is to describe the ethical dilemmas, the technical and clinical considerations for such an endeavor. Ethical considerations: providing the most care to the most victims is the dictum of disaster medical management. Lowered standards of care are accepted and often the norm. However, in many moderate and even major disasters, the ability exists to save lives that will certainly be lost otherwise, by providing intensive care including mechanical ventilatory support, or may be provided if the managers so determine. Is it then ethical, to allow certain victims to die when such support may be available? What is the cost-benefit ratio of such a decision? Who should receive this limited resource? The young and healthy? The very sick? The salvageable? The postoperative? For how long? Until the international team leaves? Types of ventilator-dependency in disasters: (1) Primary ventilatory failure, normal lungs, prolonged ventilator dependency, e.g. botulinum toxin; (2) Combined ventilatory and hypoxemic failure, short to medium-term ventilator dependency, e.g. Sarin gas intoxication; (3) Primary hypoxemic failure, parenchymal lung injury, prolonged ventilator dependency, e.g. Anthrax, mustard gas, ricin; (4) Perioperative and prophylactic ventilatory support, short term but unpredictable. Ventilator supply versus demand: (1) Insufficient ventilators for first few hours only, then supplies come in; (2) Insufficient ventilators for days, then national or international relief expected; (3) Insufficient ventilators and no expected supplies. Care environment: (1) ICU, minority of casualties; (2) General floors: inexperienced nursing, medical staff; (3) Insufficient monitoring devices; (4) Insufficient numbers and quality of respiratory therapists; (5) Commercial companies normally providing technical support understaffed. Basic requirements from the ventilators: allows spontaneous ventilation, incorporates some alarms (ideally disconnect and minute volume), made by a reputable and stable company (will be there when the disaster strikes), low cost, user friendly, long shelf life, quick activation from storage, low weight and volume, few spares, few or generic disposables, little and simple maintenance, independent of compressed oxygen (i.e. electric, multiple voltages, long-life battery). The system: Mechanical ventilation is a complete patient care unit comprising: Bed and space, Oxygen supply, Vacuum, Cardiorespiratory monitor, Mechanical ventilator, Nursing staff, Medical staff, Expert consultatory staff, Logistic and technical support staff. Potential mechanical ventilators: (1) BVM or bag-valve-tube; (2) Transport-type, pneumatic or electrical ventilators; (3) Intermediate capability pneumatic, electrical or electronic ventilators; (4) Full capability intensive care ventilators; (5) Single patient use ventilators.

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(A178) Evaluating the Feasibility of Verbal Analogue Scale among Emergency Care Providers in Assessment and Management of Acute Pain in Trauma Victims

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Background: Acute pain assessment and management in trauma victims is often overlooked in emergency department (ED). Visual analogue scale is the preferred scale for assessment and management of pain however, its role in a busy ED is limited. The objective of this study was to evaluate the feasibility of verbal and visual analogue scale among emergency care providers.
Methods: Emergency caregivers were instructed to use both pain scales wherever feasible for assessment, management, and monitoring of pain in 100 non-consecutive alert patients. A separate, pre-tested survey questionnaire addressing the feasibility of each pain scales was surveyed among emergency care providers (emergency physicians, nursing staff). A Likert scale (1 to 5) was assessed for cooperativeness, availability of time for assessment, the format, the peak period feasibility, the monitoring ease and the amount of work load. Binary scale (yes and no) was used to measure the overall utility in assessment and management of pain.
Results: Out of 100 patients enrolled, the verbal analogue score was used in all patients and visual analogue score was used in 30 patients. The average Likert scale score for verbal analogue score questionnaire was 1.7 and the average Likert scale score for visual analogue score questionnaire was 3.9. On the overall utility both scales were found to be useful in all patients.
Conclusions: Both the scales were found to be useful in overall assessment and management of pain. However, there was a favorable trend towards using verbal analogue scale among emergency care providers.

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(A179) A Survey of Rapid Sequence Intubation (RSI) Complications in Immam Hossein Medical Center Carried Out by Emergency Residents

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Introduction: Critically ill patients in emergency department frequently require emergency airway management. This procedure in our ED is carried out by emergency medicine resident with rapid sequence intubation (RSI). This study investigates complications of tracheal intubation carried out in critically ill patients including: (1) hypoxemia and hypotension (2) aspiration and esophageal displacement (3) pneumothorax and right bronchus intubation.
Methods: Data were collected on consecutive intubations carried out by EM residents over a 29 months period. Between 195 patients only 100 patients had including criteria to enter this study. Also we compare the complications and success rate among three level of personnel carrying on the procedure.(first to third year of emergency medicine residency).
Results: 109 consecutive intubations were carried on in 100 patients. Oral translaryngeal intubation was done in all patients. Three intubations required more than 2 attempts and hypoxia occurred in 34 cases. Aspiration was diagnosed by direct vision in 5 cases. Hypotension was found in 5 cases causing death in 3 of them during the intubation or in 30 minutes following the procedure. Esophageal displacement occurred in 10 of the attempts but all were recognized and reintubated. Success rate between three personnel levels are as follow: in first year residency 82% and in second year residency 94% and in third

year residency is 100% ($p = 0.014$).There was not a statistically significant difference among these three groups considering the complications but the success rate should a difference between level 1 and 3 ($p = 0.936$). Multiple attempts did not increase the rate of complications. Mortality were dependent to hypotension ($p = 0.019$) and age ($p = 0.001$).

