

Volume 28, December 2010



Newsletter for The GERMS-SA surveillance network

Introduction

Welcome All to the last edition of the LINK for 2010. And like Shrek's final instalment this LINK serves to be a blockbuster edition!



To start with, 2010 has been a wonderful year with great happenings. The launch of the IPD case-control study, surveillance officers

representing at international and national conferences, NMSU expansion in the form of new medical officers and surveillance officers, as well as new pathogens and of course the first Soccer World Cup on African soil.



I put this FIFA logo in to remind us all that whether directly or indirectly, we all did our bit for surveillance during the World Cup through GERMS and NICD liaising with FIFA.



Like the World Cup though, all good things must come to an end, and this edition sees us bidding farewell to NMSU staff— Dr. Taskeen Khan and Miss Verushka Chetty (SA-FELTP resident) in December. It is also the end of PCP surveillance as we know it. But as we know, when one door closes another opens and so it is, with new beginnings and additions.

We would also like to extend festive greetings and New Year wishes to all our staff and readers and say an ENORMOUS thank you to everyone for the hard work this year. 'Tis the season to be jolly, so go out there and enjoy it with caution of course. Beware food poisoning guys, you do not want to spend the holiday season being a statistic for EDRU.





Site Visit: Limpopo

Dr Vanessa Quan and Dr Claire von Mollendorf did a site visit to Polokwane and Mankweng Hospitals on the 16 November 2010. They presented an overview of the GERMS-SA surveillance programme and IPD* case-control study update at both sites. The talks were attended by both lab and paediatric staff which allowed for discussions around the barriers to taking and processing blood cultures at the sites.

Vanessa and Claire then reviewed the IPD control enrolment process at Mankweng and Polokwane with Sr Maria Mokwena and mapped her daily progress through the paediatric wards. They assessed the process for any sources of bias and advised on completion of study documentation.



Lastly they assessed questionnaire and logs with Maria and Claire dealt with the queries from the questionnaires. It was a productive visit with some follow-up strategies e.g. Maria to assist with ensuring sufficient blood culture bottles are available in the paediatric wards at Polokwane.

* IPD study: A case-control study to estimate effectiveness of a conjugate pneumococcal vaccine against invasive pneumococcal disease in South Africa. This study is evaluating the effect of the pneumococcal vaccine in preventing severe pneumonias and meningitis caused by *Streptococcus pneumoniae*. This vaccine was recently introduced into SA's Expanded Programme on Immunisation to be routinely given to infants at 6 weeks, 14weeks, and 9 months of age. It is hoped that the use of this vaccine will decrease the occurrence of these diseases in our children by 60-80%.

Site visit: Helen Joseph NHLS lab



Vanessa and Nevashan (SA-FELTP resident) visited Helen Joseph lab on 7 December 2010. Vanessa presented on GERMS work, the IPD casecontrol study and candidaemia surveillance, all of which HJH participates in.

Courses

Dr. Susan Meiring and Dr.Claire von Mollendorf recently attended a vaccinology course in November.

<u>Sixth Annual Vaccinology Course in South Africa, 8-12 November 2010</u> Dr Claire von Mollendorf, from the Epidemiology Surveillance Unit, and Dr Susan Meiring, from the National Microbiology Surveillance Unit, were fortunate to be selected to attend this very informative course, held in Newlands, Cape Town.

The course, organized by Vaccine's for Africa Initiative (VACFA), hosted 76 participants from 18 different African countries. It aims to develop vaccinology expertise for Africa and to promote vaccine advocacy amongst health care professionals, scientists and public health policy makers. It dealt with vaccine development, immunology, microbiology, clinical trials, safety, ethics, advocacy, economics, evidence-based medicine and immunization delivery.

Approximately 9000 children die every day from vaccine preventable diseases. This is three times the deaths that occurred from the World Trade Centre attack on September 11. Many of these deaths occur in Africa where the vaccination gap between developed and undeveloped nations is at its greatest. However, it was encouraging to see the efforts for rolling out *H. influenzae* type B, Rotavirus and Pneumococcal Conjugate vaccines in many of Africa's poorest countries through financial and other help from the Global Alliance for Vaccines and Immunisation initiative.

