

antibiotic administration was greatest on day 1: ceftriaxone (36%, 143/398), metronidazole (27%, 67/245), ciprofloxacin (34%, 39/114) and all inpatients who missed at least one dose-day of prescribed amoxicillin and azithromycin. Most patients received fewer doses than were prescribed: ceftriaxone (74%, 273/371), ciprofloxacin (90%, 94/105) and metronidazole (97%, 222/230). Of prescribed doses, only 62% of ceftriaxone doses (1178/1895), 35% of ciprofloxacin doses (396/1130) and 27% of metronidazole doses (1043/3862) were administered. Seven percent (13/188) of patients on intravenous metronidazole and 6% (5/87) on intravenous ciprofloxacin switched to oral route.

Interpretation: High rates of antibiotic use both pre-admission and during hospitalization were observed, with low parenteral/oral switch of hospital-initiated antibiotics. Under-administration of prescribed antibiotics was common, especially on the day of prescription, risking loss of efficacy and antibiotic resistance.

Source of Funding: Training Health Researchers into Vocational Excellence (THRIVE) in East Africa grant number 087540, funded by the Wellcome Trust African Doctoral Dissertation Research Fellowship (ADDF) award 2013 - 2015 ADF 006 offered by the African Population and Health Research Centre (APHRC) in partnership with the International Development Research Centre (IDRC).

Abstract #: 1.026_INF

Predictors of Tuberculosis Treatment Outcomes in Rural, Central India, 2003 – 2015

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Background: Individual patient characteristics are known to influence tuberculosis (TB) treatment outcomes. We designed a retrospective study which measured how demographic, temporal and geographic characteristics affected TB treatment outcomes in our population.

Methods: Jan Swasthya Sahyog (JSS) has maintained a database of all treated TB patients from 2003 to the present, excepting 2004 (n = 5,213). This database includes patient demographic, temporal and geographic characteristics. Outcomes were categorized as follows: ongoing treatment, positive (cured or completed treatment), and negative (died, defaulted or transferred care). Predictors included age, initial body mass index, previous treatment status, disease site, sex, and treatment site.

Characteristics statistically significant in univariate analyses were used for multinomial regressions. Proportion of treatment outcomes by proximity to treatment site were graphed with calculation of associated r^2 values.

Findings: In multinomial regressions, only women (RR 1.52, 1.23 – 1.87) and individuals treated at subcenters achieved more positive outcomes (RR 2.82, 2.00 – 3.96).

Positive treatment outcomes improved over time (2005: ~40%; 2014: ~70%), but varied by the month of treatment start and were 10% higher from September to February (~55%) compared to March to August (~45%). This trend persisted across year of treatment start, sex, and location of treatment (center versus subcenter).

We observed an inverse ratio between proximity to treatment in kilometers ($r^2 = 0.195$) or travel time in hours ($r^2 = 0.367$) and positive treatment proportions. This relationship was attenuated from September to February ($r^2 = 0.132$) and increased from March to August ($r^2 = 0.200$) for distance.

Interpretation: Being female and local treatment improved outcomes. Variability in treatment outcome by month exists and may be linked to local occupation patterns or seasonal transportation barriers. March to June correlates with patient travel for work while June to August with planting at monsoon start. It is unclear whether the improved outcomes in subcenter patients are related to proximity or other factors like community health worker access. This retrospective study cannot answer these hypotheses, which warrant further investigation.

Source of Funding: Internally funded through Jan Swasthya Sahyog and the HEAL Initiative. No external funding.

Abstract #: 1.028_INF

Evaluating Parental Knowledge of Bacterial Meningitis

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Background: Bacterial meningitis is a major cause of under-five mortality, especially in developing countries, with 9% of under-five deaths in 2016 caused by either meningitis or sepsis. Parental knowledge of disease affects ability to take health actions on behalf of their children. This study aimed to assess prior knowledge of bacterial meningitis in parents of children admitted to KATH with suspected meningitis or suspected sepsis.

Methods: Parents at Komfo Anokye during the study period (July/August 2016) who met the inclusion criteria were interviewed in person and included in the prospective cohort. Parents of children who had been admitted previously (2014–July 2016) were included in the retrospective cohort. All parents were asked to identify 20 statements about bacterial meningitis as true or false. The total number of correct answers given constituted a participant's knowledge score.

Findings: Overall average scores were similar between the prospective and the retrospective cohorts. The level of education a participant had completed did not have a significant affect on the knowledge score.

68% of participants reported they had never heard of bacterial meningitis. Parents seemed to possess some general knowledge of infectious disease, but little specific understanding of meningitis. 46.51% of participants, both prospective and retrospective, reported that the doctor had not told them anything about what was wrong with their child.

Retrospective participants were asked to identify any long-term neurological sequelae present in their children. Although only 5 patients had a confirmed clinical discharge diagnosis of meningitis, 31.25% of parents reported residual neurological sequelae in their child at the time of the interview. Parents who reported sequelae were asked if they felt their children would suffer any long-term social consequences. 73.33% of parents who reported sequelae felt that their child would need a permanent caregiver and 6.67% felt the deficit might prevent the child from completing their education.