receiving treatment for tuberculosis in Soweto, South Africa. A composite diagnostic standard for *Streptococcus pneumoniae* was considered positive if any of routine blood culture, good quality sputum culture or Gram stain, urinary immunochromatographic testing (ICT) for pneumococcal C-polysaccharide (Binax® Now) or *lytA* real-time (rt) PCR on blood were positive for pneumococcus or lytA rtPCR on NPS was ≥8000 copies/ml. Other bacterial aetiologies were identified by routine blood cultures and sputum cultures, *mycobacterium tuberculosis* (TB) was assessed by acid-fast staining of sputum. Multiplex rtPCR for respiratory viruses and atypical bacterial pathogens (Fast-track diagnostics Respiratory pathogens plus) was used on NPA and triplex rtPCR for *S. pneumoniae*, *Staphylococcus aureus* and *Haemophilus influenza*e from whole blood.

Results: Among 280 HIV-infected persons with CAP, pneumococcus was the most frequently identified organism (n = 151 [53.9%], of which 79 [28.2%] were monoinfections; 75 [26.8%] by molecular diagnostics only), followed by TB (n = 69 [24.6%], of which 39 [13.9%] were monoinfections). 48 (17.1%) viral or mycoplasma infections were identified (10 as monoinfections, 38 as combinations mostly with pneumococcus [n = 32]). *Staphylococcus aureus* and *Haemophilus influenzae* were frequently detected in the nasopharynx, but only rarely isolated from blood or sputum cultures. Up to 5 different organisms were simultaneously present. No aetiology was identified in 22.9% of patients.

Conclusion: Using a combination of traditional and molecular methods, an infectious aetiology could be identified in the majority of episodes of acute CAP in HIV-infected South African adults. A large proportion was attributable to polymicrobial infections, most of which included the pneumococcus or tuberculosis. Viral monoinfections were relatively infrequent. Further work is necessary to delineate the utility of bacterial or viral identification from nasopharyngeal specimens as diagnostic tools in CAP.

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Common causes of bacterial meningitis at Mthatha Hospital Complex, Eastern Cape South Africa

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Background: The Mthatha hospital complex serves as a primary and referral centre to children in the OR Tambo district in thr Eastern Cape. The aim was to detained the common bacteriological causes of meningitis in children who present at the hospital.

Methods & Materials: A retrospective cross sectional study was done. The study from January 2012-December 2012. Cerebrospinal fluids obtained from children in paediatric wards and outpatients of nelson mandela and mthatha general paediatric wards were analyses to identify the most common causes of bacterial meningitis.. Children admitted to the neonatal unit were excluded. The age group analysed were 1month-12years.

Results: 182 patients met the study criteria. 14/182(7.7%)had a positive gram stain. csf culture was positive in 11/182.(6.0%).Only one patient had a bacterial pcr done as part of new NICD criteria for csfs with more than 100 white blood cells. It was positive for neissera meningitis serogroup Y. Bacterial antigens which are done at the onsite lab were positive in 8/182 (4.3%)

The most prevalent organism was strep pneumoniae (46%) followed by neissera meningitids (23%).Strep group B(1/182-7%),Strep GroupD (1/182-7%),e coli (1/182-7%),hemophilus influnzae (1/182 -6%)and proteus mirabilis (7%). Neissera targeted the older children typically 10-11yr olds.

Conclusion: The most prevalent organism was Strep pneumoniae. Currently there is a pcv13 vaccine available. Vaccines against neissera meningits do not form part of the public immunisation programme. More surveillance and studies are needed.The presence of Hib vaccine in the immunisation schedule has led to a decline in H influenza.CSF pcr could help identify organisms in patients with pleocytosis but negative gram stain and culture.Other causes of patients with csf pleocytosis include TB meningitis,viral meningitis but these were not part of the study. As a referral centre most children presenting to the hospital have already received an initial dose of antibiotic as part of INtergrated management of childhood illnesses or a course of antibiotics at their local hospital could sterilize the Csf which could yield to the lower yield of positive Csf cultures and antigens. Use of pcr might help us identify more pathogens.

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The role of Chlamydophila pneumoniae in the etiopathogenesis of schizophrenia and brain-derived neurotrophic factor (BDNF), neurotrophins like neurotrophin 3 (NT3) levels: A worldwide retrospective study

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Background: It's known that, in the occurrence of a neuropsychiatric disease like shisophrenia, multifactors such as genetic predisposition, neurodevelopmental disorders, social end environmental factors play a role. It was suggested that the synthesis of neurodevelopmental factors such as brain-derived neurotrophic

factor (BDNF) and neurotrophins like neurotrophin3 (NT3) were upregulated from monocyte/macrophages infected with *Chlamydophila pneumoniae* which is a microorganism considered among environmental factors. In this study we aimed to show at the worldwide level, for the first time, the relation of C.*pneumoniae infection*, BDNF and NT3 levels.