Great work is being done on the vaccine front in Africa, with lots of promising research studies on vaccine development, safety, efficacy, effectiveness and societal uptake of vaccines underway.

It has been shown time and again that immunization is the most cost-effective public health discovery. Prof Greg Hussey, the course organizer, emphasised that "vaccines should not be seen as a cost but rather as an investment - an investment that is at an individual, societal and economic level." Arrows point to Claire and Susan



(Arrows point out Claire and Susan!)

NICD ACADEMIC DAY 2010



Academic day was held at the NICD, Sandringham on the 23rd November 2010. GERMS-SA was well represented with presentations from the various units as well as posters being exhibited.

Our very own Sr Zodwa Kgaphola (surveillance officer at Charlotte Maxeke Johannesburg Academic Hospital) also gave a delightful presentation. Below is a short account of her experience at the Academic Day as well as a summary of the presentation she gave.

Although I attended the Academic Day briefly it proved to be an eye opening experience which provided an opportunity to touch base with every facet of the company, to share in the recent research studies and provide interesting feedback from the various departments.



This was the first time I attended an event of this nature and, it certainly created a learning platform that would serve anybody well to attend in future.

Sr Zodwa gave a presentation on "Awareness of HIV status amongst hospitalised, South African adults with incident cryptococcosis". The study was also presented as an E-poster at the XVIII International AIDS Conference, Vienna, 2010.

The study was conducted at 6 large, South African, public sector hospitals between 1 January and 31 December 2008.

The following were conclusions:

- Almost a quarter (133/548) of hospitalised patients did not know their HIV status on admission with incident cryptococcosis, an AIDS-defining infection
- 7 of 12 (58%) , previously tested, HIV-negative patients were found to be HIV-positive during hospitalisation for cryptococcal disease
- Only 111 of 415 (27%), previously tested, HIV-infected patients had been started on antiretroviral treatment at the time of diagnosis with cryptococcosis

Recommendations:

- Even with a substantial drive for HIV testing and a large antiretroviral treatment programme in place, too few people know their status
- South Africans should be encouraged to be tested for HIV infection regularly and at every health-care visit the hospital-based testing programme must be scaled up
- HIV-infected South Africans should be encouraged to access antiretroviral treatment well before the development of AIDS-defining infections such as cryptococcosis

The experience of having one of our surveillance officer's presenting at the Academic Day was an absolutely fulfilling one. We, who witnessed the presentation, are extremely proud of Zodwa and we hope that this will be just the beginning. We encourage all surveillance officers to be thinking along these lines and looking at possibilities at their own sites to conduct small studies of their own. Perhaps you can look at some of the GERMS organisms at your specific hospitals and do some data analysis. This will be particularly nice for those of you who have attended the FELTP short courses this year.

Profiling GERMS-SA surveillance officers

Mr Vusi Ndlovu

Vusi Ndlovu has been working with GERMS-SA since 1August 2010. He is currently based at Dr George Mukhari Hospital – Medunsa in Pretoria. Besides nursing, Vusi previously worked at a private laboratory in Gauteng. He did a lot of phlebotomy and general laboratory work there. Surveillance was therefore a new setting for Vusi to explore.

A definite highlight of his surveillance duties now includes the reviewing of medical records as this improves interaction with the medical team. Furthermore it stimulates more discussion as Vusi and the team at DGM share ideas around case findings/outcomes.



As with everything though, there are challenges and irritations with the job. In particular a major challenge for Vusi has been the ability to find patient files. These files are sometimes misplaced, incomplete files, as well as containing incorrect patients' information. The staff at DGM continue to be a good motivating factor for Vusi, as they assist him in any way they can. Vusi also enjoys primary health care.

Vusi has the following to say: "IPD is an interesting study that needs a person's attention to detail, so it is always good to consult or get other people's ideas if one doesn't understand anything because in the end this will help our country manage more epidemic diseases."

<u>Sr Ophthia Kaoho</u>

Ophthia (pronounced Offtia- "get it right people") started with GERMS mid -July in a temporary capacity at Kalafong hospital assisting with IPD at the site as well as helping Sr Sylvia Nkomo at Steve Biko Pretoria Academic Hospital (SBPAH) and Tshwane District Hospital. She is now in full capacity since October as the SO for Kalafong – IPD as well as assisting with GERMS and IPD at SBPAH and Tshwane.

