

## **ACCURACY OF FAST PERFORMED BY SURGICAL RESIDENTS IN BLUNT ABDOMINAL TRAUMA: A CROSS-SECTIONAL STUDY IN A TERTIARY PHILIPPINE GOVERNMENT HOSPITAL**

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### **Introduction:**

Focused Assessment with Sonography for Trauma (FAST) is a widely utilized tool in the early evaluation of blunt abdominal trauma (BAT). While its sensitivity and utility are well documented, diagnostic accuracy remains highly dependent on operator experience. This study investigates the performance of senior surgical residents in conducting FAST examinations within a resource-limited, high-volume trauma setting in the Philippines—a context largely underrepresented in global literature.

### **Material and Method:**

A cross-sectional study was conducted involving 150 BAT patients admitted to a tertiary government hospital from April 2023 to April 2024. All patients underwent FAST performed by senior surgical residents. Results were compared with CT scan and/or intraoperative findings. Diagnostic parameters—including sensitivity, specificity, predictive values, and ROC AUC—were calculated.

### **Results:**

Of the 150 patients, 75% were male, with a mean age of 36 years. FAST yielded a sensitivity of 96.8%, specificity of 64.8%, PPV of 65.9%, NPV of 96.6%, and an overall accuracy of 78%. The AUC was 0.808, indicating good diagnostic performance. FAST missed 30 injuries later confirmed by surgery, but correctly identified 60 out of 62 true positives.

