

## First Quarter

It is unbelievable that the first quarter of the year is already over and GERMS-SA continues to buzz with changes and activities.

We had new staff starting in Cape Town and GERMS epidemiologists for Mpumalanga and Free State provinces (Pages 2-3).

The beginning of the year saw changes in its surveillance with some sites introducing new organisms and others saying goodbye to them, e.g *Cryptococcus* enhanced surveillance is only done every first quarter of the year instead of the whole year. A new *Cyptococcus* project will be starting in May 2015 at selected Gauteng sites (page 7).

The Invasive Pneumococcal Disease case control study came to an end on 31 March 2015 (page 4).

The last page includes a table of the surveillance organisms and sites for the laboratories.

Thank you for you continued contributions and support of GERMS-SA surveillance. Keep watching this space for our annual 2014 GERMS-SA Report which will be distributed very soon. Our website remains <u>http://www.nicd.ac.za</u>. We have IPD graphs posted on the same website (page 4).

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

Sonwabo Lindani

## **GERMS-SA** Meet our new Colleagues

#### Raphaela Itzikowitz

I am a medical officer employed by the Centre for Respiratory Diseases and Meningitis, a branch of the National Institute for Communicable Diseases. I have worked in paediatric units in and around Cape Town for the past 4 years, with most recent experience at Red Cross War Memorial Children's Hospital in general, emergency and Intensive Care paediatrics, as well as Neonatal medicine at GSH. I am currently studying for an MPH in Epidemiology at UCT and have a special interest in Child Health. Our current projects include Pneumonia Surveillance - a national syndromic surveillance study investigating the most common pathogens responsible for pneumonia in our paediatric population, and an effectiveness study on Trivalent Maternal Influenza Vaccination. The latter aims to investigate the benefits of influenza vaccination for pregnant women, HIV positive women & prevention of adverse birth outcomes associated with influenza, as well as a reduction in severe disease amongst children <6 months old. I am based at the Red Cross Research Unit for Adolescent and Child Health.



#### <u>Washiefa Isaacs</u>

I am the Field Project Coordinator for the National Syndromic Surveillance for pneumonia in SA and for Effectiveness of Trivalent inactivated influenza maternal vaccination among pregnant women and their newborns in SA. I am responsible for the Cape Town project's coordination. I am a registered nurse by background with a major in management and have also completed master in nursing science in 2011. I have worked within clinical as well as operational research areas since 1997. I have qualified in 1992 with a 4 year integrated diploma in nursing science, I pursued with a bachelor of nursing science for Registered Nurses at University of Cape Town. Paediatric, adolescent and adult clinical care all appeal to me; both in a practical setting as well as teaching skills to other health care professionals or lay workers. I work with Dr Raphaela Itzikowitz as my direct line manager. We are planning on having 3 surveillance officers and 2 research assistants at the Red Cross Children's Hospital for the pneumonia study. The rest of the Research assistants will be placed at the different maternal sites to monitor the vaccination histories.



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The Red Cross Hospital GERMS-SA/ Pneumonia surveillance team with one of their first patients:

Cheryl Mentor (*left*), Lucia Madolo (Research assistant for Pneumonia Surveillance and Maternal influenza vaccination study, *centre*) and Washiefa Isaacs (Pneumonia Surveillance and Maternal influenza vaccination study FPC, *right*).

## Newest Provincial Epidemiologists

#### Motshabi Modise: Free State

I am a hard worker and always strive for success in all activities I am tasked with in a professional level or any other field in my life. My motto in life is "with work hard & you will achieve anything, there are no short cuts". I am fun loving and a very optimistic person. I like to balance professional & family life. I am a team player and also able to work independently. I am reliable; I strive to always keep positive.

I am a public health graduate, with a Master's degree in Public Health majored in Epidemiology and Biostatistics.

I have over 20 years of professional experience working on public health issues in many areas in high-profile organisations. I am a team leader with proactivity and dynamism, ample ability to transmit knowledge through training courses. Analytical with strong public health skills, I specialise in modelling, surveillance and Monitoring and evaluation and reporting to provide more effective and productive solutions that enhance data visibility and facilitate better decisions, and system strengthening. I am a member of the Golden Key International Honour Society effective from 2011. And I am so excited being in a job that involves my skills.

