

Good old Hump Time is here again! We are half way through the work year, and feeling motivated to continue towards our team goals and objectives. Check out what has been keeping us ticking this year in our second quarter newsletter.

Our site visits and introduction of new GERMS-SA staff are covered on pages 2-4.

Mobile phone data collection Information system (GEDI), has now been phased out in all provinces. As of the 1st June 2014 all GERMS-SA organisms are captured on GEDI except TB for now. The transition has been smooth moving from our old traditional paper case report forms into electronic surveillance. Update is on page 5.

The Royal Institute for Tropical Diseases (KIT) in Amsterdam hosted the 9th International Conference on *Cryptococcus* and Cryptococcosis (ICCC-9) from 15 to 19 May 2014 (pages 6-7).

Welcome to our GERMS-SA babies on page 7. COTHI update on Antimicrobial Resistance and Surveillance Officer clinical training report is covered on pages 8-9.

Enhanced surveillance site operations report summary—fourth quarter 2013 covered on page 10.

The last page includes a table of the surveillance organisms and case definitions for the laboratories. Our annual GERMS-SA Report is available on the website http://www.nicd.ac.za

.....Sonwabo Lindani

This newsletter was compiled by Sonwabo Lindani, and edited by Vanessa Quan, Division of Public Health Surveillance and Response. Please send any queries, recommendations or contributions to: Dr Vanessa Quan <u>vanessaq@nicd.ac.za</u>; Tel 011 386 6012

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GERMS-SA Site visits across the country

Sonwabo Lindani

GERMS-SA and COTHI visited Bongani laboratory in Welkom on the 23-24 June 2014. Sonwabo gave a GERMS presentation and Dr Charlotte gave a *Cryptococcus* screening presentation. Dr Nelesh demonstrated to the CD4 laboratory technologist on how to do lateral flow assay (LFA). On the 24th Dr Nelesh led a presentation and discussion with the stakeholders from Free State Department of Health on the enrolment on the *Cryptococcus* screening project within the province. He later gave a presentation to the hospital clinicians and nurses and explained their role within the screening programme and management of patients.

The field project coordinators (Sonwabo Lindani, Mmakgomo Rakhudu and Cecilia Miller have been doing routine audits of the surveillance officers to check and improve data quality of the case report forms.



The laboratory staff led by manager Lilly Moabi together with Dr Nelesh Govender, Ms Nireshini Naidoo, Ms Andronica Rakgantso at Bongani NHLS Laboratory

Dr Nelesh Govender demonstrating the CrAg test to the CD4 laboratory staff





Mmakgomo Rakhudu with Thandi Ngema, Nthabiseng Motati, Rachel Nare, Hazel Mzolo and Molly Morapeli at C.H.Baragwanath Academic Hospital after the CRF audits

Newsletter for the GERMS-SA Surveillance Network

Site visit continues ...

NEW STAFF

Profile of Thandeka Kosana (Project nurse at Universitas/Pelonomi, FS) **Tell me a little about yourself:**

I am a new surveillance officer, I work at Universitas and Pelonomi Hospitals in Free State, I started working on the 1st of May 2014. I previously worked at Pathcare Laboratory as a phlebotomist.

What made you decide to take up this position?

I wanted to do something different than what I was doing, and spend more time with the patients.

What is it like thus far?

I enjoy doing interviews with my patients, guardians, or relatives and getting to know my patients better and also making a difference in their health and lives.





Profile of Oliver Murangandi (GERMS data manager)

I joined NICD, Division of Public Health Surveillance and Response on 1st May 2014. That makes me 2 months old with the organisation, still a toddler. I have learnt a lot of laboratory processes as GERMS-SA data manager. Before joining NICD, I worked for Aurum Institute as data manager for just over 2 years from March 2012 to April 2014 and Right to Care – Health Services as data manager for 6 months. Before joining Aurum I worked for different organisations, in Zimbabwe, Botswana and South Africa. I worked in Zimbabwe as a High School Computer Science and Mathematics teacher and also as IT lecturer at a polytechnic. In Botswana I worked as Business Intelligence (BI) Consultant for a Diamond Mine. I came to South Africa in 2008. I am married to Pelagia and

we have a 5 year old son, Emmanuel.