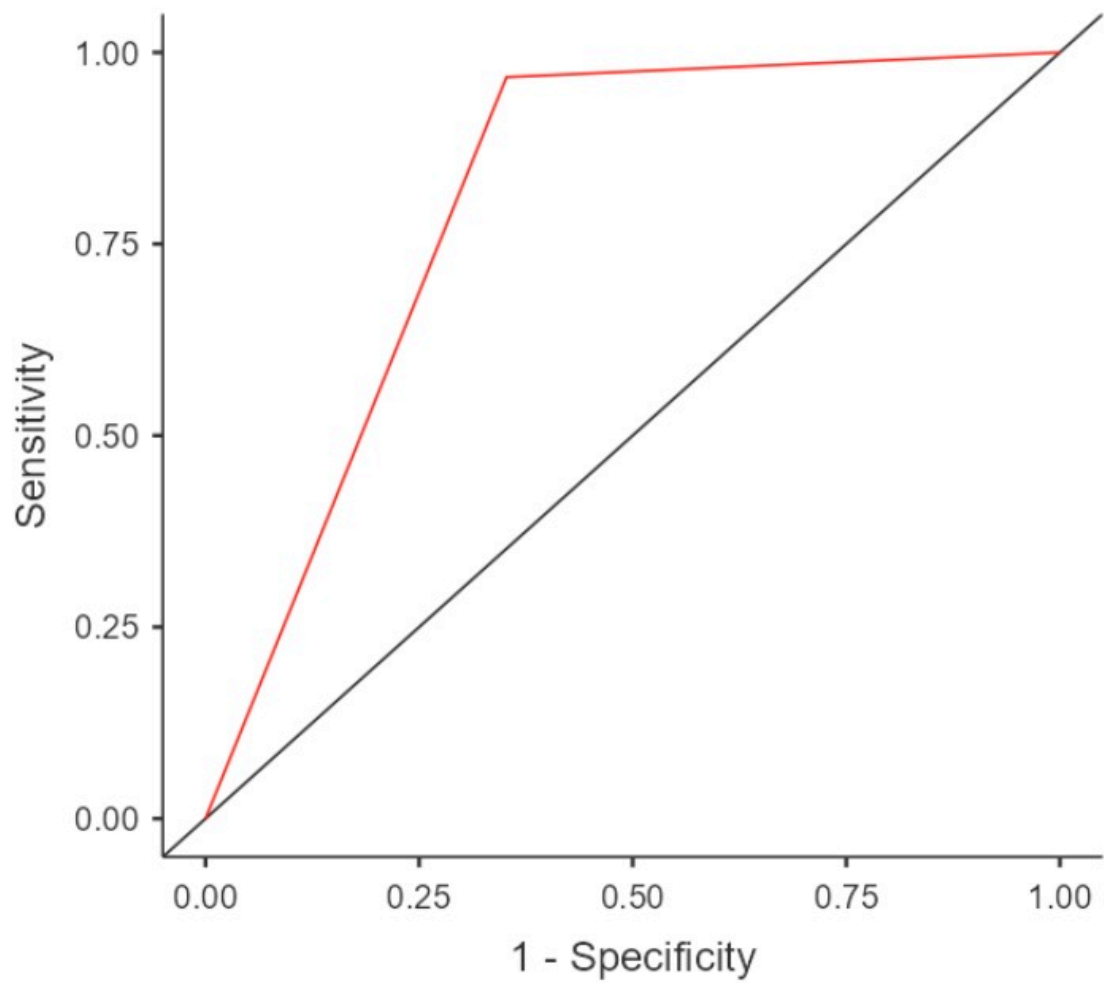
### **Conclusion:**

This study presents original data demonstrating that surgical residents, with proper training, can achieve high sensitivity in performing FAST. In resource-constrained settings, FAST remains a valuable frontline tool. However, confirmatory imaging is essential to address its moderate specificity. Findings support targeted ultrasound training in surgical residency programs globally.

**Figure 1: Accuracy of FAST performed by surgical residents compared to the golden standards.**

AUC= 0.808

ROC Curve



## EVALUATION OF A BASIC PREHOSPITAL TRAUMA TRAINING COURSE FOR VOLUNTEER FIREFIGHTERS IN LIMA, PERU

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### **Introduction:**

Volunteer firefighters in Lima, Peru often provide emergency medical care despite limited formal medical training. To address this gap, the Cuerpo General de Bomberos Voluntarios del Perú implemented a basic prehospital trauma training course comprising 25 academic hours delivered over 3–4 days, combining virtual lectures with in-person, hands-on training. This study reports changes in self-reported confidence among participants as a proxy for the training's educational impact. We predict that firefighters completing the basic prehospital trauma training course will significantly increase confidence in trauma management compared to baseline.

### **Material and Method:**

All firefighters enrolled in the basic prehospital trauma course in June 2025 were invited to participate; informed consent was obtained. Pre- and post-training Likert-scale surveys (1=no knowledge; 5= confident to perform independently) were completed electronically using QR codes. Surveys assessed participants' self-reported confidence in performing 14 trauma-related prehospital tasks. Mean scores were compared using analysis of variance (ANOVA).

### **Results:**

A total of 119 pre- and 96 post-training surveys were completed. Mean confidence scores increased significantly across all 14 tasks ( $P < 0.05$ ). Notable improvements ( $P < 0.001$ ) included: conducting primary trauma assessments (mean confidence increase of +0.6); secondary trauma assessments (+0.7); triage (+0.6); initial stabilization measures (+0.5); recognition of airway obstruction (+0.6); airway management (+0.8); head injury treatment (+0.6); shock recognition (+0.7); and hemorrhage control (+0.6).

### **Conclusion:**

The prehospital trauma training program significantly improved firefighters' self-reported confidence in trauma management skills, suggesting the curriculum effectively enhances perceived competence. Further evaluation will assess long-term retention and impact on clinical performance and patient outcomes.

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## **GLOBAL VARIATION IN PATIENT FACTORS, INTERVENTIONS, AND POST-OPERATIVE OUTCOMES FOR THOSE UNDERGOING TRAUMA LAPAROTOMY: AN INTERNATIONAL PROSPECTIVE OBSERVATIONAL COHORT STUDY**

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### **Introduction:**

The trauma laparotomy is a definitive intervention for life-threatening abdominal injuries and cornerstone of trauma care globally. The ability to perform an emergency laparotomy is a recognised marker of safe and effective surgical care within a health system. However, global variation in the provision, context, and outcomes of the trauma laparotomy is unknown.