#### Mbhekiseni Khumalo: Mpumalanga

**Educational qualifications**: BSc. (Honours) (University of KwaZulu-Natal, 2006 -2009), MSc. in Epidemiology and Biostatistics (University of the Witwatersrand, 2012 - 2013)

**Work Experience**: Currently working as a Provincial Epidemiologist at NICD DPHSR, September 2014 to present

- Worked as a Data Analyst at NICD CTB, May 2014 - September 2014

- Worked as a Provincial Coordinator at NICD CTB, February 2013 - April 2014

- Worked as a Medical Scientist at NHLS IALCH, April 2010 - December 2011

# Launch of graphs showing cumulative numbers of invasive pneumococcal disease cases, 2005 to 2015

Athermon Nguweneza

Cumulative graphs of invasive pneumococcal disease (IPD) trends have now been made available on the National Institute for Communicable Diseases (NICD) website using the data from GERMS-SA national, active, laboratorybased surveillance for IPD.

Following introduction of the 7-valent pneumococcal conjugate vaccine (PCV 7) and 13-valent pneumococcal conjugate vaccine (PCV13) into the national immunisation programme (EPI) in 2009 and 2011 respectively, significant changes have been observed in IPD in South Africa. This is monitored through surveillance by the Centre for Respiratory Diseases and Meningitis (CRDM) at NICD.

The graphs look at cumulative weekly number of cases of IPD due to:

- any of the seven serotypes (4, 6B, 9V, 14, 18C, 19F and 23F) in PCV7 among individuals < 5 and ≥ 5 years of age in South Africa, from 2005 to date

- any of the six additional (1, 3, 5, 6A, 7F, 19A) serotypes in PCV 13 among individuals < 5 and ≥ 5 years of age in South Africa, from 2005 to date

- any of the serotypes not in PCV13 among individuals < 5 and ≥ 5 years of age in South Africa, from 2005 to date

Reductions in the rates of disease caused by PCV7 and PCV13 serotypes among both children and adults most likely reflect the direct and indirect effects of vaccination.

**N.B:** The cumulative graphs will be updated every 4 months on the NICD website. Useful links: http://www.nicd.ac.za/assets/files/Invasive%20Pneumococcal%20Disease%20Surveillance%20Report.pdf

### Goodbye to the invasive pneumococcal disease case-control study Claire von Mollendorf

After 5 years the invasive pneumococcal disease (IPD) case-control study has sadly come to an end. A total of 1408 IPD cases were screened for the study and 917 were eligible for enrolment; only 46 children could not be included due to missing vaccination or HIV information or refusal to participate. In addition surveillance officers screened over 26000 controls for the study and enrolled 3865 controls matched on age and HIV status to the eligible cases.

The biggest challenges for the team included obtaining vaccination histories for children with missing road -to-health cards or those that had died, confirming HIV-exposure status for HIV-uninfected children, finding CD4 information for HIV-infected mothers, finding HIV-infected cases and matching HIVinfected controls, and decreasing numbers of cases with vaccine-type disease.

Thank you to the GERMS-SA and IPD teams, the surveillance officers, the site coordinators and everyone else who contributed to this study and made it a success.



## Cryptococcal screen and treat programme

Dr Nelesh Govender

The NICD cryptococcal screen and treat programme had the pleasure of welcoming 3 new staff members. Tsabeng Makwati and Margaret Makhele (temp laboratory data clerks at Charlotte Maxeke Johannesburg Academic Hospital and Tambo Memorial Hospital respectively, *pictured below*) joined the team in October last year. Sr Deborah du Plessis was also appointed in the fixed-term contract position as field project coordinator in February 2015.



The team conducted monitoring and evaluation training for implementing partners, Health Systems Trust for the Lejweleputswa and FezileDabi districts in the Free State from 9-10 December 2014 and 20-21 January 2015.

Sr Deborah also led site visits at Tambo Memorial, Helen Joseph and Natalspruit hospitals from December 2014 to now.

Refresher clinical training was conducted by Dr Charlotte Sriruttan at Pholosong and Natalspruit hospitals during February 2015.



Cryptococcal Screening Programme Training with HST District, Clinical and Facility Mentors in Fezile Dabi - January 2015.

#### Continued from page 5...

#### Newsletter for the GERMS-SA Surveillance Network

Cryptococcal Screening Programme Training with HST District, Clinical and Facility Mentors in Lejewelputswa - December 2014



Cryptococcal Screening Programme Training with HST District, Clinical and Facility Mentors in Lejewelputswa, including a site visit to Hani Park - December 2014



## CryptoPath Overview

Nelesh Govender

A new study, nested within the GERMS-SA surveillance programme for cryptococcal meningitis (CM), will begin enrolment activities in May 2015. The study short title is **CryptoPath** (Pathways to Care for Crypto Meningitis during Implementation of a Screen-and-Treat Programme).

With this study, the investigators are proposing to conduct an evaluation of the South African Cryptococcal Antigen (CrAg) Screening and Treatment programme by exploring the pathways to care and outcomes among patients with CM both in districts implementing and not implementing a reflex laboratory screen-and-treat strategy.

