Global Research Highlights

*Editor’s note:* *Annals* has partnered with a small group of selected journals of international emergency medicine societies to share from each a highlighted research study, as selected monthly by their editors. Our goals are to increase awareness of our readership to research developments in the international emergency medicine literature, promote collaboration among the selected international emergency medicine journals, and support the improvement of emergency medicine world-wide, as described in the WAME statement at [http://www.wame.org/about/policy-statements#Promoting%20Global%20Health](http://www.wame.org/about/policy-statements#Promoting%20Global%20Health). Abstracts are reproduced as published in the respective participating journals, and are not peer reviewed or edited by *Annals.*

## A systematic review of burn injuries in low- and middle-income countries: Epidemiology in the WHO-defined African Region

Rybarczyk MM, Schafer JM, Elm CM, Sarvepalli S, Vaswani PA, Balhara KS, Carlson LC, Jacquet GA. A systematic review of burn injuries in low- and middle-income countries: Epidemiology in the WHO-defined African Region. Afr J Emerg Med. 2017;7:30-37.

**Introduction:** According to the World Health Organization (WHO), burns result in the loss of approximately 18 million disability adjusted life years (DALYs) and more than 250,000 deaths each year, more than 90% of which are in low- and middle-income countries (LMICs). The epidemiology of these injuries, especially in the WHO-defined African Region, has yet to be adequately defined.

**Methods:** We performed a systematic review of the literature regarding the epidemiology of thermal, chemical, and electrical burns in the WHO-defined African Region. All articles indexed in PubMed, EMBASE, Web of Science, Global Health, and the Cochrane Library databases as of October 2015 were included.

**Results:** The search resulted in 12,568 potential abstracts. Through multiple rounds of screening using criteria determined a priori, 81 manuscripts with hospital-based epidemiology as well as eleven manuscripts that included population-based epidemiology were identified. Although the studies varied in methodology, several trends were noted: young children appear to be at most risk; most individuals were burned at home; and hot liquids and flame are the most common aetiologies.

**Discussion:** While more population-based research is essential to identifying specific risk factors for targeted prevention strategies, our review identifies consistent trends for initial efforts at eliminating these often devastating and avoidable injuries.

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**Emergencias**

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*Official Journal of the Spanish Society of Emergency Medicine*

**Ethyl chloride aerosol spray for local anesthesia before arterial puncture: randomized placebo-controlled trial**

Ballesteros-Peña S, Fernández-Aedo I, Vallejo-De la Hoz G. Ethyl chloride aerosol spray for local anesthesia before arterial puncture: randomized placebo-controlled trial. Emergencias. 2017;29:161-166.

**Objective:** To compare the efficacy of an ethyl chloride aerosol spray to a placebo spray applied in the emergency department to the skin to reduce pain from arterial puncture for blood gas analysis.

**Methods:** Single-blind, randomized placebo-controlled trial in an emergency department of Hospital de Basurto in Bilbao, Spain. We included 126 patients for whom arterial blood gas analysis had been ordered. They were randomly assigned to receive application of the experimental ethyl chloride spray (n=66) or a placebo aerosol spray of a solution of alcohol in water (n=60). The assigned spray was applied just before arterial puncture. The main outcome variable was pain intensity reported on an 11-point numeric rating scale.

**Results:** The median (interquartile range) pain level was 2 (1–5) in the experimental arm and 2 (1–4.5) in the placebo arm (P=.72).

**Conclusion:** Topical application of an ethyl chloride spray did not reduce pain caused by arterial puncture.

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**Emergency Medicine Journal**

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*Official Journal of the Royal College of Emergency Medicine*

**Clinical relevance of pharmacist intervention in an emergency department**

Pérez-Moreno MA, Rodríguez-Camacho JM, Calderón-Hernanz B, Comas-Díaz B, Tarradas-Torras J. Clinical relevance of pharmacist intervention in an emergency department. Emerg Med J. 2017; http://dx.doi.org/10.1136/emermed-2015-204726.

**Objectives:** To evaluate the clinical relevance of pharmacist intervention on patient care in emergencies, to determine the severity of detected errors. Second, to analyse the most frequent types of interventions and type of drugs involved and to evaluate the clinical pharmacist’s activity.

**Methods:** A 6-month observational prospective study of pharmacist intervention in the Emergency Department (ED) at a 400-bed hospital in Spain was performed to record interventions carried out by the clinical pharmacists. We determined whether the intervention occurred in the process of medication reconciliation or another activity, and whether the drug involved belonged to the High-Alert Medications Institute for Safe Medication Practices (ISMP) list. To evaluate the severity of the errors detected and clinical relevance of the pharmacist intervention, a modified assessment scale of Overhage and Lukes was used. Relationship between clinical relevance of pharmacist intervention and the severity of medication errors was assessed using ORs and Spearman’s correlation coefficient.

**Results:** During the observation period, pharmacists reviewed the pharmacotherapy history and medication orders of 2984 patients. A total of 991 interventions were recorded in 557 patients; 67.2% of the errors were detected during medication reconciliation. Medication errors were considered severe in 57.2% of cases and 64.9% of pharmacist intervention were considered relevant. About 10.9% of the drugs involved are in the High-Alert Medications ISMP list. The severity of the medication error and the clinical significance of the pharmacist intervention were correlated (Spearman’s $p=0.728$, $p<0.001$).

**Conclusions:** In this single centre study, the clinical pharmacists identified and intervened on a high number of severe medication errors. This suggests that emergency services will benefit from pharmacist-provided drug therapy services.