



African Federation for Emergency Medicine  
**African Journal of Emergency Medicine**

www.afjem.com  
 www.sciencedirect.com



**ORIGINAL RESEARCH**

**Upper extremity injury management by non-physician emergency practitioners in rural Uganda: A pilot study**



*Prise en charge des blessures des membres supérieurs par des urgentistes non médecins en zone rurale en Ouganda: Étude pilote*

**Daniel S. Frank<sup>a,b,\*</sup>, Katie Dunleavy<sup>b</sup>, Rashidah Nambaziira<sup>b</sup>, Irene Nayebare<sup>c</sup>, Bradley Dreifuss<sup>b,d</sup>, Mark Bisanzo<sup>b,e</sup>**

<sup>a</sup> University of Massachusetts Medical School, Worcester, MA, USA

<sup>b</sup> Global Emergency Care Collaborative, Rukungiri, Uganda

<sup>c</sup> Karoli Lwanga Hospital, Rukungiri, Uganda

<sup>d</sup> Department of Emergency Medicine, University of Arizona, Tucson, AZ, USA

<sup>e</sup> Department of Emergency Medicine, University of Massachusetts Memorial Medical Center, Worcester, MA, USA

Received 20 August 2013; revised 2 December 2013; accepted 13 December 2013; available online 17 January 2014

**Introduction:** Improper management of and resultant poor outcomes from upper extremity injuries can be economically devastating to patients who rely on manual labour for survival. This is a pilot study using the Quick DASH Survey (disabilities of arm, shoulder and hand), a validated outcome measurement tool. Our objective was to assess functional outcomes of patients with acute upper extremity injuries who were cared for by non-physician clinicians as part of a task-shifting programme.

**Methods:** This pilot study was performed at the Karoli Lwanga Hospital Emergency Centre (EC) in Uganda. Patients were identified retrospectively by querying the EC quality assurance database. An initial list of all patients who sustained traumatic injury (road traffic accident, assault) between March 2012 and February 2013 was narrowed to patients with upper extremity trauma, those 18 years and older, and those with cellular phone access. This subset of patients was called and administered the Quick DASH. The results were subsequently analysed using the standardised DASH metrics. These outcome measures were further analysed based upon injury type (simple laceration, complex laceration, fracture and subluxation).

**Results:** There were a total of 25 initial candidates, of which only 17 were able to complete the survey. Using the Quick DASH Outcome Measure, our 17 patients had a mean score of 28.86 (range 5.0–56.8).

**Conclusions:** When compared to the standardised Quick DASH outcomes (no work limitation at 27.5 vs. work limited by injury at 52.6) the non-physician clinicians appear to be performing upper extremity repairs with good outcomes. The key variable to successful repair was the initial injury type. Although accommodations needed to be made to the standard Quick DASH protocol, the tool appears to be usable in non-traditional settings.

**Introduction:** La mauvaise prise en charge des blessures des membres supérieurs et les mauvais résultats enregistrés sur le plan médical peuvent avoir des conséquences désastreuses pour les patients comptant sur leurs compétences manuelles pour leur survie. Cette étude est une étude pilote utilisant le questionnaire Quick Dash (invalidité des bras, des épaules et des mains), un outil de mesure du résultat validé. Notre objectif était d'évaluer les résultats fonctionnels chez les patients souffrant de blessures graves des membres supérieurs pris en charge par du personnel soignant non médecin dans le cadre d'un programme de délégation des tâches.

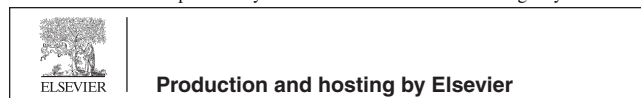
**Méthode:** Cette étude pilote a été menée au service d'urgence de l'hôpital de Karoli Lwanga, en Ouganda. Les patients étaient identifiés de manière rétrospective en interrogeant la base de donnée d'assurance qualité du service d'urgence. Une liste initiale des patients ayant souffert de blessures traumatiques (accidents de la route, agressions) entre mars 2012 et février 2013 a été réduite aux patients souffrant de traumatismes des membres supérieurs, âgés de 18 ans et plus et disposant d'un accès aux services de téléphonie mobile. Ce sous-ensemble de patients a été contacté et le questionnaire Quick Dash leur a été soumis. Les résultats ont ensuite été analysés au moyen de la mesure Dash standardisée. Ces mesures des résultats ont encore été analysées en fonction du type de blessure (lacération simple, lacération complexe, fracture et subluxation).

**Résultat:** Sur un total initial de 25 candidats, 17 ont pu répondre au questionnaire. En utilisant la mesure de résultat Quick DASH, nos 17 patients obtenaient une note moyenne de 28,86 (fourchette allant de 5 à 56,8).

**Conclusion:** Par rapport aux résultats standardisés du questionnaire Quick DASH (pas de limitation professionnelle à 27,5 contre limitation professionnelle en raison de la blessure à 52,6), le personnel soignant non médecin traite les problèmes associés aux membres supérieurs avec de bons résultats. Bien qu'il soit nécessaire d'adapter le protocole standard du questionnaire Quick DASH, l'outil semble utilisable dans des environnements non traditionnels.

\* Correspondence to Daniel S. Frank. Unit D, Newton 02459, MA, USA. [daniel.frank@umassmed.edu](mailto:daniel.frank@umassmed.edu)

Peer review under responsibility of African Federation for Emergency Medicine.



**African relevance**

- EM task shifting is a growing trend in Africa and throughout the developing world.
- Modified outcome measurement metrics provide QA in developing EM markets.