Sr Ophthia has been in nursing for the past 28 years. In her most recent years, she has been working at Casualty. It was a very busy department but having been there helped when she started surveillance as she had already established rapport with the staff at Steve Biko Hospital as well as

Kalafong. She initially saw surveillance as a challenge but loves the fact that counselling is the order of the day!

With the recent IPD study, HIV status and vaccination histories have both been a challenge as well as patients refusing to test for HIV. However to date, she has managed to go far and beyond both literally and figuratively (as we all heard at the recent SO meeting) to secure details. Ophthia enjoys her new job very much, it's an entirely different field from what she has been used to and learns daily. It exposes her to different people and personalities and she really enjoys it!



Getting up close and personal with new staff

Mr Jabulani Ncayiyana

Our new epidemiologist and data manager, Mr Jabulani Ncayiyana started with GERMS-SA on September 1st.

Jabulani Ncayiyana works in the National Microbiology Surveillance Unit (NMSU) of the National Institute for Communicable Diseases (NICD). He is responsible for managing and maintaining the GERMS-SA databases, contributing to the development and maintenance of standard operating procedures, supervising the data—capturing team, creating and producing reports, and providing in-service training to data entry staff.



He has completed his MSc in Epidemiology and Biostatistics at the University of Witwatersrand. As a result of his MSc research on TB, he was awarded a

fellowship by Fogarty International Institute (FIC) through South African TB and AIDS Research Training (SATBAT) to do TB research training at Johns Hopkins University Centre for Tuberculosis Research in June/July 2010.

He has more than five years experience in public health research, data management, and disease surveillance. Mr Ncayiyana has a special interest in infectious disease epidemiology.

Ms Ashika Singh

The Antimicrobial Resistance Reference Unit (AMRRU) was introduced by Dr Olga Perovic in the last edition of the LINK. Here's a little more on the molecular aspects of the unit. The AMRRU Molecular Biology laboratory was introduced in 2010. The molecular biology laboratory is being set up by a medical scientist who began working in the unit in June 2010. She is also responsible for performing all research components of this study. Dr Ashika Singh has a PhD in Medicine from the University of Kwa-Zulu Natal, Nelson R. Mandela School of Medicine. Her previous work focused on HIV pathogenesis and antiretroviral drug resistance at the HIV Pathogenesis Programme (HPP), UKZN.



Molecular biology is the study of biology at a molecular level and chiefly concerns

itself with understanding the interactions between the various systems of a cell, including the interactions between DNA, RNA and protein biosynthesis as well as learning how these interactions are regulated. The primary goal of molecular biology is to understand biological processes at the molecular level, with the ultimate aim of using this knowledge to tackle specific problems in human health and disease. The main focus of this laboratory at the moment is to identify antimicrobial resistance genes from within the population being studied and to characterize the mechanisms of resistance displayed by the pathogens using molecular techniques. These techniques will assist in determining the prevalence and pattern of specific antimicrobial resistance genes.

Messages from the units

Enteric Diseases Reference unit (EDRU)

2010, a year most South Africans will proudly reflect and talk about in years to come for being the proud nation for hosting the 2010 FIFA World Cup Soccer.

EDRU was integral in outbreaks that occurred before, during and after the World Cup and continue supporting outbreaks that occur in the country. Reflecting on our unit, surveillance for enteric pathogens was first introduced in 2003 and we started the unit with two laboratory staff members and a pathologist, Dr Karen Keddy. Today we have a staff of 15 members and are still expanding.

The surveillance of enteric pathogens includes the enhanced surveillance sites (where pathogens cultured from sterile sites of the body have clinical information to accompany the isolate) and nonenhanced sites (pathogens from non-sterile sites). The pathogens that have been included on our database include; *Salmonella, Shigella*, diarrhoeagenic *E. coli* and *Vibrio cholerae* O1 and non-O1. The results of the extended serotyping of the pathogens, including molecular characterisation are entered on Disa* Lab as well as MS Access. The MS Access database is used mainly for data analysis and to generate quarterly reports which are sent to participating laboratories and should be made available to all staff. Data are also generated on a regular basis to notify the Department of Health with regards to reporting of *Salmonella* Typhi, *Shigella dysenteriae* serotype 1, *E. coli* O157:H7 and *Vibrio cholerae* O1. *Salmonella* Typhi is monitored on a daily basis through the NHLS laboratories reporting on Disa*Lab and notification to EDRU is send via the Central Data Warehouse. All *Salmonella* Typhi isolates are reconfirmed by serotyping and a molecular technique referred to as Pulsed Field *Gel* Electrophoresis (PFGE) is carried out for strain relatedness and to ascertain if the isolate has been locally acquired or if the strain had been imported (illness acquired outside of South Africa).

