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EBOLA

A State of Biopreparedness

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Introduction: Westmead Hospital (WMH) recognized gaps in its preparedness to respond to the Ebola 2014 outbreak in West Africa. A fragmented system was identified. A 'State of Bio-preparedness' project team convened to discuss all health-care services in the planning, training, and implementation of a biopreparedness response.

Methods: A survey targeting the staff's competence and confidence in biologically hazardous infection management was conducted. Semi-structured interviews explored staff members' experiences and perspectives of biopreparedness response. The collaborative team called "State of Biopreparedness" (SOB) was assembled and a clinical practice improvement project was undertaken. To assess readiness, nine simulated Viral Haemorrhagic Fever (VHF) exercises involving staff and consumers were conducted. These exercises were debriefed by the multidisciplinary committee and themes and issues were identified. These nine simulation drills then assessed readiness and evaluated performance.

Results: A number of consistent issues continue to emerge including:
1. A standard communication pathway for notification was needed - use of the incident paging system (111 pages) to notify the hospital's incident management team.
2. A consistent and coordinated approach to the training and maintenance of standardized and high-level Personal Protective Equipment (PPE) protocols for frontline clinical and clinical staff was required.
3. Clear delineation of roles and responsibilities and supporting these roles by translating the VHF Control Guideline and policy into task cards and checklists.
4. Strengthening intra- and interdepartmental staff collaboration and communication.
5. Infection control measures to be taken by staff after identifying a patient with possible VHF to reduce the risk of transmission of disease to staff, other patients, and visitors.

Discussion: Integrating disaster management processes with clinical protocols had a positive impact on the hospital's biopreparedness response. Simulation exercises were a vital and practical way for staff to feel confident and competent to perform their roles.

Association Between Vitamin A Supplementation and Mortality Among Patients with Ebola Virus Disease: An International Multisite Cohort Study

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Introduction: Micronutrient supplementation is recommended in Ebola Virus Disease (EVD). However, there is limited data on its therapeutic impacts. This study evaluated the association between vitamin A supplementation and mortality outcomes in EVD patients.

Methods: This retrospective cohort study accrued patients with EVD admitted to five International Medical Corps run Ebola Treatment Units (ETU) in two countries from 2014-2015. Protocolized treatments with antimicrobials and micronutrients were used at all ETUs. However, due to resource limitations and care variations, only a subset of patients received vitamin A. Standardized data on demographics, clinical characteristics, malaria status, and Ebola virus RT-PCR cycle threshold (CT) values were collected. The outcome of interest was mortality compared between cases treated with 200,000 International Units of vitamin A on care days one and two and those not. Propensity scores (PS) based on the first 48-hours of care were derived using the covariates of age, duration of ETU function, malaria status, CT values, symptoms of confusion, hemorrhage, diarrhea, dysphagia, and dyspnea. Treated and non-treated cases were matched 1:1 based on nearest neighbors with replacement. Covariate balance met predefined thresholds. Mortality proportions between cases treated and untreated with vitamin A were compared using generalized estimating equations to calculate relative risks (RR) with associated 95% confidence intervals (CI).

Results: There were 424 cases analyzed, with 330 (77.8%) being vitamin A-treated cases. The mean age was 30.5 years and 57.0% were female. The most common symptoms were