

Laboratory-Based Screening for Cryptococcal Disease

Reporting period 03/09/2012 to 16/11/2012

Results until end of epidemiologic week 46 (2012)

Programme Description:

The NICD's Centre for Opportunistic, Tropical and Hospital Infections (COTHI), in collaboration with several partner organisations including the Department of Health, implemented laboratory-based screening for cryptococcal disease at the NHLS CD4 laboratory at Charlotte Maxeke Johannesburg Academic Hospital on 3 September 2012. Twenty-five health care facilities (including three regional hospitals) that refer specimens to this laboratory have begun participating in the programme. Blood samples submitted for a CD4+ T-lymphocyte count from these facilities are tested for cryptococcal antigen (CrAg) using a cryptococcal lateral flow assay (LFA) if the CD4+ T-lymphocyte count is less than 100 cells/ μ l. Results for patients who test CrAg-positive are communicated by the laboratory to a pre-selected point of contact at each health facility. A comment for CrAg-positive results has been added to the CD4 laboratory report to alert the healthcare worker of the CrAg test result. In order to evaluate the impact of the screening programme, a comprehensive monitoring and evaluation plan has been developed. Patients with cryptococcal antigenaemia, who provide informed consent, are being followed up prospectively by the facility and the NICD surveillance team for up to 12 months. The following data are collected for CrAg-positive patients: lumbar puncture results; antifungal treatment; ART; time from CrAg testing to treatment initiation; adverse events and outcome (i.e. development of cryptococcal meningitis; death; or loss to follow-up). In addition, data on other key programme indicators such as number of cases of cryptococcal meningitis detected at the regional hospitals in the screening area, the number of personnel who are trained, and availability of fluconazole at facilities are collected. The objective of this report is to provide monthly updates of programme indicators to all stakeholders. Data reported in this report are incomplete due to retrospective collection of clinical data.

Comments:

To date, 1398 patients with a CD4+ T-lymphocyte count <100 cells/ μ l have been screened; 64 (4.6%) tested positive for CrAg. Fifty-nine percent (38/64) of patients were detected at Helen Joseph Hospital and 70% (45/64) of patients screened thus far were between 30-44 years old. During the reporting period, 30 cases of laboratory-confirmed meningitis were diagnosed at three regional hospitals (Helen Joseph, Rahima Moosa Mother and Child, and South Rand) that serve clinics participating in the screening programme; however, this number may include hospitalised patients who were not screened through this programme.

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Table 2. NHLS CD4 laboratory statistics for Phase 1 of the cryptococcal screening programme*

Laboratory Statistics	Number
Number of NHLS CD4 laboratories enrolled in screening programme	1
Number of NHLS CD4 laboratories reporting data	1
Number of CrAg screening tests performed	1458
Number of CrAg-positive tests/ number of specimens tested (%)	71/1458 (4.9%)

*Data source: NHLS Corporate Data Warehouse and NHLS laboratory information system

Table 3. Case statistics for Phase 1 of the cryptococcal screening programme*

Case Statistics	Sep 2012	Oct 2012	Nov 2012
Number of patients tested CrAg (month/YTD)	467/467	607/1074	324/1398
Number of CrAg-positive patients (month/YTD)	25/25	30/55	9/64
Number of CrAg-positive patients who had a lumbar puncture [†] (month/YTD)	12/12	16/28	2/30
Number of CrAg-positive patients who had a lumbar puncture with lab-confirmed CM [†] (month/YTD)	5/5	4/9	1/10
Number of CrAg-positive patients treated with fluconazole [†] (month/YTD)	17/17	17/34	1/35

*Data source: NHLS Corporate Data Warehouse, NHLS laboratory information system and NICD; [†]data may be incomplete at the time of reporting due to retrospective collection of clinical data: CrAg: cryptococcal antigenaemia; YTD: year to date; CM: cryptococcal meningitis

Table 4. Number of CrAg-positive patients, by facility, at 25 facilities that refer specimens to the NHLS CD4 laboratory at Charlotte Maxeke Johannesburg Academic Hospital, n=64

Facility Name*	Number of Cases
Helen Joseph Hospital	38
South Rand Hospital	8
Witkoppen Clinic	5
OR Tambo Clinic	4
Rahima Moosa Mother and Child Hospital	3
Crosby Clinic	2
Discoverers Centre	2
Berario Clinic	1
Randburg Clinic	1
Total:	64

*Only facilities with CrAg-positive patients are included

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Figure 15. Number of CrAg-positive cases, by age category, at 25 facilities that refer specimens to the NHLS CD4 laboratory at Charlotte Maxeke Johannesburg Academic Hospital, n = 64

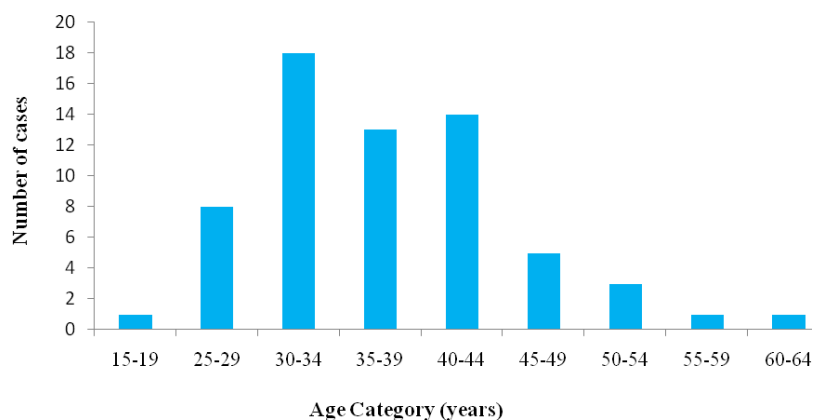
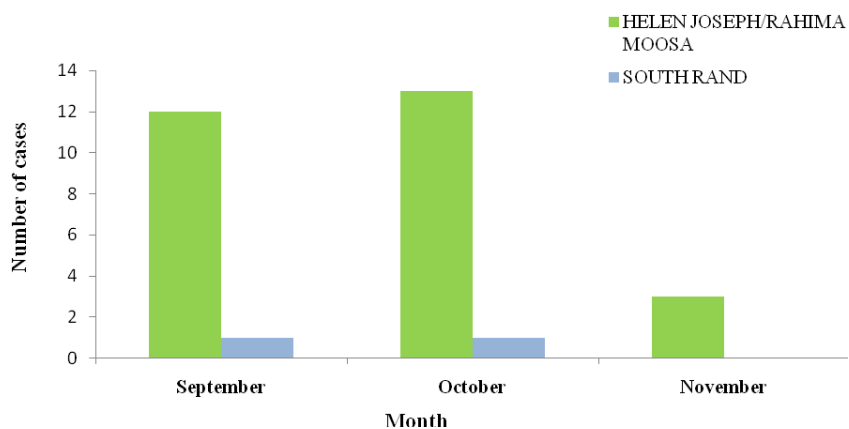


Figure 16. Number of laboratory-confirmed cases of cryptococcal meningitis[†] diagnosed at three regional hospitals (Helen Joseph, Rahima Moosa Mother and Child, and South Rand) that serve clinics participating in the screening programme, n = 30^{*}



^{*}Data source: GERMS-SA surveillance programme (data may be incomplete because surveillance audits have not been performed); [†]may include hospitalised patients who were not screened through this programme.