Profile Sydney Mogokotleng (data clerk for Mycology Reference La-

boratory)

I am originally from small village called Kraaipan which is in Mahikeng in the North West province and I am now a resident in Johannesburg. I work for the National microbiology surveillance unit (NMSU) under the mycology reference laboratory. I was previously employed in the TB Lab at the NICD.

This job has given me the opportunity to grow in character in the way I now interact with different people and learning more about their backgrounds, and also more about clinical research and surveillance. It is a great pleasure to work with group of people that are driven in this work organization and I am happy to be part of GERMS-SA.



New staff introduction continues...

NEW STAFF continued

Profile of Portia Mutevedzi (GERMS provincial epidemiologist for KZN)

Who am I?

I am Portia a mother of two girls who likes reading, cooking and spending time with family.

Educational qualifications:

PhD in Epidemiology and Population Health, University College London, United Kingdom MSc (Medicine): Epidemiology and Biostatistics, University of Witwatersrand, South Africa BSc (Honours) Biological Sciences, University of Zimbabwe, Zimbabwe

Research Specialisation

Epidemiology, Biostatistics, Population Health, Public Health, Ageing and HIV, HIV/TB and ART

My past:

Prior to joining the NICD, for the past 10 years I was with the Africa Centre for Health and Population Studies. In line with my PhD studies, I developed an interest in the

ageing of the HIV positive cohort specifically looking at the epidemiology of HIV in older adults aged 50 years and above and as such I developed and established a research portfolio looking at the effects of HIV on this population and the impact of access to ART. This work involved two ongoing research cohorts, one within a large demographic surveillance area comprising HIV negative and positive individuals and the other nested within the ART programme.

My future:

I joined the NICD on the 1st of May 2014 as the Provincial Field Epidemiologist for KwaZulu-Natal. My main role, integral to NICD's functions, is to ensure that NICD's core epidemiology services of surveillance, outbreak response, specialist microbiology and public health research are available to the Provincial Department of Health in a timely manner in order to inform public health action of a consistently high quality. The objectives of my post as provincial epidemiologist can be broadly described within these functional areas - infectious disease surveillance; supervision of NICD surveillance sites; outbreak support; epidemiological research; training and skill development and Public Health intelligence.

We welcome our dynamic new staff ; good to have you all on board.



GERMS-SA Electronic Data collection Information system (GEDI) Update—Creativity Strikes Back

Nevashan Govender

In the world of disease surveillance opportunity for inventiveness occurs outside the 95% confidence interval. It's an acceptable chance occurrence that needs to be seized. That remaining 5% presents the opportunity to be different, stand out and make waves, as opposed to be being part of the old, greying normal distribution. The GERMS-SA electronic data-collection information system (GEDI) has been operational since August 2013. The idea behind the system was to create a resource efficient manner in which enhanced clinical data could be collected. Over the years GERMS-SA's enhanced surveillance arm has evolved into a powerful tool for public health. However, this evolution came at the cost of increasing surveillance officer administration, increased site requirements such as access to email, scan and fax facilities, and reliance on external courier services. GEDI has decreased the reliance on the majority of the abovementioned resources as it is a mobile cellular phone based application. Having started this new phase of data collection with just Cryptococcus and Staphylococcus aureus case being reported, we have had just under 2000 CRF submissions – surveillance officers can submit partially collect information that can be checked prior to CRF finalisation - resulting in around 750 final completed CRFs. Turnaround times from CRF start to finalisation has decrease from an average of 48 days to 16 days and feedback from surveillance officers has been largely positive as they suggest that they would never want to go back to paper-based data collection. We have had our challenges and these have really been around learning how to deal with something that comes out of that exciting 5% area; the mind-shift in some instances is still in second gear. Nonetheless, we've completed the national roll-out of GEDI devices and as of the 1st June we've started collecting CRF data for all other GERMS-SA enhanced surveillance organisms. The next phase of GEDI will see the Rifampicin-resistant TB and the new GERMS-SA project, clinic-based surveillance; also have their respective CRFs on GEDI. This is an encouraging development as unlike a paper-based data collection system, GEDI through its service-provider has an easy to access Help Centre that will allow all new participants to learn and explore the system's functionality at their own pace and embrace the 5%.