### **Material and Method:**

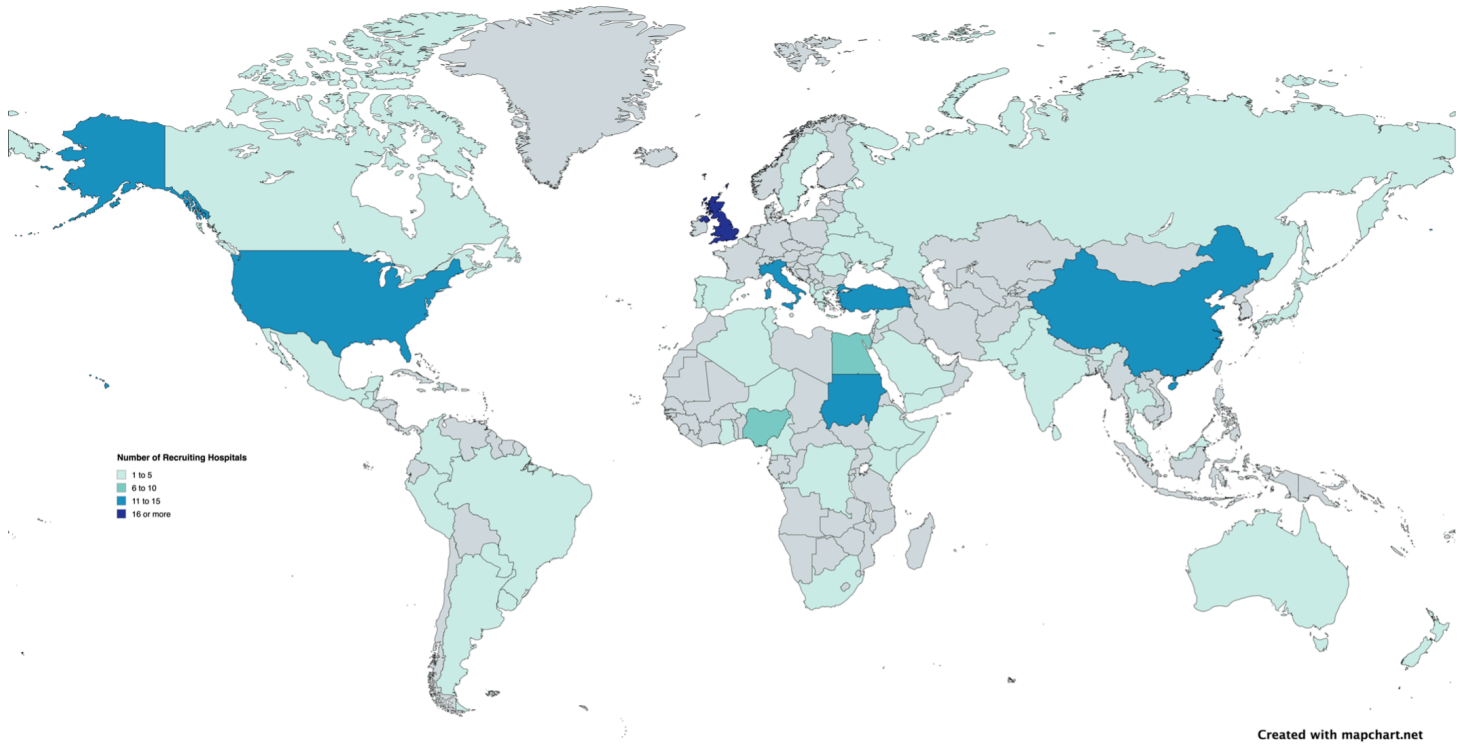
We conducted a prospective international observational study in 187 hospitals across 51 countries between April 2024 and December 2024. Patients who presented with a blunt or penetrating traumatic injury and underwent a laparotomy within 5 days were eligible. Countries were stratified by Human Development Index (HDI) tertile and the primary outcome measure was post-operative mortality at thirty days.

