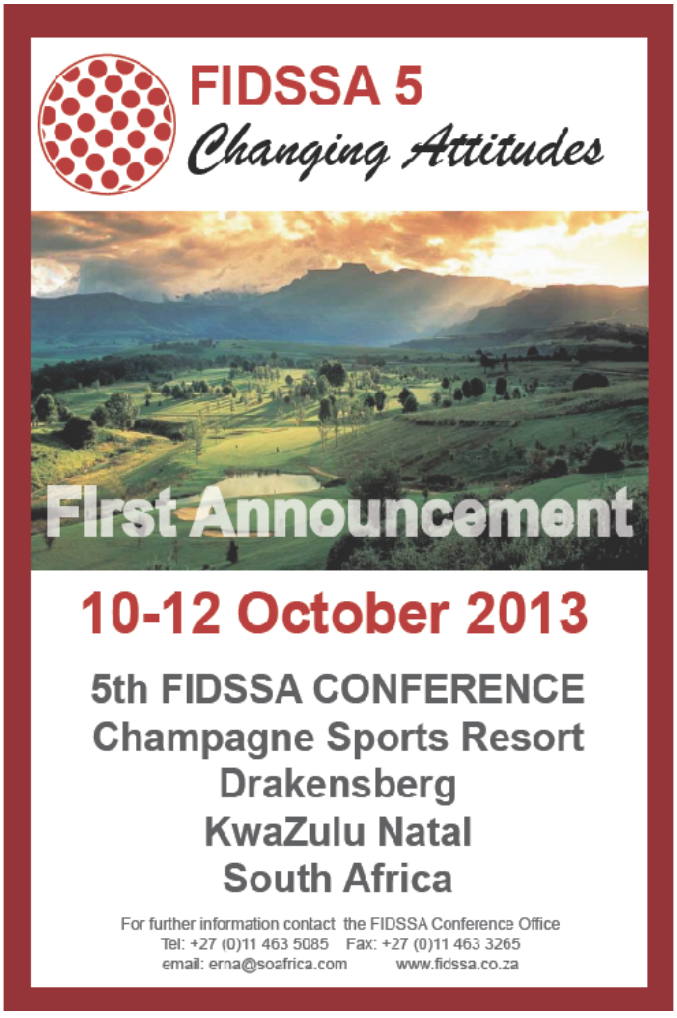
SAVE THE DATE: 5th FIDSSA CONFERENCE 10-12 October 2012



We are delighted to announce that the next biennial FIDSSA Conference, FIDSSA 5: Changing Attitudes, will take place at the Champagne Sports Resort, in the Drakensberg mountains of KwaZulu Natal from 10-12 October 2013.

Next year's conference was scheduled to visit Cape Town, but as the FIDSSA conference has grown in popularity, the venue size required to stage the conference has increased. Unfortunately, Cape Town does not currently have a venue that is affordable and can take the anticipated number. Hence, our return to KwaZulu Natal, but this time, to the beautiful setting of the Drakensberg Mountains.

Despite the shift in venue, FIDSSA 5 will be organized by a committee largely from Cape Town, chaired by Professor Andrew Whitelaw with representatives from IDSSA (Dr Tom Boyles), SASPID (Prof Brian Eley), SASCM (Dr Mischka Moodley), ICSSA (Sister Briette due Toit), STDSSA (Prof JoAnne Passmore) and SASTM (Dr Salim Parker) representing FIDSSA's 6 societies. For the first time, a trainees representative (Dr John Black) will join the committee with the addition of Prof Graeme Meintjies, Dr Jantjie Taljaard, Dr Adrian Brink, Prof Lucille Blumberg and Prof Marc Mendelson. Arrangement of the scientific programme is in full swing and each individual society will be hosting an international speaker joining leading national and regional speakers to bring you a wonderful mix of lectures, discussions, debates and workshops. A whole-day pre-conference meeting of the South African Antibiotic Stewardship Programme (SAASP) will take place on the 10th October. More details of this, and FIDSSA 5 will be available on the conference website shortly. For more information, go to http://www.fidssa.co.za. SEE YOU THERE!!

2012 Winners of the FIDSSA-GlaxoSmithKline Research Fellowships

Aetiology of childhood pneumonia

Dr Dave le Roux studied medicine at UCT, then completed a DTM&H while working in the Limpopo. He completed his paediatric registrar training at Red Cross War Memorial Children's Hospital (RCWMCH) in Cape Town, and obtained an MPH from the Johns Hopkins Bloomberg School of Public Health. Dave researched the impact of the 2009-2010 measles epidemic on RCWMCH as part of his MPhil, under supervision of Professor Brian Eley. He completed the Certificate in Paediatric Infectious Diseases in October 2012, and will begin a PhD in 2013.

Childhood pneumonia is the leading cause of mortality and morbidity in children under 5 yrs. Pneumonia accounts for 18% of the approximate 8.8 million child deaths each year, more than HIV, measles and malaria combined. Most childhood deaths occur in low or middle income countries (LMIC), and the African continent bears a particularly high burden. The aetiology of severe pneumonia in LMIC has not been comprehensively studied despite the large burden of pneumonia and unique environmental and host factors. Aetiology of ambulatory pneumonia, and the risk factors for progression to severe disease are not well described.

The "Aetiology of Childhood Pneumonia Study" will form a sub-section of the Drakenstein Child Lung Health Study. The Drakenstein Child Lung Health Study is a birth cohort study centred around Paarl in the Western Cape. Mothers are recruited ante-natally, and children will be followed for the first 2 years of life.