Klerksdorp/Tshepong surveillance officers Joyce Tsotsotso, Louisa Phalane and Bekiwe Ncwana completing training scenarios on the mobile phones

COTHI-MRU: Update from 9th International Conference on *Cryptococcus* and Cryptococcosis

Dr Nelesh Govender

The Royal Institute for Tropical Diseases (KIT) in Amsterdam hosted the 9th International Conference on *Cryptococcus* and Cryptococcosis (ICCC-9) from 15 to 19 May 2014. Dr Nelesh Govender (invited speaker) and Dr Charlotte Sriruttan attended the conference, which attracted approximately 250 clinicians, epidemiologists and basic scientists from resource-limited and resource-rich countries. New trends in clinical disease management, antifungal treatment strategies, prevention and control of disease, immunology, pathophysiology and molecular biology, were presented. All sessions were held as plenaries. Short master classes on genomics and clinical management were held immediately after the formal close of the conference.

Public health highlights: Revised estimates of global burden of HIV-associated cryptococcal meningitis were presented based on newer data on cryptococcal antigenaemia prevalence and the impact of ART programmes. The earlier published estimate for sub-Saharan Africa of 720 000 cases per annum was revised downwards to 205 000 cases per annum, with a global estimate of 300 000 cases per annum. South Africa's burden of disease was estimated as the second highest in Africa (25 000 cases per annum) following Nigeria (56 000 cases per annum).The estimated case fatality ratio remained 70% at 90 days post-diagnosis. Cryptococcal screen-and-treat remains an attractive strategy that is now being implemented in 12 countries globally with South Africa leading the way. Dr Govender presented that approximately 16 000 persons with a CD4+ T-cell count <100 were reflexively screened for cryptococcal antigenaemia in the Gauteng phase 1 programme with 5% being CrAg-positive (up to 30 April 2014). Preliminary data from the ORCAS trial in Uganda (a stepped wedge randomised cluster trial looking at effectiveness of screen-and-treat) showing that the intervention was associated with a survival benefit.

Clinical research highlights: Five multicentre randomised control trials are currently underway to look at shorter, cheaper, less toxic and more efficacious regimens. These include the phase III ACTA trial (including arms with shorter courses of conventional amphotericin B and combination oral fluconazole and flucytosine regimens) the phase II AMBITION trial (short-course liposomal amphotericin B), a phase II ACTG trial (fluconazole dose escalation), the ORCAS trial (shorter course fluconazole for antigenaemia) and a smaller phase 2 trial looking at sertraline. Access to essential medicines and diagnostics was also discussed at the meeting. There is a great deal of interest in the underpinning of cryptococcal disease among non-HIV, non-transplant patients (a very-difficult-to-manage entity).

Basic science highlights: With the cost spiralling down to \$300 per genome, there has been a shift towards whole genome sequencing to explore the molecular epidemiology of *Cryptococcus*. There is also a great deal of work at the host-pathogen interface including the pathophysiology, mechanisms and clinical management of IRIS.

ICCC-9 highlighted the significant progress made across all spheres of cryptococcal research and this can only translate into benefits for patients at risk of this devastating fungal disease.

Newsletter for the GERMS-SA Surveillance Network



Dr Nelesh Govender and colleagues in the 9th International Conference on Cryptococcus and Cryptococcosis, Amsterdam

Welcome GERMS-SA babies

Sonwabo Lindani

Babies are most beautiful gifts, it is my pleasure to introduce you to our precious little angels, to cherish and love.



Matsheko Siyaka, who is the GERMS surveillance officer in Kimberley, welcomes baby boy Zuko! Congratulations on the safe arrival of your newest family member!! May you cherish this special time and may it be filled with lots of joyous memories. All the best.



News on the Surveillance for Antimicrobial Resistance

Prof Olga Perovic

Antimicrobial Resistance Reference Laboratory (AMRRL) from Centre for Opportunistic, Tropical and Hospital Infections (COTHI) is running laboratory and enhanced surveillance programs for nosocomial pathogens, ESKAPE group (*Enterococcus faecium, Staphylococcus aureus, Klebsiella pneumoniae, Acinetobacter baumannii, Pseudomonas aeruginosa*, and *Enterobacter* species).