Routine CrAg screening (reflex or clinician-initiated) has been recommended for all HIV-infected patients with CD4 counts <100 cells/ $\mu$ l in the most recent National Consolidated Guidelines for HIV (Dec 2014). This gives us a great opportunity to conduct evaluation studies by allowing us to compare areas adopting different strategies. The costs to the health services and to patients associated with CM care will also be estimated during the study.

The sites selected are five public referral hospitals in Gauteng participating in the GERMS-SA enhanced CM surveillance system. Three hospitals will be located in districts where the reflex laboratory screening has been fully implemented at NHLS CD4 laboratories. The two remaining sites will be located in a district not yet implementing reflex laboratory screening:

Reflex screening sites: Natalspruit, Tambo Memorial and Helen Joseph hospitals

Non reflex screening sites: Chris Hani Baragwanath hospital and Zola Jabulani district hospital

Adult patients with a first or recurrent episode of lab-confirmed or presumed CM admitted to the selected hospitals will be eligible and approached for enrolment.

The first part of the study will be cross-sectional in design, with retrospective review of pathways to care. The main objective of this study period is to explore "missed opportunities" for earlier diagnosis of cryptococcal disease prior to hospital admission. GERMS-SA surveillance data will be supplemented among patients admitted to hospital with CM. A questionnaire will be used to explore the pathways to care prior to admission and identify any missed opportunities for earlier diagnosis. The costs associated with seeking care will also be determined among these patients.

The second part of the study (still being planned) will have a cohort design and will explore linkage to care after hospital discharge and CM patient outcomes to 12 weeks after hospital admission. The main objectives of this second component are to determine the 12-week mortality and residual disability in this group. Patient and provider costs in the 12 weeks from hospital admission will also be measured.

We hope that this evaluation will assess to what degree the different "screen-and-treat" strategies are being delivered to the intended population (i.e. from the perspective of those who develop CM), its resource requirements, and the steps or processes involved from a patient perspective in accessing these services. The results will be valuable in informing further national programme implementation.

## New beginnings - GERMS-SA babies

Linda de Gouveia



Baby on board celebration picture taken during Dr Sarona's Baby Shower



**Dr Sarona Lengana**, who is working for CRDM, gave birth to a cute baby girl, Lerato. Your daughter is an adorable addition to your wonderful family. May her smile make your world a little brighter. Congratulations!

Welcome baby Lerato!!

## Update on Dorset slopes

Linda de Gouveia

#### The dos and don'ts of Dorset slopes!

- Do ensure that you always have fresh stocks
- Do order from CRDM at NICD on 011 555 0315/6
- Do store in the refrigerator (2 8 °C) prior to use
- Do ensure isolates are pure prior to inoculation
- Do incubate overnight at 37°C after inoculation
- Do store at room temperature after overnight incubation
- Do ensure writing on bijoux bottle is legible and correct
- Don't store in refrigerator once inoculated
- Don't batch for more than 1 2 weeks