Together with my supervisors, Professors Heather Zar and Mark Nicol, I will investigate hospitalised and ambulatory children with pneumonia. Comprehensive microbiological testing will be performed, including bacterial culture with antimicrobial susceptibility testing, *S. pneumoniae* serotyping, and PCR testing for common respiratory viruses, as well as *Pneumocystis jirovecii*, *Mycoplasma pneumoniae*, *Chlamydophila pneumoniae* and *M. tuberculosis* (culture and GeneXpert). Chest x-rays of hospitalised children will be interpreted by three independent experts. We aim to provide a comprehensive description of the incidence and aetiology of hospitalised and ambulatory pneumonia, as well as risk factors for progression of disease, short-term outcomes and long-term sequelae. I am very grateful to FIDSSA-GlaxoSmithKline for the opportunity that this Fellowship provides. I look forward to working in such an important and exciting area, and I hope to make a contribution to child health and child survival in South Africa.

Seroprevalence of *Fasciola* infection in the Eden and Cacadu districts of South Africa

Dr John Black is a senior registrar in infectious diseases in the department of Medicine at the University of Cape Town's Health Science faculty. John attained both his undergraduate and FCP(SA) at the University of Cape Town before starting his infectious diseases training. In addition to clinical experience in South Africa, John has worked in the UK and New Zealand. He is widely travelled and will be taking up a position in the Department of Medicine at Port Elizabeth Academic Hospital Complex on completion of his Infectious Diseases training.

Fascioliasis is a food and water-borne parasitosis caused by the trematodes *Fasciola hepatica* and *Fasciola gigantica*. Two cases of human fascioliasis were described in South Africa in 1956. Susequently there have been no cases reported in the literature, leading to the supposition that human fascioliasis is an extremely rare or non-existent human infection in South Africa. We have recently diagnosed 2 cases of fascioliasis from the Natures Valley area in the Eden District. Both the intermediate snail *L. truncatula* and domestic ruminants infected with *Fasciola* are found in the Eden district and it is likely that *Fasciola* infection is hypoendemic or at least causing further autochthonous infections that are often missed due to the non-specific nature of presentation.

Unlike other helminths, benzamidazoles such as albendazole or mebendazole are not active against Fasciola. Hence the diagnosis and correct treatment with triclabendazole is critical. This research project aims to

investigate the seroprevalence of *Fasciola* infection in patients who fit a prescribed case definition for fascioliasis, who live in the Eden and Cacadu districts of the Western Cape/Eastern Cape. Not only will it act as the first step in a research programme in this neglected tropical disease (NTD), but will also set up serological screening for Fascioliasis as a national resource at the National Institute of Communicable Diseases NICD. This project will be co-supervised by Professor Marc Mendelson at UCT and Professors Lucille Blumberg and John Frean at NICD.

1st International African Vaccinology Conference: "Advocating for efforts to protect African children, families and communities from the threat of infectious diseases"

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"Wake up Africa, your children are dying!"

Nigerian virologist Professor Oyewale Tomori's voice cracked as he made this final impassioned plea to a hushed gathering of about 500 delegates from 40 African countries at the first International African Vaccine Conference held recently in Cape Town.

Fighting back tears, he spoke of the reality of millions of people, mainly children under the age of five, dying needlessly and painfully on the continent because they do not have access to existing and new life-saving vaccines that prevent infectious diseases.

Tomori raged at the suggestion that poor African countries had competing health priorities saying "Whose priorities? What priorities? Is a R270 million house for South Africa's president a priority for the people, for the children? Nigeria has the highest number of private jet owners on the continent. Is that a priority?"

The conference was organised by the Vaccines for Africa Initiative based at the University of Cape Town (UCT) and The National Institute for Communicable Diseases, a branch of the National Health Laboratory Services. It brought together health workers, immunisation programme staff, researchers, representatives of civil society, international agencies and governments to share knowledge and find ways to reduce the global 1.5 million child deaths per year as a result of vaccine preventable diseases.

The conference was preceded by nine pre-conference workshops. This included society meetings: the African Paediatric Infectious Diseases Society (AfPIDS) Foundation launch, the 7th African Rotavirus Symposium and the Influenza in Africa – Afriflu 2012. Other workshops addressed essential vaccine issues in Africa: Surveillance of Adverse Events following Immunization, communication, advocacy and social mobilization, the role of partially effective vaccines, evidence based approaches to immunization policies and national immunization technical advisory groups (NITAGs).

The conference also hosted four industry sponsored workshops covering a wide range of topics including: pneumococcal vaccines, HPV, dengue, influenza and rotavirus vaccines.

Emerging researchers showcased their work. There were 37 oral papers and 81 poster presentations covering a comprehensive set of topics relevant to vaccination programs, including ethics, program issues, existing vaccines (polio) and emerging vaccines (TB, malaria).

of access to immunisation is a denial of children's basic human rights. "The title *International African Vaccinology Conference* captures the spirit and intent of the gathering - to signal the urgent need to secure a global commitment to addressing the challenges to achieving universal childhood immunisation in Africa," she said.

Almost all African countries (except Somalia) have ratified the Convention on the Rights of a Child - confirming the legal entitlement of every African child to the right to survival, to universal access to health care, and especially to universal access to preventive measures, such as immunisation, she said. "So your vaccine efforts ... have to be underpinned by this value if we are to address the inequity which plagues immunisation access."