AMRRL uses reference minimum inhibitory concentration (MIC) methodologies, automated MicroScan[®] panels for Gram positive and negative organisms and or newly introduced Sensititre[®] Trek Diagnostic Systems (figure). AMRRL follows Clinical Laboratory Standards Institute (CLSI) guidelines for Antimicrobial Susceptibility Testing for interpretation of MIC results. Under revision by National Antimicrobial Committee (NAC) of South African Society of Clinical Microbiology (SASCM) is implementation of The European Committee on Antimicrobial Susceptibility Testing – EUCAST in South African public and private laboratories.

Both standards are recommended by WHO Advisory Group on Integrated Surveillance of Antimicrobial Resistance. EUCAST, under the support of the European Society of Clinical Microbiology and Infectious Diseases (ESCMID) and the European Centre for Disease Prevention and Control (ECDC) is a network of established experts in the determination of antimicrobial breakpoints and in antimicrobial susceptibility testing. EUCAST reviews and revises clinical breakpoints and epidemiological cut-off values for surveillance of antimicrobial resistance in close collaboration with the European Medicines Agency (EMA) and ECDC. AMRRL is looking forward for recommendation from NAC, South Africa on advice should we adjust to EUCAST and how to implement changes.



Gloria Molaba from AMRRL performing Sensititre MIC testing

Surveillance Officers CrAg Clinical Training Report

Centre for Opportunistic, Tropical and Hospital Infections, MRL

The South African Cryptococcal Screening Programme Team held a two day (15-16 April 2014) clinical training meeting attended by all surveillances officers (SOs) and NICD core programme staff. The purpose of the training was to improve programme knowledge and data quality. The main objectives were to optimise quality of monitoring and evaluation data, develop competency in completion and filing of the newly introduced DataFax system collection tools, and to build a good project team. The specific objectives for the first day of the training was to improve the functioning of the screening program and to ensure that the data collected is of high quality and able to provide relevant information .

All attendees participated in a case study aimed to improved data collection by assessing ability of staff to complete the patient information on the case report form (CRF) from different data sources. A practical session on DataFax was conducted to assist SOs to set-up DataFax on their laptops and to familiarise themselves with the functions and procedures of data collection and capturing using the system.

The second day of the training focused on the GERMS and cryptococcal screening programme performance targets and the management of data. A practical demonstration of testing procedures for screening and diagnosis of cryptococcal disease was conducted in the Mycology Reference laboratory .Training also included basic MS-excel and MS-outlook usage to improve performance and communications between SOs and the core team at NICD.

Training evaluation was conducted to assess whether the training achieved its objectives. The responses from attendees indicated there was improved understanding of the importance of the data collected for cryptococcal meningitis screening and treatment in South Africa, the importance of quality of data and the use and functionalities of DataFax for data capturing.

The evaluation assisted the core team to identify areas where improvement is still needed for the programme to achieve its main purpose.



Mycology Reference laboratory staff led by Dr Nelesh Govender at the Surveillance Officer clinical training held at NICD.

