

Abstracts of Scientific Papers-WADEM Congress on Disaster and Emergency Medicine 2017

Point of Care Ultrasound at Emergency Department (ED) Shaping our Emergency Care to a Great Effect: Experience from Tikur Anbessa Specialized Tertiary Care Hospital

Temesgen B. Abicho

Emergency Medicine, Addis Ababa University, Addis Ababa/Ethiopia

Study/Objective: To assess and review Point of Care Ultrasound (POCUS) done at tertiary care hospital ED for 6 months

Background: POCUS is an ultrasound that is performed and interpreted by a provider at the patient's bedside, in real time in many medical specialties. Point-of-care ultrasound has been a part of the specialty of emergency medicine for two decades, and is referred to within the specialty as Emergency Ultrasound (EUS). Emergency physicians are confronted with critically ill patients with undifferentiated complaints, and must make time sensitive diagnostic decisions or perform therapeutic interventions based on limited available information.

Methods: A review of logbooks and charts were done for 6 months, and traced in comparison to radiology examinations when available.

Results:

POCUS type	Percentage
FAST and E-FAST	41%
IVC Scan	30%
DVT scan	10%
Cardiac/Echo	9%
Pneumonia	5%
Therapeutic tap	3%
Others	2%

Table 1. A Six-Month Review of Emergency Ultrasound Procedures at Emergency Department.

No major reading discrepancy when available readings

Conclusion: Point of care ultrasound when performed at EDs for critical patients is time saving and helps for quick intervention.

Prehosp Disaster Med 2017;32(Suppl. 1):s43

doi:10.1017/S1049023X17001273

The State of Emergency Radiology Service among Public Hospitals in Tanzania

Said S. Kilindimo

Emergency Medicine, Muhimbili University of Health and Allied Sciences, Dar Es Salaam/Tanzania

Study/Objective: We aimed to analyze resources available for emergency care in public hospitals, which includes acute care services in the Emergency department and Supportive service (Pharmacy, Laboratory and Radiology). This abstract will focus on availability of radiological services for emergency care.

Background: During a disaster or a non-disaster state, Emergency Departments function at their best when there are readily available supportive services from Radiology, Laboratory and Pharmacy.

Methods: The study was a prospective, cross-sectional design covering 98% of both regional and district hospitals. We directly inspected facilities and equipment, and use structured checklist to collect the data. The investigator also interviewed both the head of radiology, and the staff working in the radiology departments to check the accuracy of the information collected.

Results: Among all hospitals surveyed, an X-ray and Ultrasound service was absent in 39% and 38% respectively, and none of the hospitals had a CT scanner. Among those not having X-ray service, 27% have the machine but it's not working. A similar trend is seen for ultrasound services as 29% of the hospitals state their machine defaulted. When we asked the reason, the majority (75%) stated waiting for repair. Regional hospitals are referral points for District and Health center facilities, and hence expected to have better services. In a sub-analysis of Regional hospitals we found increased crisis as the X-ray and Ultrasound services were missing in 35% and 44% respectively. Among these 30% of X-rays and 35% of Ultrasound machines were available but not working.

Conclusion: There is deficit in radiological services across hospitals in Tanzania, with long waiting repair time significantly contributes to the burden observed. In turn, this might compromise the management of acutely ill patients and hence their outcome.

Prehosp Disaster Med 2017;32(Suppl. 1):s43

doi:10.1017/S1049023X17001285

Radiology and Emerging Asymmetric Threats in Urban Settings

Mohammad Naeem

Fort Belvoir Community Hospital, United States Army, Fort Belvoir/VA/United States of America

Study/Objective: To explain the role of radiologists in unconventional CBRNE threats, highlighting the most critical, vital, and paramount role of military diagnostic imagers, being at the forefront of today's asymmetric warfare.

Background: Today, nation-states are engaged in 4th, 5th, and 6th generation warfare with non-state actors. The conventional and emerging CBRNE threats in this unconventional warfare pose significant challenges to both military and civilian medical planners and operators. This form of non-linear and unrestricted requires seamless and flawless communication, collaboration, and cooperation between the civil and military authorities of any nation state.

Methods: Introduction of First Generation linear Warfare (massed manpower). World War 1, 2nd Generation Warfare (massed firepower), and evolution of combat radiology. World War II, 3rd Generation Warfare, (armored-maneuver). Iraq and Afghanistan, 4th Generation Warfare, and imaging spectrum of trauma in non-linear battlefield. Radiologists as defenders in radiological, nuclear, and blast related threats in asymmetric 4th Generation warfare. Introduction of 5th Generation (unrestricted) Warfare, Inhalational Anthrax, and Radiology. Introduction of 6th Generation (distant no-contact systems versus systems warfare, cyber warfare, manipulation of sea-air-land-space and time), and 7th Generation (environmental) warfare.