Giant strides have been made since the global launch of the Expanded Programme on Immunization by the World Health Organisation in 1974. An estimated 2.5 million children are saved annually due to vaccines against infectious diseases. The Global Alliance for Vaccines and Immunisation (GAVI), through funding, has enabled poorer countries to introduce new life saving vaccines, but progress has been slow. Vaccine development has also advanced, with new vaccines being brought to the market and others in the late stages of clinical trials. The time from registration of a new vaccine to introduction in low income countries has been significantly reduced, with the introduction of the new rotavirus and pneumococcal vaccines introduced with GAVI and industry support about at the same time. These vaccines prevent the leading causes of child mortality, namely: pneumonia and diarrhoea. We also have new vaccines, like Men A vaccine aimed solely for the meningitis belt in Africa.

Recently in December 2010, global health leaders committed to making the next 10 years the Decade of Vaccines - to ensure discovery, development, and delivery of life-saving vaccines globally, especially to the poorest countries.

However, despite these initiatives ,about 6 million children remain incompletely immunised in Africa leading to over 1.5 million deaths annually. These coverage rates contribute to Nigeria's inability to eliminate polio and the re-establishment of transmission in Angola, Chad and the Democratic Republic of Congo. There are a further 10 African countries "the wild poliovirus importation belt" where transmission has previously been stopped, but has been imported from the endemic countries (Afghanistan and Pakistan). The lessons learnt from India, the latest country to be declared polio free for the first time in August 2012, in eliminating polio, , were presented. Although the America's have eliminated measles, Africa still suffers frequent outbreaks due to poor coverage. African ministers of health passed a resolution calling for measles elimination by 2020, at the 61st WHO session of the Regional Committee in Africa. The first key milestone to measles elimination is to assure that all countries in the region reach a 90% coverage with the first dose of measles at national level.

The conference noted that African countries must improve our immunisation programmes to save lives. Delegates resolved to enhance immunisation programme performance by strengthening: human resources at all levels from grass roots to the health department; collection and reporting of data regarding immunisation; the monitoring and evaluation of the programme; cold chain management; surveillance for adverse events following immunization and laboratory surveillance for vaccine preventable diseases. It was emphasized that it makes poor financial sense to introduce a new expensive vaccine into a dysfunctional system.

There was agreement that Africa should, as a matter of urgency, manufacture vaccines to reduce prices and ensure supply. South Africa's Biovac Institute, a public private partnership, started nine years ago, aims to develop and manufacture affordable quality vaccines for the country and potentially the rest of Africa. Its facilities are still under construction and manufacture is only scheduled to start in the next year or two.

Cuba, a country poorer than South Africa and which overcame major punitive sanctions was lauded as an example for the African manufacturers. Cuba is now self-sufficient in vaccine production and also supplies a number of countries in Central and South America, and manufacture meningococcal polysaccharide vaccine for Africa.

African manufacturers were requested to manufacture and evaluate the vaccines needed by Africans, for which there is a "gap" in the market. Candidates include the new TB, malaria, HIV and "neglected tropical disease" vaccines. Latest developments and vaccine pipelines was discussed. The first announcement of the RTS,S malaria vaccine results in infants were presented. The vaccine is safe and although the vaccine efficacy of 30% is low, these results are an encouraging first step.

Africa's political leaders were called to task for denying children access to health and jeopardising the long term economic growth on the continent. Delegates committed themselves, in the Cape Town Declaration of Vaccines 2012, to continually advocate for political will and to hold legislators and parliamentarians accountable for ensuring access to vaccines and functioning immunisation services during this Decade of Vaccines.

The delegates committed themselves to advocate for sustainable financing for vaccines and immunisation programmes, including ring-fenced country budgets and innovative pooled pricing mechanisms to assist countries ineligible for GAVI support to access affordable vaccines.

It was noted consistently throughout that all efforts to improve vaccine access, delivery and coverage will fail dismally without community involvement. Advocacy and communication efforts need to involve caregivers and patients. It is only by translating complex science into the language of those being vaccinated that the benefits and risks of immunisation will truly be understood. The declaration therefore, commits to effective communication and advocacy for immunisation at all levels of the health system as well as with traditional and faith leaders, civil society and non-governmental organisations.

There have been significant successes in rolling out vaccines for older age groups, such as the meningococcal A vaccine but there is insufficient regional emphasis on immunisation programmes targeting adolescents and adults. The declaration emphasizes the need for the timeous introduction at affordable pricing of the Human Papillomavirus Vaccine for adolescents to prevent cervical cancer, the leading cause of cancer in African women.

Prof Tomori's showed the delegates Kevin Carter's controversial 1994 Pulitzer prize-winning photograph of a vulture patiently waiting near a starving child at deaths door as a metaphor for urgency. Prof Tomori's interpretation of the picture: *The African child and the vulture of inequity*. To applause the emotional professor said: "For equity, Africa must get rid of competing interests against the welfare of the people."

Diagnosis of Syphilis: "The Bare Essentials

Though Syphilis is an example of an STI that can be successfully controlled by public health measures due to the availability of a highly sensitive diagnostic test and a highly effective and affordable treatment, it continues to be highly prevalent in many parts of the world and recently, rates of both primary and secondary syphilis have increased warranting renewed attention to the diagnosis and treatment of the disease.

There are three groups of tests that we have available, namely the direct detection of *Treponema pallidum* or microscopic examination, non-treponemal serology which generally are utilized for screening and to assess treatment response, and treponemal serology.

In terms of direct detection of *Treponema pallidum*, this test is sensitive and specific, but it is limited in its use by the availability of lesions. So, one needs to obtain specimens, most commonly in primary and secondary syphilis and from newborns with congenital disease. You need a moist lesion to get a positive direct detection, thus obtaining a good specimen is essential. The big advantage of the direct detection is that it permits an immediate diagnosis.

