

Abstracts of Oral Presentations-WADEM Congress on Disaster and Emergency Medicine 2019

EMERGENCY MEDICAL TEAMS

Beyond EMT 2 Minimum Standards

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Introduction: The World Health Organization's (WHO) minimum standards are used to verify Emergency Medical Teams (EMTs) internationally. The National Critical Care and Trauma Response Center (NCCTRC) was one of the first few EMT 2 verified teams globally.

Aim: The NCCTRC aims to innovate and provide leadership in the provision of best practice clinical care in the EMT 2 setting in disaster-affected countries.

Methods: The NCCTRC developed a clinical governance framework and committee with a view of improving practice in the deployed environment. A gap analysis against the Australian National Standards was done and a decision was made to proceed with accreditation against the ACHS EQUIP 6 framework.

Results: The process of accreditation required a self-assessment that identified gaps in our guidelines and care processes thereby leading to innovative projects to meet the criterion in a sustainable way for the deployed field hospital environment. The NCCTRC has developed adapted clinical tools to manage pressure injury, falls risk, handover, hand hygiene, audits, and consumer feedback.

Discussion: The deployed field hospital environment can meet national accreditation standards for clinical care. The WHO minimum standards were introduced in 2013 and serve as a marker of the minimum requirements in the field. The challenge is to do better than the minimum. This study demonstrated that it is possible to adapt hospital accreditation standards to the field environment and provide a higher, safer quality of care to affected populations. EMT teams should maintain their clinical care standards from their home environment wherever possible in the field hospital environment. Striving to provide the best and safest care is the duty of care for vulnerable populations.

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Development of a Mobile Laboratory for Sudden Onset Disasters

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Introduction: Clinical diagnostics in sudden-onset disasters (SOD) has historically been limited. With poor supply routes, lack of a cold chain, and challenging environmental conditions, many diagnostic platforms are unsuitable.

Aim: We set out to design, implement, and evaluate a mobile diagnostic laboratory accompanying a type II emergency medical team (EMT) field hospital.

Methods: Available diagnostic platforms were reviewed and selected against infield need. Platforms included HemoCue301/WBC DIFF, i-STAT, BioFire multiplex RT-PCR, Olympus BX53 microscopy, ABO/Rh Grouping, and specific rapid diagnostic tests (RDT). This equipment was trialed in Katherine, Australia and Dili, Timor-Leste.

Results: During the initial deployment, validation of FilmArray rt-PCR multiplex tests was successful on blood culture, gastrointestinal, and respiratory panels. HemoCue301 ($n = 20$) haemoglobin values were compared on Sysmex XN 550 ($r = 0.94$). Analysis of HemoCue WBC DIFF samples had some variation when compared to Sysmex XN 550, (neutrophils $r = 0.88$, lymphocytes $r = 0.49$, monocytes $r = 0.16$, eosinophils $r = 0.70$, basophils $r = 0.16$). i-STAT showed non-significant differences for CHEM4 ($n=10$), CG8 ($n = 10$), and TnI ($n = 5$) against Vitros 250. A further trial of BioFire rt-PCR testing in Dili, Timor-Leste diagnosed 117 causative pathogens on 168 FilmArray test cartridges.

Discussion: This mobile laboratory represents a major advance in SOD. Setup of the service was quick (<24hr) and transport to site rapidly. Training was simple and performance consistent. Future deployment in fragmented health systems after sudden onset disasters with EMT2 will now allow broader diagnostics.

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Emergency Medical Teams in ASEAN Region - Challenges for Global EMT Classification

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Introduction: Quality assurance of Emergency Medical Teams (EMTs) is a world concern. The World Health Organization (WHO) published an international guideline for EMTs in