Results: The civil and military medical responders previously trained in handling the casualties of 3rd Generation warfare have to start thinking out of the box, and steadfastly, and expeditiously adapt themselves to the asymmetric and unconventional CBRNE challenges of the modern day non-linear battlefield. The role of the diagnostic radiologist is more vital today than ever before.

Conclusion: The importance of the radiology community in preparation of emerging unconventional threats cannot be overstated. Whether it's a stolen industrial unshielded radiation source, hidden in a mall, a homemade IED, or detonation of a 1–10 Kiloton improvised nuclear device, radiology has to be, and will be, at the forefront of prevention, mitigation, preparation, response, and consequence management of such a catastrophe.

Prehosp Disaster Med 2017;32(Suppl. 1):s43–s44

doi:10.1017/S1049023X17001297

Evaluation of Health Care Professionals Knowledge - Care of Patients with Radiological Exposure

Silvana T. Dal Ponte¹, Bonnie Arquilla², Patricia Roblin², Christina Bloem³, Gabriela Petitot⁴, Pauline Simas⁴

1. Emergency, hospital de clínicas de porto alegre, porto alegre/Brazil
2. Disaster, state university of new york, new york/NY/United States of America
3. Emergency, state university of new york, new york/NY/United States of America
4. Medicine, federal university of rio grande do sul, porto alegre/Brazil

Study/Objective: Cross-sectional, multi-center study. To evaluate the knowledge of different groups of health care professionals concerning the priority of treatment and decontamination of critically ill patients exposed to cesium-137.

Background: Radiation injuries have been an infrequent occurrence; however, as careful as we may be, with the expanding use of radioactive materials in medicine, science, and industry have significantly increased the potential that under emergency conditions the medical professional may be presented with a patient who has been contaminated or exposed to radiation. Caesium-137 has been involved in several radiological accidents; the best-known case is the Goiania accident in 1987.

Methods: Cross-sectional, multi-center study. Research was carried out through a questionnaire with a fictional scenario about what to do if a patient contaminated arrived in shock at an emergency department. This questionnaire was administered to physicians, residents, medical students, nurses, nursing assistants, and technicians at three teaching hospitals; Clinicas's Hospital-Porto Alegre/Brazil, Kings County Hospital/SUNY Downstate Medical Center, Brooklyn, New York, and Northwestern Memorial Hospital, Chicago, Illinois. The results were analyzed. The difference was considered significant, $P < .05$.

Results: All 170 health care professionals responded to the question posed for the fictional scenario, and 29.41% of all responses was for "treatment." The responses in each group, for all three hospitals was: Emergency Physicians 46.42%, Pediatricians 38.46%, Medical Residents 20.93%, nurses 18.51%, technicians 27%, nursing assistants 58%, and medical students 33.33%. There was a significant difference between the total numbers of correct answers (ie, "treatment") of health professionals from hospitals groups.

Conclusion: Many health care professionals from three Hospitals did not respond correctly when posed with a question concerning patients with radiation exposure. Knowledge of radiation safety for patients and health care workers is limited, regardless of medical specialty. These findings emphasize the need for educational initiatives.

Prehosp Disaster Med 2017;32(Suppl. 1):s44

doi:10.1017/S1049023X17001303

Compare the Setup Time and Safety of Intraoperative (O ARM) with Traditional Intraoperative Fluoroscopy (C ARM), and Nursing Implications in Neurosurgery Over a 12 Month Period

Minju Malhotra

Operating Room, JPN Apex Trauma Centre, New Delhi/India

Study/Objective: To compare the setup time and safety of Intraoperative (O ARM) with traditional Intraoperative Fluoroscopy (C ARM) and nursing implications in Neurosurgery over a 12-month period.

Background: Radiation exposure remains a concern with traditional methods of Intraoperative (OARM) imaging's in spinal surgery. The use of OARM has been proposed for more accurate and efficient in spinal instrumentation. However, there are concerns with setup time and other nursing concerns.

Methods: Study Design: Comparative Study. Setting: Neurosurgery Operation Theater. Period of: January 1, 2015 to December 31, 2015 (12-month study). Data collected from Nurses Records: for the period January 1, 2015 to December 31, 2015.