We know that serology is useful but it can take days or weeks for it to become positive. So if one sees the organism one has the diagnosis. However, a negative dark-field examination does not necessarily exclude the diagnosis of syphilis. Firstly, there could be sampling error. Secondly, if the individual put antibiotic ointment on the lesion, that can interfere with getting a good sample and with seeing the organism.

Direct detection can be by dark-field microscopy, which is very sensitive but is really a dying art. It requires very skilled personnel and a dark-field microscope. Dark-field microscopy at the bedside is largely being replaced by direct fluorescent antibody tests (DFA), which detects and differentiates pathogenic from non-pathogenic treponemes. One of the limitations of dark-field microscopy is that we make the diagnosis by the characteristic mobility and motility of *Treponema*, but we cannot differentiate under a conventional dark-field microscope pathogenic from non-pathogenic treponemes. Using DFA, we can. The test is based on an antigen-antibody reaction, and can be used at extra-genital sites such as oral and rectal lesions. The sensitivity is reported to be 100% if the specimens are fresh. The other advantage of the DFA is that samples can now travel from area of infection to a reference laboratories. With a DFA you can collect a sample in one area far apart, transport it to the laboratory and the laboratory can stain it and give an answer. More recently molecular tests for *Treponema pallidum* like the PCR have become available, but these tests are only available in large centres.

Serology differs by stage of disease because it takes time for IgG and IgM to develop. The conventional syphilis serology tests that are available are non-treponemal and treponemal. For primary syphilis the non-treponemal tests all have sensitivities that are below 90% because most of those tests will measure IgG. By the time you get to secondary syphilis it doesn't matter which non-treponemal test you use, you can't expect that test to be positive. But as the patient develops latent syphilis, whether it is early or late disease, even without treatment, the non-treponemal tests will spontaneously serorevert. In late disease, there is a 25 to 30% chance of having a non-reactive non-treponemal test. And therein lies the huge problem of screening with currently utilized non-treponemal tests only, because you run the risk of missing a significant number of cases of primary syphilis and late disease. The specificity of non-treponemal tests is very good. The two treponemal tests, the fluorescent treponemal antibody absorption tests [FTA-ABS] and the micro hemagglutination for *Treponema pallidum* for primary syphilis are better at picking up infections. These tests perform as well as non-treponemal tests in secondary disease, and they are much better in detecting cases of early, latent, and late latent disease, but they are far from being perfect in helping us confirm the diagnosis. The traditional non-treponemal tests that are available, VDRL [Venereal Disease Research Laboratory] was the first one that came to market followed by the rapid plasma regin [RPR] test and then the unheated serum regain [USR] test and the toluidine red unheated serum test [TRUST]. All of these measure reagin which is an anti-lipidoidal antibody that is directed against specific antigens of the treponemes. It takes one to four weeks for these tests to become positive and that's why they do not perform very well in primary syphilis. However, the advantage is that they are rapid, they are very easy for the labs to perform, and they are relatively inexpensive. The non-treponemal tests are still the only tests that are quantifiable. So these are the tests that can be relied on to help us stage an individual, for an example, if you have a dilution of 1:128, it is highly unlikely to be a case of latent syphilis.

The non-treponemal tests are the only test available also that allow us to judge adequacy of treatment by following decreasing dilutions post therapy. They also are the only available tests that allow us to detect reinfection, again by virtue of the quantitative nature of the serology. Problems include reduced sensitivity in very early and very latent disease and most commonly in secondary syphilis, this pro-zone reaction, which is the overwhelming presence of antibodies which will react with the antigens giving a false negative unless the laboratory dilute the specimen prior to doing the test.

There are a number of new and very exciting treponemal tests that are currently available or still in development such as enzyme immunoassay [EIA] treponemal tests, the line immunoassay [LIA], the rapid point of care tests and the chemiluminescent assay [CLIA].

The EIA is used as a screening test with sensitivity from 94% up to 99%, and specificity of 100%. It performed

well at all stages of infection, but again false positives were seen most commonly in primary syphilis and most commonly in the kits that were not so good at picking up IgM. The advantages of the EIA is that it is easy to perform. The disadvantages are the false negatives. Again one cannot differentiate venereal from non-venereal treponematosis, as the treponemal test will remain positive for life,

The line immunoassays [LIA] for T. pallidum utilize recombinant and synthetic polypeptide antigens. The sensitivity of the LIA is at 100% with a specificity of 99.3, so this certainly, looks like an excellent treponemal test that perhaps one might use for confirmation.

There are also *rapid point-of-care treponemal tests* that have come to the forefront. Again, these utilize recombinant treponemal antibodies. Evaluations have been carried out by the WHO, have been tested in eight laboratories in Africa, Asia, and Eastern Europe, and the Americas, Central America and the U.S. Sensitivity was pretty good, 84.5 to 97.7%, with specificity of 93 to 98%. These tests are very inexpensive. They are extremely simple for individuals who do not have access to laboratory equipment and who do not have a centrifuge. You can use whole blood, serum, or you can utilize plasma with rapid results available in less than 30 minutes. These rapid point-of-care tests also have the advantage of not being prone to the prozone reaction. However, again they cannot differentiate past from present infection, and they are not quantifiable, so one cannot utilize these tests to monitor therapeutic response.