This year we also hosted the first PulseNet Africa meeting (please refer to previous Link, Vol 27 for further information). This has all been made possible with the help of administration staff, microbiology technicians, technologists, laboratory managers, head of units, surveillance officers, medical officers and pathologists. Therefore a heartfelt thanks for your support over the years.



Respiratory and Meningeal Pathogens Reference Unit (RMPRU) Best wishes for the festive season!

From the staff at RMPRU

RMPRU would like to thank each and everyone out there who have so willingly supported our surveillance efforts in the last year.

Of the approximately 4300 cases reported to us so far this year, we have over 3000 viable isolates. We have also enrolled 146 cases into our Invasive Pneumococcal Disease Case-Control Study* to date, and most of these cases have viable isolates.

Your input is extremely valuable and we look forward to your continued support!

We would like to extend our best wishes to you all over the festive season and we wish you all a Happy New year!



RMPRU staff working with national surveillance isolates. (L to R, back) Happy Skosana, Ruth Mpembe; (front) Olga Hattingh, Mmabatho Moerane, Victoria Magomani, Maimuna Carrim.

* IPD study: A case-control study to estimate effectiveness of a conjugate pneumococcal vaccine against invasive pneumococcal disease in South Africa. This study is evaluating the effect of the pneumococcal vaccine in preventing severe pneumonias and meningitis caused by *Streptococcus pneumoniae*. This vaccine was recently introduced into SA's Expanded Programme on Immunisation to be routinely given to infants at 6 weeks, 14weeks, and 9 months of age. It is hoped that the use of this vaccine will decrease the occurrence of these diseases in our children by 60-80%.

Parasitology Reference Unit (PRU)

Goodbye PCP!!!

Since 2006, laboratory-based surveillance for PCP has been conducted by GERMS-SA. The main aims with this project were to estimate the burden of laboratory-confirmed *Pneumocystis* pneumonia in HIV-infected patients in South Africa and to describe the epidemiology thereof, to document putative markers of resistance to relevant antimicrobials, to explore the molecular epidemiology of the isolates and to accumulate a geographically representative bank of these isolates. PCP diagnosis is not widely available outside major centres in South Africa, and we have put a lot of effort to try and improve laboratory capacity and testing, the aim to have at least one lab in each province that tests for PCP. This was not very successful as most laboratories were reluctant to introduce a test that is not that often requested by clinicians in the hospital, as PCP is mainly diagnosed clinically. Currently PCP surveillance has identified around 270 cases per year, although we know that the burden of disease for PCP should be much higher in South Africa. We are using the isolates collected so far to determine the extent of resistant organisms in our HIV population, and how this relates to outcome for the patient.

During the 2010 Principal Investigator's meeting at NICD, PCP surveillance was one of the projects under review by the Steering Committee. It was decided that this project should be terminated on 31 December 2010. PRU is currently looking into more effective surveillance study projects to estimate the burden of disease and the impact it has on the health of our HIV-positive population in South Africa.

In the past 5 years our Unit has regularly given training to PCP laboratories who needed it, we set up a new site in Kwa-Zulu Natal at Greys' Hospital and have started a Proficiency Testing Scheme for PCP in which all PCP testing laboratories participate. We would like to assure those labs testing for PCP that these services will not be suspended with the termination of GERMS PCP surveillance.

Parasitology would like to take this opportunity to give a heartfelt thank you to all participating laboratory staff, surveillance officers, data clerks and NMSU for all their hard work and dedication during this project. We wish you all well.





For updates on a possible new method of surveying cases for PCP.

Fond Farewells

SOMEWHERE

<u>Dr Taskeen Khan</u>

This serves as a last opportunity for me to say thank you to everyone I have worked with over the past year.