### **Results:**

We included 1769 patients, comprising 31.8% from lower HDI tertile, 40.4% from middle HDI tertile, and 27.8% from upper HDI tertile. Median age was 30 years and 86% were male. Patients from upper HDI countries had a higher Injury Severity Score compared to those in middle or lower HDI countries (median 16 versus 9 and 9 respectively,  $p < 0.001$ ). 195 patients (11.0%) died in-hospital within thirty days of surgery. After adjustment, there was a higher mortality risk in the lower HDI tertile (OR 3.57,  $p < 0.001$ ) and middle HDI tertile (OR 1.89,  $p = 0.030$ ), compared to the upper HDI tertile.

### **Conclusion:**

Patients undergoing a trauma laparotomy in lower HDI settings were less severely injured and had a higher risk of death. There remains an opportunity to improve trauma care globally and expanding access must be matched by the development of quality services.



## EVALUATION OF THE REHABILITATION OF POST-ICU PATIENTS AND THE POTENTIAL FOR INTEGRATING MOBILE HEALTH SOLUTIONS FOR FOLLOW-UP

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### **Introduction:**

Leaving the ICU is often just the beginning of a long recovery journey. Many survivors experience significant physical, social and psychological challenges that often lead to poor recovery outcome, yet most are discharged without structured follow-up. In Cameroon, rehabilitation after critical illness remains limited. This study aimed to assess the rehabilitation status of ICU survivors and explore the feasibility of using mobile health (mHealth) tools to support post-discharge follow-up.

### **Material and Method:**

We conducted a retrospective, cross-sectional mixed methods study. The WHOQOL-BREF tool was used to assess quality of life as a proxy for rehabilitation status. In-depth interviews with ICU survivors (or their primary caregivers) and healthcare providers were conducted to explore barriers and perceptions surrounding mHealth follow-up. Quantitative data were analysed using R (version 4.2.3) and RStudio (version 2023.6.1.524). Qualitative data were analysed thematically using Braun and Clarke's six-step framework.

### **Results:**

Among 482 discharged ICU patients, 369 (76.6%) were not referred to any form of rehabilitation. We successfully contacted 350 individuals (72.6%), of whom 297 (84.9%) were alive. WHOQOL-BREF scores were lowest in the environmental (mean  $48.3 \pm 14.7$ ) and psychological (mean  $49 \pm 17.4$ ) domains. Thematic analysis identified barriers such as financial constraints, lack of structured discharge planning, low digital literacy, and limited infrastructure. Despite these challenges, both patients and healthcare workers expressed openness to simple mHealth solutions, particularly SMS-based reminders in local languages and involving caregivers.

### **Conclusion:**

Post-ICU rehabilitation remains a neglected area. mHealth tools offer a feasible, culturally acceptable solution to improve follow-up and support recovery among ICU survivors.

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## **IMPACT OF N-ACETYLCYSTEINE USE IN THE MANAGEMENT OF TRAUMATIC LOWER EXTREMITY VASCULAR INJURY - A PILOT RANDOMISED CONTROLLED TRIAL.**

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### **Introduction:**

N-acetyl cysteine (NAC) known as a potent antioxidant and having cellular healing properties, showed improve amputation stump perfusion and healing in patients with persistent limb-threatening ischaemia. This randomised controlled trial was conducted to compare the rate of limb salvageability and other morbidities at 30 days post injury between 5 day NAC treatment and the placebo group

### **Material and Method:**

This study was a Pilot Prospective, Randomized controlled Trial. Patients who were scheduled for post trauma lower extremity vascular intervention were included in the study based on inclusion and exclusion criteria. The study subjects were randomized to two groups. Group A were treated with N-acetylcysteine 1200 mg iv bd in 100ml DNS over 30 – 60 mins for 5days and patients in Group B were given Dextrose normal saline. In post operative clinical assessment patients were evaluated for limb salvageability, surgical site infection (SSI), need for surgical debridement, and the day of fasciotomy wound closure post-surgery 30 days

### **Results:**

Total 37 patients were enrolled, 19 in group A and 18 in group B. The mean of age (years) of our study population was 29.83 (SD 11.47). Limb salvageability was not significantly different (78.95 % v/s 55.56%,  $p=0.170$ ). SSSI ( $P=0.45$ ), need of surgical debridement ( $p=0.53$ ) and mean days of fasciotomy closure ( $p=0.05$ ) were also not statistically significant. There was no reported adverse event with NAC.