The chemiluminescent test [CLIA] utilizes micro-particles against three recombinant antigens from *T. pallidum*. When compared with the EIA, the TP-PA and the VDRL using sera from untreated cases, It performed very well, with sensitivity of 97.5% in primary syphilis, but 100% for all other stages, secondary, early latent, and late latent with a superb specificity of 99.1%. The test is automated and rapid.

In summary for the serologic tests for syphilis, in the past most laboratories and programs have tended to do is to use a two-step algorithm, first screening with the non-treponemal test like the RPR and following that with a specific treponemal confirmatory test. Many centres are now utilizing the new technology and switching to an algorithm using a rapid screening treponemal test like the enzyme immunoassay (EIA), following this with an acceptable confirmatory test, which would also be a treponemal test and then adding the RPR, which gives quantifiable result to help stage disease and monitor therapy.

Further Reading:

Results of WHO evaluation of rapid syphilis tests http://www.int/std_diagnostics
HIV/AIDS & STI News no.6 July 2004. http:www.istm.ac.uk/dfid/aids/
Syphilis:A Reemerging Infection http://www.aaf.org/afg/2012/0901/p433-s1.html

Travel Health Africa; Past, Present and Future

It was a real privilege to have participated in the recent SASTM conference which took place at the Sandton Convention centre in September 2012.

I was sitting at the back of the lecture hall with a good friend and Professor of Medicine at Wits and I asked him "So Prof are you giving your talk and then running back to lecture at Wits?" to which he replied " The SASTM conference has the most interesting balance of the best of local speakers and the best of international speakers on travel medicine, infectious diseases and other topics. I believe this conference is as good as international conferences I have attended and I most certainly will stay for as long as I can." The Professor's words summed up the SASTM conference.

Representatives from the International Society of Travel Medicine, Fiona Genasi- (President) David Shlim (President elect), Patricia Schlagenhauf and other international speakers, graciously gave of their time to

be at the conference. Our local speakers included Prof Barry Schoub (key-note address), Professors Lucille Blumberg, Karen. Barnes, Barry Jacobson, and Marc Mendelson as well as many other experts in their fields.

The academic programme that included the latest trends and updates on malaria in Africa, Rabies, Yellow Fever, Viral Haemorrhagic diseases, DVTs and travel, romance tourism, a look into the brain of the phobic traveler and other interesting topics. The programme also included the Margaretha Isaacson lecture, which was delivered by David Shlim on understanding the concept of risk in travel medicine.

Here are some take home messages from the conference:
1) There is no such thing as a 'fear of flying'- it's rather the fear of crashing, highjackings, claustrophobia and being out of control and this is what people fear most.

2) South Africa has about 130 snake species of which 12 are considered potentially deadly. There are approximately 50 deaths due to snake bites a year.

3) Women show better antibody development to vaccines than do men.

4) Mefloquine is a relatively safe drug to the fetus when used cautiously for malaria prophylaxis in pregnant woman.

5) The drug of choice for high altitude pulmonary oedema (HAPE) is nifedipine. At present, routine prophylaxis for the prevention of HAPE is not recommended. The PDE 5 inhibitors have been shown to have a role in prevention and treatment of pulmonary oedema at altitude, although this is not first line intervention.

6) Medical evacuation crew working in air ambulance services often are faced with the difficulties of working in confined space with finite medical resources and staffing at hand when compared to hospital settings. Challenges include issues related to the destination, medical diagnosis, confines of space, and border control issues.

7) Twenty-seven diseases are vaccine preventable, however travel surveys point out that there is insufficient risk awareness and knowledge amongst travelers of how to seek adequate advice on vaccination.

8) A three-year retrospective study of 679 expatriates and long-term travelers, who were evacuated by fixed-wing air-ambulance, showed that the commonest medical disease that results in evacuation from Africa is malaria. Patients were mainly evacuated from Angola, DRC and Mozambique. Trauma, surgical, obstetrical and cardiac conditions were other common conditions requiring medical evacuation.

9) Romance tourism: European white woman looking for multiple no-strings- attached sexual encounters with black men whilst on holiday in Africa, dates back to the 1800s. It was most certainly taboo during that era and mostly a curse to all parties involved. The men were often poor and suffered emotionally when deserted by these usually wealthy, middle-aged woman. This practice still continues today.

10) It is most interesting that lake Malawi is in the shape of the Bilharzia parasite (cercaria) – is Mother Nature sending us a warning about swimming in the lake?

11) Diabetics can conquer Mt Kilimanjaro! Pre climb stress tests, foot care education, insulin dosage adjustment, meal considerations are but a few of the multiple issues that need to be addressed.

12) It is fine to have some alcoholic beverages on flights, as this has not been proven to be a cause of DVT- that fact that we are high (at altitude) rather than from the alcohol is what seems to be the causative factor.

Dr Johnathan Klotnick, SASTM Executive Board Member

The year of the virus – old friends and emerging threats

2012 has seen a resurgence of the global threat from viruses. Old 'friends' and emerging infections continue to threaten public health, commonly affecting resource-limited countries with already high burden of infectious diseases.

The Darfur region of Western Sudan is currently facing a **Yellow Fever** epidemic. According to WHO, as of 21st November, 537 confirmed cases including 127 deaths (case fatality 23.6%) have been reported, affecting 30 localities in Central, South, West, North and East Darfur. The Sudanese Government is targeting 2.2 million people for vaccination in Darfur in a 12-day emergency response campaign. Yellow Fever cases have also been detected in Kalma camp in South Dafur, in displaced persons, 3 of whom have died.

