

**(A257) Enhancing Human Resources for Health in Crisis: Experience from the War-Affected Districts of Sri Lanka**K. Wickramage,<sup>1</sup> T. Ranasinghe,<sup>2</sup> A. Zwi<sup>3</sup>

1. Health Unit, Colombo, Sri Lanka
2. Government of Sri Lanka, Colombo, Sri Lanka
3. Faculty of Medicine, Sydney, Australia

**Aims:** This paper examines the coordination framework and interventions undertaken by the Sri Lankan health sector in providing essential health services to the displaced communities in the aftermath of the violent conflict in 2009. The narrative describes, in a chronological format, the strategies and actions undertaken by the health sector in response to a rapidly changing humanitarian crisis. The paper examines some of the key challenges faced by the health sector in the post-conflict recovery phases, the most pertinent being the human resources for health needs.

**Methods:** A review of Ministry of Health departmental meeting minutes/circulars, inter-agency health coordination meeting reports, weekly surveillance reports, inter-agency/agency assessments, media files, and donor and health cluster member reports were compiled and then analyzed in order to construct a narrative on how the Health Sector responded to the humanitarian crisis (from acute emergency phase to the post-conflict recovery and resettlement phase). The authors also were integrally involved in the planning, development, implementation, and monitoring of a spectrum of health sector interventions during the humanitarian crisis from within Government and the United Nations system.

**Recommendations:** A health systems strengthening approach, which places emphasis on human resources for health, can be effective in delivering high impact, sustained, high quality health care even in difficult and complex humanitarian emergencies such as civil war. The Sri Lankan experience has shown that harnessing effective human resource management strategies in crisis also is vital for the post-conflict health system recovery phase that follows. The excuse that “the system may be too overwhelmed”; or health departments “too overstretched” to lead a coordinated effort can be mitigated with positive leadership and planning. The dividends of working in such an approach also ushers reconciliation via a unified health workforce and promoting the idea of health as a bridge for peace.

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**(A258) Is It S.M.A.R.T. To S.T.A.R.T. To S.A.L.T. M.A.S.S. Casualty Victims?**

R.L. Alson

Emergency Medicine, Winston-Salem, NC, United States of America

Triage of disaster and trauma victims is challenging, especially when responders have limited resources and brief periods of time. Over-triage of victims results in the consumption of resources that would be better utilized on more critical patients, and under-triage can result in increased mortality and/or morbidity, as victims do not receive the appropriate care. In addition, the same patient may be triaged multiple times as they move through echelons of care. These different echelons may have different objectives in the triage process. Over the years, multiple

triage schemes have been proposed and used, both in exercises and real events. None of these schemes is based on well-defined research, due to the difficulty of carrying out a randomized control study in real events. There has been a concerted effort to apply research findings in a effort to more effectively use resources and thus, improve patient outcomes as well as apply information garnered from after action reports. This presentation reviews the current issues and state of triage for disasters and mass-casualty incidents, drawing on examples from prior events. The ultimate objective of this presentation is to help the responder to better understand the process of triage and apply it to their clinical practice, thereby delivering care in an effective and timely manner.

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**(A259) Objective Triage in the Disaster Setting: Will Children and Expecting Mothers be Triaged Like Others?**

T. Kouliev

Emergency Department, Beijing, China

**Introduction:** The study of disaster triage is made difficult by the complex emotional response of potentially lifesaving intervention that a triage officer must make decisions based on a succinct and efficient algorithm.

**Methods:** We designed a survey of triage professionals in Chicago, Philadelphia, and Beijing to identify sources of emotional bias that lead to failure of the START triage protocol that result in a lack of correlation between triage priority and clinical outcomes.

**Results and Conclusions:** Among our subjects, we observed that a pediatric victim is uniformly overtriaged when compared to less injured victims. We examine the possible reasons behind the consistency of this selection, explain the means we used to minimize bias, and propose avenues for further research and clinical implementation of better triage systems and guidelines.

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**(A260) Triage Decision-Making in Intoxication**A. Mirbaghi,<sup>1</sup> G.R. Mohammadi,<sup>2</sup> M. Asghari<sup>3</sup>

1. School of Nursing, Mashhad, Iran
2. School of Nursing, Neishabour, Iran
3. School Of Nursing, Gonabad, Iran

**Background and Aims:** Decision-making is the major component in triaging EDs patients. EDs Triage systems have applied different approaches to triaging intoxicated patients. Pros & Cons for these approaches need to be identified. Aim is to analysis management of intoxicated patients during various triage process.

**Methods:** Critical review includes five triage systems, Emergency Severity Index, Australasian Triage Scale, Canadian triage and Acuity Scale, Manchester Triage System and 5-tier Triage protocol. These systems have been analyzed via meta-synthesis in terms of evidence-based criteria, inclusiveness, specific application and practicability.

**Results:** General physiologic signs & symptoms were the gold standard for determining acuity in patients that have been applied by all triage systems. Conscious level, air way, respiratory status and circulation assessment were identified as major criteria in decision-making. 5-tier Triage protocol showed the

most comprehensiveness characteristics to prioritizing intoxicated patients.