- Successful injury management in rural Africa is the ability to return to work.
- Novel utilization of an outcome measurement survey to assess post-injury return to work.

## Introduction

In many middle and low-income countries there is a shortage of medical providers, especially in rural areas.<sup>1</sup> This shortage of skilled providers often results in delayed or absent care, which drives unnecessary morbidity and mortality. This is especially common in emergency situations. Since nurses are relatively plentiful in these settings, some countries have adopted “task-shifting” as a way to expand access to care. “Task shifting” entails training a non-physician clinician to perform tasks formerly delegated to specialist physicians.<sup>1</sup> This methodology is already well established in Obstetrics, Orthopaedics, Surgical Care and HIV care.<sup>2</sup> There are reports of advance practice nurses providing acute care in high income settings.<sup>3–5</sup> However, there are only isolated reports of it being applied to the acute care setting in low-income countries.<sup>1,6,7</sup>

In response to this need, Karoli Lwanga Hospital (a non-profit Catholic Hospital, located in the rural Rukungiri District of southwestern Uganda) in partnership with the Global Emergency Care Collaborative (GECC) opened the first rural Emergency Centre (EC) in Uganda. In July 2009, with collaboration and input from the Hospital Management Team and District Health Office, a training programme in emergency care was instituted by GECC. The goal of the programme is to train selected hospital nurses to independently assess and treat patients with emergent conditions. This training combines classroom and clinical work as well as specialised education on how to carry out procedures necessary for proper emergency care. Once trained, the providers are designated as Emergency Care Practitioners (ECPs).

Given the large trauma burden, providers in rural sub-Saharan Africa are regularly called upon to repair a broad array of upper extremity injuries. These include simple lacerations (defined as single or multiple open wounds without high intensity trauma, associated fractures or extensive soft tissue injury), complex lacerations (defined as injuries in which the tissues are torn from blunt or penetrating forces, involve deeper tissues and/or have jagged or irregular edges requiring layered closures or extensive debridement), fractures and dislocations. In rural agrarian communities, like the one in this study, upper extremity injuries can have a devastating economic impact on individuals and the larger social group if inappropriately managed.<sup>8–10</sup> Hence, appropriate management of upper extremity injuries represents a critical patient oriented outcome and an important indicator of successful task-shifting. This patient management is also an important economic safeguard for families who rely on farming for income and personal food production, as well as the larger community dependent on the farmers.

To our knowledge, this is the first published report that examines the ability of non-physician clinicians to repair upper extremity injuries in rural Africa. The primary aim of this study was to generate pilot data on the success of ECP management of upper extremity injuries.

## Methods

The nursing curriculum in Uganda is based upon anatomy, pathophysiology and pharmacology. Neither “enrolled” nor “registered” nurses receive training in either procedural techniques or surgical skills. Hence, as part of the comprehensive emergency care training programme, the ECPs undergo training in trauma management, wound care, regional and local anaesthetic techniques, and a variety of procedural skills. The efficacy of the ECP directed procedural sedation was investigated previously.<sup>6</sup> An evaluation of surgical repairs was considered the next logical step.

The ECP participants in the study had between 0 and 3 years of experience, with the majority having less than 1 year. Each received an extensive written curriculum in trauma assessment and treatment as well as wound evaluation and care. These materials were furthered by didactic lectures and regularly scheduled written exams. Additionally, the Junior ECPs must log their procedures and have a sufficient number of each type of procedure before they are considered competent to perform the procedure independently.

In this study all injuries requiring repair were initially assessed by an on duty ECP. When the initial assessment was done by a member of the junior class, their findings were reported to a Senior ECP and/or a visiting GECC Emergency Physician. The injury list included simple lacerations, complex lacerations, dislocations, and fractures. Following the assessment, the actual surgical repairs were performed solely by the responsible ECP with regularly scheduled follow-up for wound assessment and suture removal. All patients were given a tetanus booster and placed on antibiotics and/or anti-rabies prevention when appropriate.

This was a retrospective case series involving patients with upper extremity injuries evaluated and managed in the Karoli Lwanga Emergency Centre by ECPs. All trauma patients included in the study were seen at the Karoli Lwanga EC between March of 2012 and February of 2013. The start date was selected as it coincided with the completed conversion from the old quality assurance database (QAD), (Microsoft Excel®), to the newly designed Microsoft Access Database. The end date was used as a way of drawing in participants that had at least 30 days of recovery from the initial presentation and treatment.

The initial patient list was generated using the QAD and narrowed as in Fig. 1. This QAD was designed to monitor the care provided by ECPs to ensure that it met appropriate standards. This was deemed necessary prior to the inception of the ECP training programme because task-shifting in emergency care remains understudied and hence of unclear benefit. Review of the database was approved via the Institutional Review Board at Mbarara University of Science and Technology, the University of Massachusetts and the Uganda National Council of Science and Technology.

The Quick DASH (disabilities of arm, shoulder and hand) is comprised of 11 questions, each with a bounded Likert Scale (1–5). The validity of the Quick DASH is well established.<sup>11</sup> Quick DASH scores were calculated by standard protocol.<sup>11</sup> The lower the score, the better is the outcome for the patient. In known groups, scores < 25.4 were consistent with no limitations in activity and scores < 27.5 were consistent with no limitations in work.<sup>11</sup> Similarly, in known groups scores > 48.6

Download English Version:

<https://daneshyari.com/en/article/3222762>

Download Persian Version:

<https://daneshyari.com/article/3222762>

[Daneshyari.com](https://daneshyari.com)