Conclusion: In our study we did not find the results of RSI to be operator dependent as long as it was done by emergency residents. It is recommended to compare the results of RSI and non- RSI methods in a future.

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(A181) Process Improvement in Disaster Relief: Implementation of a Fast Track in a Haitian Tent Hospital

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Study Objective: To determine if instituting an Emergency Department (ED) fast-track area would increase efficiency in patient flow, improve utilization of limited resources, and identify critical versus non-critical patients during disaster relief in Port au Prince, Haiti.

Methods: A survey was conducted at L'Hôpital de l'Université d'Etat d'Haïti (HUEH) in Port au Prince, Haiti by Emergency physicians and nurses from SUNY Downstate Medical Center on a disaster relief mission following the 2010 earthquake. The following variables were obtained to assess ED effectiveness: number of patients, acuity level, chief complaints, critical interventions, waiting times, length of stay, specialty service coverage and physical plant space. Additionally, existing practitioners were surveyed regarding existing ED practices. ED operation flow maps were created.

Results: The assessment revealed a large volume of low-acuity patients mixed with high-acuity patients without identification of acuity level, time of arrival, or designated area for treatment. Although literature reports routine use of START triage, this was not being implemented in this setting. Results of implementing a fast track area included: (1) Improved identification of patients needing immediate treatment. (2) Increased flow of low acuity patients in designated fast track areas. (3) Improved triage protocols maximized appropriate use of resources, and expedited subspecialty consultation.

Conclusion: By instituting well-accepted, validated patient flow systems and reinforcing communication regarding resources available and the use of geographic space, better management of incoming emergency patients was achieved.

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(A182) Model to Assess Geo-Temporal Spread of Disease by Air Travel from Major World Cities to the United States

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With increasing numbers of international flights and air travelers arriving in the US annually, the rapid spread of communicable diseases has grown. Epidemics of novel infectious diseases have emerged and rapidly spread globally in association with air travel, including the severe acute respiratory syndrome (SARS) outbreak in 2003 and H1N1 in 2009. In order to anticipate and mitigate the consequences of future rapid disease spread, the MITRE Corporation, in collaboration with the (US) Centers for Disease Control and Prevention, developed a risk assessment tool using a Susceptible-Exposed-Infectious-Recovered model and detailed flight and population data. The emergence and spread of prototypic pandemic influenza was simulated based on a theoretical geographical point of origin and its communicability. More than 50 international metropolitan areas were analyzed as potential points of origin to simulate the rapidity of spread to the US. The basic reproduction number (Ro), defined as the average number of persons to whom one infected individual transmits disease in an immune naive population, was varied from 1.4 to 1.9. The starting numbers of infectious persons at each origin also were varied (100 or 500 persons, 5% infectious may travel). Waves were computed as aggregate across metropolitan areas modeled in the US. The visualization of the first pandemic wave was most apparent in simulations of Ro = 1.9, resulting from 500 infectious persons at each origin. More than 50% of origins indicated that aggregate waves peaked around Day 125, while 30% of origins peaked around Day 90. Additionally, the time, in days, from its origin in six continents into the US was compared, and a two-week delay was found from South America compared with other continents. This simulation tool better equips policy makers and public health officials to quickly assess risk and leverage resources efficiently via targeted and scalable border mitigation measures during a rapid global outbreak.

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(A183) Umbrella" in a Small, Developing Country - A Case Report on Pandemic Influenza Preparedness in Bosnia and Herzegovina

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Cooperation between veterinary and public health authorities in Bosnia and Herzegovina and their respective field services has historically been weak and inefficient. As is the case in many countries, animal health and public health fall under separate ministries with animal health the responsibility of the ministry of agriculture and public health the ministry of health. This model has promoted interagency competition for funding for disease surveillance and control. It has also resulted in poor information exchange, lack of efficient utilization of diagnostic resources, and poor harmonization of policies. Political decentralization, established in Bosnia after the Dayton peace agreement, resulted in the lack of a national-level responsibility for animal or public health. This was instead placed at mid-governmental levels. A state (national) veterinary office was created in 2000, but there still remains no national public health agency. The H5N1 Avian Influenza (AI) outbreak which began in Southeast Asia in 2003 and reached Europe in 2005 raised concerns about Bosnia and Herzegovina's (BiH) preparedness to combat pandemic disease.