Refer to NIC0187 for additional information



GERMS-SA Surveillance Site Operational Report Summary, January to December 2014

Penny Crowther-Gibson

|                            | ſſ                  | ANUARY TO | DECEMBER    | 1 2013         |               |          |                       |                  | JANU                       | ARY TO DEC          | EMBER 201 | 4           |                |
|----------------------------|---------------------|-----------|-------------|----------------|---------------|----------|-----------------------|------------------|----------------------------|---------------------|-----------|-------------|----------------|
| Lab<br>confirmed<br>cases* | # CRFs<br>completed | % CRFs    | # Interview | %<br>Interview | Organisms**   | Province | ES Site               | Organisms**      | Lab<br>confirmed<br>cases* | # CRFs<br>completed | % CRFs    | # Interview | %<br>Interview |
| 189                        | 167                 | 88        | 121         | 72             | A, B, E       | DEC      | NMAC/ UGH             | A, B, C, E, F    | 173                        | 92                  | 53        | 11          | 11             |
| 117                        | 105                 | 6         | 83          | 79             | A, B, E       | S        | Universitas/ Pelonomi | A, B, C, E       | 175                        | 147                 | 84        | 102         | 69             |
| 957                        | 894                 | 8         | 581         | 65             | A, B, C, E    | GA       | CHBH                  | A, B, E, F       | 453                        | 398                 | 8         | 312         | 78             |
| 693                        | 661                 | 95        | 563         | 85             | A, B, C, D, E | GA       | CMJAH                 | A, B, D, E       | 403                        | 375                 | 93        | 334         | 89             |
| 294                        | 281                 | 96        | 246         | 88             | A, B, E       | GA       | DGM                   | A, B, C, E       | 214                        | 186                 | 87        | 157         | 84             |
| 83                         | 50                  | 62        | 23          | 46             | B, E          | GA       | Natalspruit           | B, E             | 29                         | 22                  | 76        | 10          | 45             |
| 309                        | 298                 | 96        | 245         | 82             | A, B, C, D, E | GA       | RMMCH/ HJH            | A, B, D, E       | 156                        | 117                 | 75        | 96          | 82             |
| 300                        | 283                 | 94        | 242         | 86             | A, B, C, D, E | GA       | SBAH/ TDH             | A, B, D, E       | 154                        | 138                 | 60        | 133         | 96             |
| 75                         | 59                  | 62        | 40          | 68             | 8             | GA       | TMH/ BGH/ Pholosong   | 8                | 43                         | 32                  | 74        | 22          | 69             |
| 178                        | 162                 | 91        | 120         | 74             | A, B, E       | И        | Addington             | A, B, C, E       | 99                         | 51                  | 91        | 40          | 78             |
| 381                        | 370                 | 67        | 332         | 6              | A, B, E       | Ŋ        | Edendale/ Northdale   | A, B, C, E, F    | 277                        | 267                 | 96        | 252         | 94             |
| 148                        | 131                 | 68        | 101         | 11             | A, B, E       | И        | KEH                   | A, B, C, E       | 96                         | 85                  | 68        | 50          | 59             |
| 194                        | 184                 | 95        | 165         | 06             | A, B, E       | Ы        | RK Khan               | A, B, C, E       | 91                         | 79                  | 87        | 70          | 89             |
| 72                         | 63                  | 88        | 60          | 95             | A, B, E       | Ъ        | Polokwane/ Mankweng   | A, B, C, E, F    | 83                         | 17                  | 18        | 14          | 82             |
| 241                        | 211                 | 88        | 164         | 78             | A, B, E       | dW       | Rob/ Themba           | A, B, C, E, F    | 288                        | 254                 | 88        | 228         | 90             |
| 126                        | 123                 | 86        | 66          | 80             | A, B, E       | NC       | Kimberley             | A, B, C, E, F    | 110                        | 96                  | 87        | 75          | 78             |
| 112                        | 06                  | 80        | 59          | 99             | A, E          | MN       | Klerksdorp/ Tshepong  | A, B, C, E, F    | 294                        | 246                 | 84        | 212         | 86             |
| 350                        | 322                 | 92        | 251         | 78             | A, B, C, E    | WC       | GSH/ RXH              | A, B, D, E       | 313                        | 259                 | 83        | 223         | 86             |
| 179                        | 170                 | 95        | 122         | 72             | A, B, C, E    | WC       | Tygerberg             | A, B, D, E       | 294                        | 251                 | 85        | 208         | 83             |
| 4978                       | 4624                | 93        | 3617        | 78             | A, B, C, D, E |          | TOTAL                 | A, B, C, D, E, F | 3712                       | 3112                | 84        | 2609        | 84             |

Includes all IPD cases

\*\* A: S. pneumoniae, H. influenzae, and N. meningitidis; B: Cryptococcus; C: Candida; D: S. aureus; E: IPD; F: Rifampicin-resistant Tuberculosis arget not met Target met

Targets: 290% for CRFs completed; 270% for CRFs completed on interview

> The overall % of completed CRFs decreased and % of interviews conducted increased.

> CMJAH, SBAH/TDH, Addington and Edendale/Northdale reached both targets for quantity of work (se0% of CRFs completed, and z70% on interview), excellent!

> CHBH, DGM, KEH, RK Khan, Rob/Themba and Kimberley almost reached the 90% target for CRFs completed, well done!

> 15/19 sites exceeded the target of 70% for completed CRFs on interview. This is excellent for our data quality, well done!

> SBAHTDH, Edendale/Northdale and Rob/Themba achieved more than 90% on interview, well done!