Methods & Materials: In this crossectional retrospective study 50 patients with shisophrenia and 35 healthy controls(HC) were included. The *C.pneumoniae DNA* was investigated by RT-PCR from PBMC and IgA, IgG, IgM were investigated by immunofluorescense in both patients and HC's serum samples. Additionnaly in serum samples BDNF and NT3 levels were determined by ELISA .Chi square and student's t-tests were used for statistical analyses.

Results: A past *C.pneumoniae* infection was detected in 36 persons(>1/16)(72%) of our patient group and in 14 patients(40%) of our HC group ($p < 0.05$). *C.pneumoniae* DNA was not found in both groups.BDNF level in the patient group was between 811-3422pg/ml (average 1408 pg/ml). In the HC this lewel was between 1084-3171 pg/ml (average 2736 pg/ml)($p < 0.05$). NT3 level, in the patient group, was between 81-1312 pg/ml(average 525pg/ml) and in the HC this level was between 378-1750 pg/ml (average 860 pg/ml)($p < 0.05$)

Conclusion: In conclusion,although in cases with schizophrenia, compared to control group,the presence of *C.pneumoniae* infection was found remarquably high,the DNA of *C.pneumoniae* was not found in any cases. Otherwise, from neurotrophins, the BDNF and NT3 levels, were found significantly low in the patients compared to healthy controls.This findings suggested us that this is the result of their long term medication with antipsychotics. Although, in this study, which is the first international study in the basis of *C.pneumoniae*, schizophrenia relation, and the detection of BDNF and NT3 levels, a conviction was'nt reached and we are thinking that new studies, especially based on cohort and performed with large series including these tree parameters (schizophrenia, *C.pneumoniae*, neurotropic factors) supported by molecular methods are needed.

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Management of non-malarial fevers in outpatients – when is there a need of antibiotics?

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Background: Recent years' decreased malaria transmission, the implementation of rapid diagnostic tests for malaria and the roll out of vaccines against common pneumonia causing bacteria have affected validity of guidelines and there is evidence of increasing over-use of antibiotics.

Methods & Materials: We studied the aetiologies of non-severe febrile illness among children and adults, 1087 patients, 3 months to 50 years old, with a history of fever during the past 48 hours were enrolled. A combined throat and per nasal swab, urine sample and aerobic blood culture were taken on each case. Patients were followed up 2, 7 and 14 days after enrolment to follow progress and to take a convalescent blood sample.

Results: Upper respiratory tract infection (34.5%) and urinary tract infection (23.3%) were the most common diagnoses followed by unspecific fever (16.5%). 133 (12.2%) patients fulfilled criteria for IMCI/IMAI pneumonia. 19% of throat/NP cultures were positive with most (63%) growing S. pneumonia. A positive swab had no relation with being classified as WHO-defined pneumonia ($p > 0.05$). For urine cultures, 9% of children less than one presented significant bacterial growth, all with E.coli. In adults, 6% had significant bacteria in urine. 48 (4.4%) of blood cultures flagged positive, whereof 33 (3.0%) contaminants while 15(1.4%) grew illness-causing pathogens. 8 (1.6%) of these were in children below five ($n = 487$). Seven blood cultures flagged positive for S. typhi, four children grew streptococci spp, one child grew Acinetobacter Baumanii and two adults and one child were positive for E.coli. IMCI/IMAI pneumonia or the presence of danger signs at assessment did not predict a positive blood culture ($p = 0.19$ and 0.6, respectively). There were no case fatalities during the study and 1010 patients were seen on day 14 whereof 2% reported no improvement or worsening, non of these were among patients with positive blood cultures.

Conclusion: Invasive bacterial illness is uncommon in outpatients with limited relation between clinical classification and positive culture. Results from PCR and the aetiological correlation with IMCI/IMAI diagnosis will be presented and the possible impact on antibiotic use discussed.

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Ferritin-iron acquisition in the emerging pathogen Burkholderia pseudomallei

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Background: The ability to acquire iron from the host environment is essential for the virulence of pathogenic bacteria. Previous studies with the globally emerging Gram-negative pathogen *Burkholderia pseudomallei* revealed that mutants defective in siderophore synthesis and transport were still capable of using mammalian ferritin as iron source and remained virulent in a murine melioidosis model. At present, essentially nothing is known about the role of iron acquisition in the pathogenesis of *B. pseudomallei* infection and ferritin-iron acquisition pathways have never been defined in Gram-negative pathogens.

Methods & Materials: Previous studies with *B. cenocepacia* indicated involvement of a serine protease in ferritin iron acquisition. *B. pseudomallei* cells were grown in the absence and presence of a soluble protease inhibitor cocktail or its individual constituents. Putative genes encoding secreted and non-secreted serine protease were deleted. In both instances, growth in iron-depleted growth medium was employed as a measure of the ability to utilize ferritin as sole iron source.