Since 2003 and the emergence of the SARS coronavirus, the world has been on alert for its return or the next epidemic threat from these enveloped, single stranded RNA viruses that are widespread in bats, birds, cats, dogs and other mammals. In June 2012, a 60-yr old Saudi man was admitted to hospital in Saudi Arabia with a febrile respiratory illness and multiple segmental, patchy opacities on chest x-ray. Despite broad-spectrum antibiotics, oseltamivir and micafungin the patient deteriorated, requiring mechanical ventilation, with progressive renal impairment. He died 11 days after admission of progressive respiratory and renal failure. Family-wide PCR assays for detection of coronaviruses were positive and when sequenced, identified a novel human coronavirus (**HCoV-EMC** [Erasmus Medical Center])[1]. HCoV-EMC is the 6th coronavirus to infect humans, and the first to belong to the betacoronvavirus family (the 5 others are all alphacoronaviruses). The animal reservoir has yet to be determined, but bats are a likely candidate. The clinical picture has many similarities with the presentation of SARS, including haematological abnormalities, chief amongst which was lymphopenia. No clinical cases were identified in contacts of the deceased patient, but antibody testing was not performed on hospital staff in the original report. In addition to the first reported case, 9 laboratory-confirmed cases of HCoV-EMC have now been reported from, Saudi Arabia [5; 3 fatal], Qatar [2] and Jordan [2-both fatal]. Three of the Saudi cases are epidemiologically linked, occurring in one family living in the same household. However, despite this observation, unlike SARS to which HCoV-EMC is only distantly related, the novel coronavirus does not appear to transmit easily between people.

Filoviruses, **Ebola and Marburg** outbreaks are currently ongoing in separate districts of Uganda. The Marburg outbreak with 20 probable or confirmed cases as of 23rd Nov, has claimed 9 lives and appears to be coming under control in Kabale, Ibanda, Mbarara and Kampala districts. In contrast, the Ebola virus outbreak in the geographically distinct Luwero district of central Uganda continues to claim lives. As of 28 Nov, the Ministry of Health in Uganda has reported 7 cases, 5 of whom have died. Our own, Prof Adriano Duse from Wits University has been seconded by WHO through the Global Outbreak Alert and Response Network (GOARN), to provide support to the response. We wish him luck and look forward to a report of his experiences in the next FIDSSA Quarterly.

Finally, on this, World AIDS day, it is important to remember how stigma continues to act as a barrier to early testing and treatment for **HIV**. Reports from the UK now estimate that 1 in 4 people (~25,000 individuals) infected with HIV do not know they are infected and that health care practitioners at point of contact fail to recognize the opportunity to test people for the virus. As we continue to see late presentation of HIV in our health care institutions in South Africa, the global call for opt-out testing and increased awareness of health care practitioners globally to address the possibility of an HIV diagnosis is never more important. Despite the strides that are being made in treatment, if we do not increase our ability to diagnose early and get patients into HIV care programmes, we will continue to miss the opportunity to prevent infections through early treatment and responsible sex practices.

1. N Engl J Med 2012;367:1814-20

South African Antibiotic Stewardship Programme (SAASP) update

fidssa federation of infectious diseases societies of southern africa

Since SAASP's launch at the inaugural meeting in Gauteng on 11th February 2012, antibiotic stewardship fever has hit South Africa, with heightened awareness, start-up activities in health care institutions that had no formal programmes and development of activities in those that had fledgling or more advanced activities. Best Care Always..... one of SAASPs partners led a meeting in Cape Town in October which brought together over 100 participants in AS activities at private and public institutions to discuss current practice and collaborative projects in the Western Cape.

SAASP's working group met on 30th November in Cape Town to review progress, antimicrobial resistance epidemiology, assess its goals and discuss strategy going forward. A full report of the meeting and outcomes will be circulated to FIDSSA members and posted on the FIDSSA website shortly. Of concern, is the continued rise in MRSA rates, ESBL and Carbapenemase-Resistant Enterobacteriaceae (CRE), MDR-Acinetobacter infections and outbreaks of vancomycin-resistant enterococci (VRE) in Gauteng and Port Elizabeth. Adrian Brink presented data from the Study for the Monitoring of Antimicrobial Resistance Trends (SMART) relating to ESBL-producing pathogens in intra-abdominal infections, showing 7.6% ESBL+ rates in *E. coli* and 41.2% in *K. pneumoniae* with a multi-drug resistance rate (≥3 classes) of 27.9% in *K. pneumoniae*[1]. With colistin often used as the last line of defense, the recent emergence of colistin-resistant OXA-181 in a *K. pneumoniae* in South Africa is particularly worrying[2].

Marc Mendelson and Tom Boyles presented unpublished results of a 6-month intervention study on 2 general medical wards at Groote Schuur Hospital, Cape Town. An antibiotic prescription chart coupled with multidisciplinary antibiotic stewardship ward rounds was introduced, which resulted in an overall reduction in volume of antibiotic use on the wards of 36% with a significant cost reduction. Phased introduction of the intervention is ongoing elsewhere in the hospital, and full results will be presented at the next SAASP meeting open to all participants, which will take place as a pre-conference meeting at FIDSSA 5 in October 2013.

A powerpoint version of the antibiotic prescription chart used in the Groote Schuur Hospital study is freely available on the FIDSSA website in addition to other resources at http://www.fidssa.co.za/A_relatedSites_AStewardship.asp. Please feel free to download it and adapt as you see fit.

Finally, a SAASP logo is currently being developed to help brand the programme. Professor Mendelson's amateurish attempts at graphic design having been rejected by those with as much flair for design as a kumquat, means that we cannot launch the logo in this edition, but watch out for the professional branding launch in March 2013.