A special thank you to my surveillance officers with whom it has been a pleasure to work with. You guys ROCK! You always listened, met deadlines, informed me of leave and were excellent at teleconferences. I know it was difficult for you to adjust and I can be cranky at times but I hope it wasn't too bad. I will miss you very much.

To all the heads of units, thank you very much for all the guidance and hard work in shaping me up to the person I am today. A special thank you to Dr

Olga Perovic for all your support and assistance in putting me onto the road to the future. Also a special thanks to Ms Arvinda Sooka who has been of much support and encouragement. To my colleagues at NMSU, you are all my friends and so this is really in no way goodbye. It was great working with you all and I will really miss you. Melony, Verushka, Nevashan (pronounced Nee-va-shin—he's too nice to correct you) and Jabu, the office won't be the same.

Which leads me to where I will be going... I have accepted a Public Health registrar-post through Wits at Johannesburg Hospital. So it's definitely not a complete goodbye.

I wish everyone well and look forward to working with you all at some time in the future or at least gathering fond memories when I see your publications.

Miss Verushka Chetty

"Parting is such sweet sorrow"

A famous line from one of Shakespeare's most renowned plays.

As I near the end of my SA-FELTP field placement, I would like to take this opportunity to express my heartfelt gratitude and appreciation to everyone involved with GERMS-SA. Thank you for the advice, guidance and support during my field activities and placement here. The lessons and experience I have gained will hold me in good stead once I enter the great big world out there.



A special mention must go to my supervisors' Drs Nelesh Govender and Vanessa Quan, for their tremendous support, thoughtful advice and training. Supervising a FELTP resident is not easy, and requires loads of patience and understanding. They have done a fantastic job, and I will miss them both dearly. Gugs, Susan, Melony, Taskeen and Nevashan – thank you for the camaraderie and brightening up my day when I needed it the most. My best wishes to everyone for the festive season, and I wish you luck in both professional and personal endeavours. My family here will never be forgotten.



General information for participating laboratories

GERMS-SA 2009 Annual Report—Available in May 2010

Please ask your laboratory managers to circulate this report or pin it to your notice boards. It can also be found on our website: go to www.nicd.ac.za and follow the link to GERMS-SA.

Surveillance organisms and sites

Please submit the following bacterial and fungal pathogens to the National Institute for Communicable Diseases (NICD) on Dorset Transport Media with a completed sterile site isolate form or stool isolate form. Specimens (or slides) positive for PCP may be submitted with the PCP specimen form (until 31 Dec 2010).

Pathogen	Specimen	Lab tests	NICD Unit
Streptococcus pneumoniae Haemophilus spp. Neisseria meningitidis	All normally sterile site specimens, e.g. CSF, blood, pleural fluid, peritoneal fluid, pericardial fluid, joint fluid, tissue, etc.	Culture positive OR latex antigen test positive	RMPRU
Salmonella spp. (including Salmonella Typhi) Shigella spp.	Any specimen	Culture positive	EDRU
Diarrhoeagenic E. coli Vibrio cholerae	Gastrointestinal specimens, e.g. stools, rectal swabs, etc.	Culture positive	EDRU
Cryptococcus spp.*	Any specimen	Culture positive OR Latex positive OR India ink positive	MRU
Pneumocystis jirovecii	Respiratory tract specimens, e.g. sputum, bronchoalveolar lavage fluid, etc.	IFA positive	PRU
Staphylococcus aureus Klebsiella spp.**	Blood culture only	Culture positive	AMRRU

*Only enhanced surveillance sites, private labs and NHLS-KZN labs should submit cryptococcal cases and isolates.

**Only for the following labs: Chris Hani Baragwanath, Charlotte Maxeke Johannesburg Academic, Greys', Groote Schuur, Helen Joseph, Steve Biko Pretoria Academic, Tygerberg, Universitas, KEH, Addington.

This newsletter was compiled by Taskeen Khan and edited by Vanessa Quan, National Microbiology Surveillance Unit. Please send any queries, recommendations or contributions to Melony Fortuin-de Smidt melonys@nicd.ac.za or Vanessa Quan vanessag@nicd.ac.za Tel (011) 386 6234.