**Discussion:** Resources necessary for evidence-based performance to support nursing decisions in triaging intoxicated patients needs fundamentally to be developed. It's necessary to develop National Triage Scale to approach intoxicated patients effectively.

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### (A261) Evolution of Triage Services in the Emergency Department Aga Khan University Hospital- Karachi

*M. Khursheed, K. Ejaz, F. Hanif*  
Emergency Medicine, Karachi, Pakistan

The history of triage started from the French battle field. In-hospital ED triage started in early 1960's from Baltimore. It is now an essential component of modern ED. Triage is not only to sort out patients as per their criticality, but it also serves the purpose of streamlining the patients so that the patient receives right treatment at the right time in the appropriate area. It helps to manage the ED overcrowding by better flow of patients. AKUH-ER experience of triage dates back to the year 2000, when triage was conducted by physicians and there used to be a manual documentation of patient's particulars such as complaints, vitals and BP. With the expansion of AKU-ED in 2008 responsibility of triage shifted to nursing services. Triage policy was drafted and implemented and for guidance and uniformity of care, triage protocols were developed. Another important development is replacement of register with triage data entry software. This help us to monitor some indicators like number of patients triaged, the time between triaging and actual bed assignment, triage categorization, length of stay, dispositions and return visits. The available information now helps us to make decisions based on evidence and also paves the way for future direction.

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### (A262) Use of Portable Ultrasound in Triage in Field Settings

*H.Y. Yuen,<sup>1</sup> E.Y.Y. Chan,<sup>1</sup> A.T. Abuja<sup>2</sup>*

1. Humanitarian Initiative, School of Public Health and Primary Care, Shatin, Hong Kong
2. Imaging and Interventional Radiology, Shatin, Hong Kong

Speed and accuracy are major considerations in triage in emergency field settings. Traditional physical examination techniques often are limited in detecting the true nature and full extent of internal visceral injuries, for which delayed recognition and treatment may lead to catastrophic results. Ultrasound has a well-established role in the rapid initial assessment of intra-abdominal pathologies, including trauma, and contemporary portable ultrasound machines are available for use in the field. This presentation will introduce the basic principles of diagnostic ultrasound and its use in emergency settings. Common clinical applications and pathologies and potential limitations and pitfalls also will be discussed with image illustrations.

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### (A263) Electronic Triage System

*N.A. Bajow,<sup>1</sup> S.M. Alkhalil<sup>2</sup>*

1. King Fahed College, Riyadh, Saudi Arabia
2. Industrial Engineering, Amman, Jordan

Most emergency medical response systems rely on paper triage tags and clipboards to share information during mass-causality incidents (MCIs). However, this procedure has proven labor-intensive, time-consuming, and susceptible to human error. Previous research about electronic triage depend on a small movable device, which can be costly. Therefore, an electronic triage system was developed to facilitate effective patient care during an emergency. In this paper, the design, development, and deployment of an electronic triage system for use by rescuers responding to MCIs and disasters will be discussed. The electronic triage software runs on a small, embedded system with limited memory and computational power that efficiently saves patient records. The software system is easy, user-friendly, can be used with any computer, laptop, or iPhone, and it is applicable in all hospitals. This system includes three interfaces: (1) electronic triage tags depending on the Simple Triage And Rapid Treatment (START) triage protocol; (2) the Sort Triage interface; and (3) the Evacuation interface, which includes hospital information such as the Hospital Treatment Capacity (HTC) and the Hospital Surgical Capacity (HSC). It also includes doctors information and hospitals and doctors can be alerted via e-mail. The system also has a database records file for patients that can be saved then immediately sent to hospitals and rescue centers. The electronic triage system will lay the foundation for reliable and continuously updated network coverage during a MCI. It also will help technologists develop future emergency response systems.

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### (A264) Does the Implementation of Start Triage Criteria in the Emergency Department Reduce Over- and under-Triage of Patients?

*R. Kumar,<sup>1</sup> S. Bhoi,<sup>2</sup> S. Chauhan,<sup>3</sup> T.P. Sinha,<sup>1</sup> G. Adhikari,<sup>2</sup> G. Sharma,<sup>2</sup> K. Shyamla<sup>2</sup>*

1. Emergency Department, New Delhi, India
2. Emergency Medicine, New Delhi, India
3. Department of Emergency Medicine, Trauma Centre, 110029, India

**Background:** Appropriate triage shortens the delay in definitive care. this study examined whether the implementation of START triage criteria in emergency departments (ED) reduces over- and under-triage of patients. The purpose of this study was to examine the impact of START triage criteria on over and under-triage subjects.

**Methods:** The study was performed between 01 January to 15 September 2008. All patients presenting to the ED were recruited. A triage nurse tagged the patients with a red, yellow, and or green wristband, as per START triage protocol. Over-triage was defined as patients who were re-triaged from red (R) to yellow (Y) or Y to green (G) within 30 minutes of arrival. Under-triage was defined as patients re-triaged from Y to R or G to Y within 30 minutes of arrival.

**Results:** Of 25,928 patients, triage was performed for 25,468 (98.2%) subjects. A total of 8,303 were triaged during the morning shift, 6,994 during the evening shift, and 9,978 during the