### **Conclusion:**

This study showed NAC safety as an adjunct in acute traumatic limb vascular injuries management. There was improvement in limb salvageability though statistically not significant.

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## INEQUALITY IN EXPERIENTIAL QUALITY OF CARE FOR INJURED PATIENTS ACROSS FOUR LOW- AND MIDDLE-INCOME COUNTRIES

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### **Introduction:**

Experiential quality of care reflects how well healthcare facilities respond to patients' non-clinical needs and preferences, evaluating performance beyond clinical quality. Despite its impact on trust, service uptake and health outcomes, evidence from low- and middle-income countries (LMICs) remains limited, particularly regarding its inequalities and determinants.

### **Material and Method:**

Patients with moderate to severe injuries admitted to 19 hospitals across Pakistan, Ghana, Rwanda, and South Africa were enrolled and followed until discharge. Experiential quality was assessed using the Inpatient-Patient Assessment of Health Care (I-PAHC). Percentage achievable scores were calculated, and associations with patient, injury, and hospital characteristics were examined using two-level linear regression.

### **Results:**

A total of 7,408 patients completed the I-PAHC. The mean age was 32.7 years (SD: 17.9); 23% were female. The mean I-PAHC score was 78% (SD: 15.5), indicating moderate experiential quality. Higher education was associated with better scores, while lower scores were seen in patients with polytrauma, those admitted only to the emergency department, and those treated in urban hospitals. Age, sex, wealth, injury severity, hospital type (secondary or tertiary), and length of stay were not significantly associated. Patients in Pakistan reported lower scores compared to other countries.

### **Conclusion:**

Although experiential quality of care was moderate, the notable disparities across facilities, countries, and patient and injury characteristics may contribute to inequities in trust and care-seeking behaviours, and consequently affect health outcomes in injured patients. Addressing these gaps is essential to advancing equitable, patient-centered care in low- and middle-income settings.

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## EVALUATION OF SHIFTS IN VOLUNTEER FIREFIGHTERS' PERCEPTIONS OF TRAUMA CARE TOPICS FOLLOWING A STRUCTURED EDUCATIONAL INTERVENTION IN LIMA, PERU

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### **Introduction:**

In Peru, volunteer firefighters deliver substantial emergency medical care despite limited formal training. To address this gap, the Cuerpo General de Bomberos Voluntarios del Perú developed a hybrid, multi-day prehospital trauma course with 25 hours of virtual lectures and hands-on practice. This study evaluated changes in participants' knowledge, preparedness, and communication before and after the course.

### **Material and Method:**

All June 2025 course trainees were invited to participate; informed consent was obtained. Pre- and post-course electronic surveys, administered via REDCap, included nine five-point Likert scale questions assessing trauma knowledge, readiness, and team communication. Mean score differences were analyzed using t-tests.

### **Results:**

One hundred nineteen pre-course and ninety-six post-course surveys were analyzed. Seven of nine items showed significant improvement ( $P < 0.001$ ). No change was found in believing additional training would be beneficial or in feeling anxious as a trauma team member. Significant increases included self-reported adequate knowledge of trauma care (+0.5, 95% CI [0.32, 0.75]), adequate training for typical emergencies (+0.6, 95% CI [0.37, 0.86]), familiarity with standard protocols (+0.6, 95% CI [0.38, 0.84]), preparedness to handle patients in the field (+0.4, 95% CI [0.22, 0.68]), recognition of room for skill improvement (+0.4, 95% CI [0.18, 0.63]), ability to identify patient needs and communicate with the team (+0.4, 95% CI [0.18, 0.64]), and ability to assess injuries effectively (+0.5, 95% CI [0.28, 0.75]).

### **Conclusion:**

This hybrid trauma course significantly improved volunteer firefighters' perceived trauma care knowledge, preparedness, and communication. It may be a valuable component of broader efforts to strengthen prehospital trauma care in Peru.

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