## General Information for Surveillance Laboratories

**GERMS-SA Enhanced Surveillance Sites**: Please submit the following bacterial pathogens to the National Institute for Communicable Diseases (NICD) on Dorset Transport Media with a DISA/ TrakCare lab report or send specimen tube/blood culture bottle if uncertain of identification and/or no isolate available (contact lab to discuss).

| Pathogen  | Specimen  | Lab tests   | NICD Unit                     |
|---|---|---|-------------------------------|
| Streptococcus pneumoniae<br>Haemophilus spp.<br>Neisseria meningitidis                  | All normally sterile site specimens,<br>e.g. CSF, blood, pleural fluid,<br>peritoneal fluid, pericardial fluid,<br>joint fluid, tissue, etc.    | Culture positive<br>OR<br>Consistent Gram<br>stain OR<br>Latex positive | CRDM<br>011 555 0315          |
| Salmonella spp. (incl. Typhi)<br>Shigella spp.<br>Campylobacter spp.<br>†Vibrio cholera | Any specimen  | Culture positive  | CED<br>011 555 0333/4         |
| Diarrhoeagenic<br>Escherichia coli  | Gastrointestinal specimens,<br>e.g. stools, rectal swabs, etc.  | Culture positive  | CED<br>011 555 0333/4         |
| <i>Cryptococcus</i> spp.<br>( <b>no need to send isolates</b> )                         | Any specimen - enhanced<br>surveillance laboratories need to<br>inform the Surveillance Officers<br>about cases (January to March<br>inclusive) | Culture positive<br>OR<br>Latex positive<br>OR<br>India ink positive    | COTHI (MRL)<br>011 555 0384   |
| ++ Candida spp.   | Blood culture only  | Culture positive  | COTHI (MRL)<br>011 555 0384   |
| *Staphylococcus aureus  | Blood cultures only   | Culture positive  | COTHI (AMRRL)<br>011 555 0342 |
| **Pseudomonas aeruginosa  | Blood cultures only   | Culture positive  | COTHI (AMRRL)<br>011 555 0342 |

*†Vibrio cholerae* isolates from human and non-human (environmental) specimens must be reported to national Department of Health.

<sup>++</sup>Mthatha/Port Elizabeth, Pelonomi/Universitas, Dr George Mukhari, RK Khan, Addington, King Edward VIII, Edendale, Greys', Northdale, Polokwane/Mankweng, Rob Ferreira, Themba, Kimberley, Tshepong/Klerksdorp.

\*Charlotte Maxeke Johannesburg Academic, Steve Biko Pretoria Academic, Helen Joseph/ Rahima Moosa Mother and Child, Groote Schuur, Tygerberg.

\*\*Universitas, Chris Hani Baragwanath, Charlotte Maxeke Johannesburg Academic, Dr George Mukhari, Helen Joseph/ Rahima Moosa Mother and Child, Steve Biko Pretoria Academic, Tygerberg, Groote Schuur, Northdale, Inkosi Albert Luthuli, King Edward VIII, Mahatma Ghandi Memorial.

CRDM = Centre for Respiratory Diseases and Meningitis, CED = Centre for Enteric Diseases, COTHI = Centre for Opportunistic, Tropical and Hospital Infections, MRL = Mycology Reference Laboratory, AMRRL = Antimicrobial Resistance Reference Laboratory.

#### To order a new batch of Dorset Transport Media, please call CRDM at Telephone: 011 55 0315 For other surveillance questions, please call GERMS-SA at Telephone: 011 386 6234

## General Information for Surveillance Laboratories

**GERMS-SA Non-Enhanced Surveillance Sites**: Please submit the following bacterial pathogens to the National Institute for Communicable Diseases (NICD) on Dorset Transport Media with a DISA/ TrakCare lab report or send specimen tube/blood culture bottle if uncertain of identification and/or no isolate available (contact lab to discuss).

| Pathogen  | Specimen   | Lab tests   | NICD Unit                   |
|---|--|---|-----------------------------|
| Streptococcus pneumoniae<br>Haemophilus spp.<br>Neisseria meningitidis                  | All normally sterile site specimens,<br>e.g. CSF, blood, pleural fluid,<br>peritoneal fluid, pericardial fluid,<br>joint fluid, tissue, etc. | Culture positive<br>OR<br>Consistent Gram<br>stain OR<br>Latex positive         | CRDM<br>011 555 0315        |
| Salmonella spp. (incl. Typhi)<br>Shigella spp.<br>Campylobacter spp.<br>†Vibrio cholera | Any specimen   | Culture positive  | CED<br>011 555 0333/4       |
| Diarrhoeagenic<br>Escherichia coli  | Gastrointestinal specimens,<br>e.g. stools, rectal swabs, etc.   | Culture positive  | CED<br>011 555 0333/4       |
| <i>Cryptococcus</i> spp.<br>( <b>no need to send isolates</b> )                         | Any specimen<br>Private labs: Please just send a lab<br>form to the laboratory for case<br>counting  | Culture positive<br>OR<br>CrAg test positive<br>OR<br>CSF India ink<br>positive | COTHI (MRL)<br>011 555 0384 |

*†Vibrio cholerae* isolates from human and non-human (environmental) specimens must be reported to national Department of Health.

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