	JANUARY TC	DECEMBE	ER 2012*					JANUARY TO	DECEMBE	ER 2013	
Lab confirmed cases**	# CRFs completed	% CRFs	# Interview	% Interview	Province	ES Site	Lab confirmed	# CRFs completed	% CRFs	# Interview	% Interview
100		00	5	90	ŝ	11110	cases**	LUT	00	101	ŕ
168	140	8	35	69	Ъ	NMAC	189	16/	88	121	77
155	123	62	103	25	FS	Universitas/ Pelonomi	117	105	06	83	62
920	705	11	419	83	GA	CHBH	957	894	93	581	85
513	445	87	314	71	GA	CMJAH	693	661	95	563	85
215	182	85	152	84	GA	NGM	294	281	96	246	88
194	137	71	127	93	GA	HJH/ RMMCH	309	298	96	245	82
208	180	28	169	94	ЧЭ	HVBS	300	283	54	242	98
153	116	76	88	53	ĸ	Addington	178	162	91	120	74
365	349	96	286	82	R	Greys/ Eden/ North	381	370	26	332	8
117	78	29	S.	71	Ŋ	KEH	148	131	68	101	11
208	188	6	165	8	ĸ	RK Khan	194	184	95	165	8
82	11	8	20	26	dЛ	Polokwane/ Mankweng	72	33	88	60	8
217	191	88	146	76	МР	Rob/ Themba	241	211	88	164	78
127	86	11	72	73	NC	Kimberley	126	123	86	66	8
100	88	98	73	85	MN	Job Tabane (Rustenburg) [#]	30	21	20	15	11
					MN	Klerksdorp/Tshepong [¥]	112	6	80	<mark>2</mark> 9	99
340	307	06	237	11	WC	GSH/ RXH/ Victoria	350	322	92	251	78
150	131	28	<u>99</u>	50	DM	Tygerberg	6/1	170	96	122	72
4232	3527	83	2617	74	SA	TOTAL	4870	4536	93	3569	79
 Based on summary 	y ESSOR Q4 2012										
" Cases include the	following organism	ns: S. pneumon	iae; H. influenza	ie, N. meningiõd	is, Salmonella s	pp, Shigella spp, Cryptococcus, Ca	ndida spp and S. a	ureus			
Surveillance ended	30 March 2013		¥ Surveillance s	tarted 1 July 201	8						

Enhanced Surveillance Site Operational Report—summary for 2012 and 2013

> The overall % of completed CRFs increased and % of interviews conducted increased - reaching both targets! Well done especially to CHBH, Addington and Tygerberg on reaching both targets.

> Compared to 2012, the total number of cases increased. This was largely due to the addition of S. aureus surveillance at certain sites

Target not met

Target met

> All sites reached the interview target. Only 6 of 18 sites did not reach the target of CRF completion.

Targets: 200% for CRFs completed; 200% for CRFs completed on interview

> Well done to all sites - the completed CRF % may be a reflection on the ESSOR being done a month later than in Q4 2012 giving the surveillance officers more time to get their CRFs entered.

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General Information for Surveillance Laboratories

As part of **NICD National Surveillance** please submit the following bacterial and fungal pathogens to the National Institute for Communicable Diseases (NICD) on Dorset transport media with a laboratory working card /copy of LIS report.

Pathogen	Specimen	Lab tests	NICD Unit
Streptococcus pneumoniae Haemophilus spp. Neisseria meningitidis	All normally-sterile sites specimens, e.g. CSF, fluid, joint fluid, tissue, etc.	Culture positive OR Consistent Gram stain OR Latex positive	CRDM
<i>Salmonella</i> Typhi	Any specimen	Culture positive	CED
Vibrio cholerae	Gastrointestinal specimens, e.g. stools, rectal swabs, etc.	Culture positive	CED
†Candida spp	Blood culture only	Culture positive	COTHI-MRL
*Staphylococcus aureus	Blood culture only	Culture positive	COTHI- AMMRL
**Pseudomonas aeruginosa	Blood culture only	Culture positive	COTHI- AMMRL
Cryptococcus species	Just a lab form as an alert from the private labs	Culture positive Latex positive India ink positive	COTHI-MRL

⁺ Mthatha, Pelonomi/Universitas, Dr George Mukhari, RK Khan, Addington, KEH, Edendale, Greys', Northdale, Polokwane/Mankweng, Rob Ferreira, Themba, Kimberley, Tshepong.

* Charlotte Maxeke Johannesburg Academic, Steve Biko Pretoria Academic, Helen Joseph , Groote Schuur, Tygerberg

**Universitas, Chris Hani Baragwanath, Charlotte Maxeke Johannesburg Academic, Dr George Mukhari, Helen Joseph, Steve Biko Pretoria Academic, Tygerberg, Groote Schuur, Northdale, Inkosi Albert Luthuli, KEH, Mahatma Ghandi Memorial.

Should your laboratory suspect an OUTBREAK of *Shigella* spp, non-typhoidal *Salmonella* or diarrhoeagenic *E. coli*, please contact and submit isolates to the Centre for Enteric Diseases (011 555 0333/4). Please also call the NICD Outbreak Response Unit to alert them 011 555 0392/0542 or (011) 386 6354

To order a new batch of Dorset transport media contact CRDM on 011 555 0315 For other surveillance questions , please call NMSU on Telephone: 011 386 6234