[1]Brink et al. Surg Infect 2012;13:1-7. [2]Brink et al. J Clin Microbiol. Published ahead of print 14 Nov 2012, doi:10.1128/JCM.02234-12

Congratulations PROFESSOR Whitelaw

Many congratulations to Andrew Whitelaw, FIDSSA's Secretary-Treasurer, who starts his new job today as Professor of Microbiology at The University of Stellenbosch. Andrew will be sorely missed at Groote Schuur, where he has worked for many years.

Personally, I think it is a drastic move to change jobs just to get away from the FIDSSA President, but then I'm biased.

All the best Andrew!

Global Antibiotic Resistance Partnership in South Africa

The Global Antibiotic Resistance Partnership (GARP) is program that develops policy proposals on antibiotic resistance for low- and middle-income countries. Proposals identify limitations in development, regulation and management of antibiotics and how well countries regulate antibiotic use and resistance. GARP is a project of the Centre for Disease Dynamics, Economics & Policy. The GARP works collaboratively with partner organizations and national working groups in each focus country.

Phase 1 of GARP included work in four countries: India, Kenya, South Africa, and Vietnam. The expertise and capacity developed in these initial four countries is the core of a wider partnership involving other low- and middle-income countries to create greater awareness among national policymakers about the need for policies to control antimicrobial resistance (AMR) as part of a worldwide effort.

Phase 2 of the project is ongoing and includes work in Mozambique and Tanzania.

The South African GARP inaugural meeting was held in February 2010 and the South African chapter was launched, with Professor AG Duse as chair of the SA GARP working group. Shortly afterward, an article by public and private experts in the field entitled 'Situation Analysis: Antibiotic use and resistance in South Africa' was published in the South African Medical Journal (August 2011, Volume 101, No 8 (Part2)) with A. Duse as guest editor, representing GARP SA. Development of resistance is multifactorial process, created by overuse and abuse of antimicrobials. Use of antibiotics in animal feed in the veterinary field is mostly for promoting growth.

Antimicrobial stewardship programs oversee all aspects of appropriate use of antimicrobial agents. By definition, an antimicrobial stewardship program is one that optimizes antibiotic selection, dose, route of administration and duration of therapy to maximize clinical prevention and cure, while limiting emergence of resistance at patient level. Stewardship is a key component in the prevention and control of antimicrobial resistance, as well as infection control interventions. At present, there are numbers of global and local initiatives for containment of antimicrobial resistance similar to the Global Antimicrobial Resistance Partnership in South Africa. One of them, the Federation of Infectious Diseases Societies of Southern Africa has endorsed the SA Antibiotic Stewardship Programme, and they work together.

GARP's eventual goal is to use the best available information to develop workable and effective interventions.

Due to its potentially such enormous impact on public health, GARP's call for action was endorsed by the Minister of Health of South Africa. South Africa therefore commits to the following principles to both conserve and replenish our antibiotic resources:

1. To seek greater coordination among all stakeholders in antibiotic effectiveness, including healthcare personnel, hospital administrators, policymakers, patients, and individuals working in medical centres, universities, and pharmaceutical companies, to promote knowledge sharing and a mutual commitment to improving antibiotic use, a practice referred to as antibiotic stewardship;
2. To work towards optimizing antibiotic use through antibiotic stewardship programs and interventions that help ensure that patients get the right antibiotics at the right time for the right duration;
3. To identify the most effective examples of antimicrobial stewardship and to replicate these strategies and best practices, while also taking into account local context;
4. To support research that deepens our understanding of the current situation and trends in antibiotic resistance and use;

5. To use information about the drivers of antibiotic use to contribute to the evolving definition of 'appropriate antibiotic use', and to use this definition to guide stewardship efforts, including the education of the general public and healthcare personnel at all levels;

6. To improve surveillance for drug-resistant infections and to encourage reporting activities in a way that supports both positive outcomes and accuracy;

7. To encourage the development of pharmaceutical products to combat antibiotic resistance, including new antibiotics or novel therapies, compounds to boost antibiotic effectiveness, diagnostics to better diagnose infections and their resistance characteristics, and vaccines to prevent infections from occurring;

8. To recognize that antibiotic resistance is one of the world's most pressing public health threats and that global collective action is required to effectively address the challenge of managing our scarce supply of effective antibiotics;

9. To acknowledge that the way we use antibiotics today in patients impacts how effective they will be in the future in other patients;

10. To communicate that antibiotic resistance is an infectious disease and public health concern: some resistant bacteria have the potential to spread rapidly from person to person, which increases the threat of resistant infections;

11. To work with regulatory, veterinary and industry partners to promote the judicious use of antibiotics in food animals;

12. To reinforce the judicious use of antibiotics in agriculture by limiting the use of medically-important human antibiotics in food animals, supporting the use of such antibiotics in animals only for those uses that are considered necessary for assuring animal health, and having veterinary oversight for such antibiotics used in animals.

At this stage GARP-SA is approaching its second interventional phase and will organize a second meeting at the beginning of 2013. A number of intervention strategies exist to address the problem of antibiotic resistance in South Africa, such as: (a) to monitor the extent of the problem and trends of AMR with the aim of informing key policy makers and opinion leaders on how to spare the currently fragile antimicrobial agents, i.e. surveillance activities; (b) to reduce the burden of infectious diseases in susceptible populations and, where appropriate, reducing the demand and potential overuse or misuse of antibiotics, i.e. vaccination strategies; and (c) to contain AMR, thus preventing spread of resistance, i.e. infection prevention and control activities.

