resistant strains to at least one antimicrobial. MIC 50 and MIC 90 as well as microbiological breakpoints clearly are species dependent. A multiresistance antibiotic profile was effective for most bacterial strains, and pronounced resistance profiles were observed for the commonly used antibiotics. Our results strongly suggest resistant patterns to the *Lactobacillus genus* which could be either intrinsic (against vancomycin, trimethoprim and metronidazole) or acquired (against penicillin, oxytetracycline and erythromycin). However, some strains with MIC close to the breakpoint values can be attributed to natural variation within the species.

Conclusion: As antibiotic resistance is a growing problem, an holistic approach strategy based on animal, plant and food control should be capable to stop its spread.

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26.009

An outbreak of Cerebrospinal meningitis in Jigawa state Nigeria 2009

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Background: Cerebrospinal Meningitis (CSM) is a fatal infection with high morbidity and mortality. Jigawa State with a population of 5 million people lies within the nation's meningitis belt. We conducted a descriptive study of the outbreak.

Methods: Health workers as well as cases were interviewed. Hospital records, laboratory and CSM surveillance data in the state were reviewed.

Results: There were community mobilization/advocacies and health staff sensitization/motivations as part of pre-epidemic preparation. The index case a 13 years old male presented in the clinic on the 23/12/08. The cases increased from 12 and one death in epidemiologic week one to 1,238 cases and 43 deaths in week 13. The most affected age group was 5 — 15 years (>65%). A reactive vaccination was carried out at 11 of the 26 affected LGAs targeting age group 2-30 years at week 15. Of the 113 cerebrospinal fluid samples taken 84 was positive for Neisseria meningitides type A, two for Haemophilus influenza and others were negative. Case fatality rate (CFR) was dependent on the area. The epidemic ended in the state with 8,616 cases, 306 deaths, CFR of 3.6 and an attack rate of 181.9. The CSM surveillance was 100% timely and 87% complete.

Conclusion: The State ran out of prepositioned drugs/vaccine as the epidemic was propagating faster than the control measures. Supplies were delayed from the Federal level due to delay in resource mobilization. Pockets of vaccination were done at those LGAs that had crossed the alert threshold and schools that were experiencing outbreaks through the assistance of medicine san frontiers. Most cases had lived in overcrowded rooms and had not been vaccinated in the last five years. The laboratories ran out of supplies.

Unequal distribution of qualified personnel led to the varied CFR observed in various part of the state and this was further complicated by erratic drugs supplies to the hospitals. The recommendations from this investigation led to the establishment of an active Federal Emergency Preparedness and Response (EPR) committee and the decision by all States to preposition vaccines and drugs independent of the Federal Government.

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Risk factors for repeated cholera outbreak in Arua municipal council, north-western Uganda

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Background: Cholera outbreaks have occurred annually in Arua district especially in the Municipal Council (AMC) since 2005 with an average case-fatality rate (CFR) of 2.1%. The study objective was to establish the risk factors for repeated cholera outbreak in AMC with a view of designing appropriated strategies for preventing future cholera outbreaks.

Methods: Unmatched case control study was conducted in July 2009. Cases were defined as individuals who had lived in the Municipality for at least two years and had symptoms of cholera, while controls were persons that lived in the neighbourhood of a case, but did not have symptoms of cholera. Case definitions of the Epidemiology and Surveillance division, Ministry of Health Uganda were used as eligibility criterion for cases. A total of 23 cases and 46 controls were interviewed using a semi structured questionnaire and analysis done using EPI INFO 2008 version 3.5.1. Univariate and bivariate analysis was done. Odds ratios and 95% confidence intervals were used to determine association and statistical significance at $p<0.05$.

Results: Factors identified for repeated outbreak of cholera in AMC included: being younger than 25years of age (OR = 4.3, CI = 1.29 — 14.21); having no post primary education (OR = 5.6, CI = 1.46 — 21.50); having source of information on cholera from IEC materials (OR = 0.84, CI = 0.11 — 0.85); not covering latrine after use (OR = 6.48, CI = 2.11 — 19.90); using un protected water source (OR = 5.65, CI = 1.66 — 19.99) and drinking untreated water (OR = 5.34, CI = 1.78 — 16.01).

Conclusion: Risk factors for repeated cholera outbreak were: being younger than 25years; having no post primary education; not covering latrine after use; using unprotected water source and drinking untreated water, while having source of information on cholera from IEC materials was protective. The findings emphasised the importance of personal hygiene, communal sanitation and being knowledgeable and educated.

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