Olga Perovic

Infection Control Africa Network Feedback

Having just spent the last 3 days at the ICAN meeting (Infection Control Africa Network) at the BMW pavilion at the V&A Waterfront, we thought it would be opportune to use the ICSSA newsletter to share some of the information presented at the meeting. A striking feature of the meeting was the great representation from many African countries, and the large number of international speakers from Africa as well as Europe, North and South America.

Prof David Livermore (well known to many people) gave a keynote address "Rising to the Challenge of Resistant Gram Negatives". He made the point that although VRE and MRSA are often still regarded as problem organisms (with some justification), the lack of new antibiotics effective against Gram negatives makes the current problem of multi- and even pan-drug resistant Gram negative bacilli even more of a concern than MRSA or VRE.

The three approaches to the problem are infection control, antibiotic stewardship (AS), and new antibiotics. Aggressive infection control measures, as illustrated by one report from Israel, can be successful in reducing carbapenem resistant *Enterobacteriaceae* (KPC in that case), but the resources to do this are not always available, and the sustainability of such interventions is a problem. Some new agents are on the horizon – new beta lactamase inhibitors able to inhibit some of the carbapenemases; new aminoglycosides and new tetracycline derivatives.

Gabriel Levy-Hara presented results of a survey done on behalf of the International Society of Chemotherapy (ISC) looking at stewardship practices around the world. Some of the issues picked up from Africa were that >60% of respondents had no AS programme, with 20% in the planning stages. Major barriers to implementing AS progammes were lack of resources (especially ID clinicians), lack of IT support, and prescriber opposition (all challenges we face as well). One other problem which is fortunately less of an issue locally is the availability of antibiotics over the counter in some countries in Africa (as well as other parts of the world). Lack of control in use of antibiotics for veterinary / animal husbandry use was also highlighted by Dr Ndegwa from Kenya CDC.

Prof Tapper (USA) highlighted some of the infection control issues related to carbapenem resistant *Enterobacteriaceae* (CRE). Among these were the question of when to remove contact precautions. Studies have shown the mean duration of carriage to be 144 days, which does make it difficult to justify removing contact precautions in patients known to be colonized. However, when patients are moved to long term care facilities it is often difficult to maintain contact precautions. The compromise proposed was that contact precautions could be discontinued in these patients if the patients were not incontinent, had no chronically draining / discharging wounds, and were not reliant on a health care practitioner for activities of daily living. He also outlined the practice in his hospital of performing chlorhexidine baths on any patients known to be colonised with CRE in an attempt to decolonize them or at least to reduce the bioburden. There is admittedly no evidence behind this practice, and whether it is worth performing (or whether it actually causes more harm!).

An excellent session on healthcare waste management includes talks by Jorge Emmanuel (Geneva), Emrod Elisante (Tanzania) and Ruth Stringer (UK). There is a global drive to either make incinerators more environmentally friendly (which is very expensive), or to use alternative methods of disposing of waste. Some of the low cost alternatives discussed included autoclaves with shredders, biodigestors which produce methane, worm composting (once waste has been autoclaved) and alkalaline hydrolysis (for tissue digestion, but could possibly be used as an alternative to incineration for some chemicals as well). The WHO is revising its manual on the Safe Management of Waste which should be out soon. Other online resources include:
www.gefmedwaste.org (parts still in development)
www.inep.org/ietc - go the “information and resources”, then “publications” and “waste management publications”.
www.who.int/water_sanitation_health/healthcare_waste/en/ - WHO website.

Paul Webber of Webber Training discussed the teleclasses offered by his organization. They arrange for international experts to provide teleclasses on a range of infection prevention and control topics, which are open to anyone (although the time difference may be a problem). However their website offers downloadable audio files as well as pdf versions of the slides – www.webbertraining.com.

The last workshop on the 29th of November was spent on debating the Salzburg Statement-implications for Africa. Rashad Massoud (Director, US AID Health Improvement project, URC) and Babacar Ndoye (Ministry of Health, Senegal) gave feedback on the statement and the way forward.

The Salzburg Statement is a call to action health care interventions that are known to work and save lives, but are not being implemented for every patient every time despite improvements that have been made in health care. Many resource-constrained low and middle-income countries are far from being on track to attain their Millennium Development Goals.

Participants from 33 countries came together on the 22nd-27th of April 2012 to address the critical gap between our knowledge of interventions that improve population health and the care actually provided to patients and to drive the quality improvement and patient safety agenda forward.

They urge international, regional and national stakeholders (governments, health policy leaders, communities, development partners, non-governmental organizations, health care workers and patients), to promote improvement in the quality of health for the world's populations and to assure their health, survival and well-being now and for future generations.

The proposed recommendations can be found at http://www.icanetwork.co.za/docs/the-salzburg-statement_call-for-action

And finally…….

Here endeth the 4th edition of FIDSSA Quarterly, which has now been running for 2 years. I would like to thank all those people who have taken time to contribute to our newsletter and welcome anyone out there who would like to contribute, to do so. Please send any submissions to Lea Lourens at info@fidssa.co.za.

A particular vote of thanks goes to Garth Brink, Mark Cotton, Mark Nicol, Frans Radebe and Andrew Whitelaw who have acted as organizers for SASTM, SASPID, SASCM, STDSSA and ICSSA respectively.

Thanks too, to our administrative guru, Lea Lourens who continues to do an outstanding job for FIDSSA on a daily basis. Your work is much appreciated Lea.

To all FIDSSA members, we wish you a restful, pleasant festive season and look forward to an exciting year in 2013.