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Trauma capacity in the central plateau department of Haiti



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ABSTRACT

Background: Surgical burden is a large and neglected global health problem in low- and middle-income countries. With the increasing trauma burden, the goal of this study was to evaluate the trauma capacity of hospitals in the central plateau of Haiti.

Materials and methods: The World Health Organization Emergency and Essential Surgical Care survey was adapted with a focus on trauma capacity. Interviewers along with translators administered the survey to key hospital staff.

Results: Seven hospitals in the region were surveyed. Of the hospitals surveyed, 3/7 had functioning surgical facilities. None of the hospitals had trauma registries. 71% of the hospitals had no formal trauma guidelines. 2/7 hospitals had a general surgeon available 100% of the time. All surgical facilities had oxygen cylinders available 100% of the time, but three of the primary level hospitals only had it available 51%–90% of the time. Intubation equipment was available at 57% of the facilities. Ventilators were only available in the operating room. Only the largest hospital had a computed tomography scanner. Other hospitals (66%) had a functioning x-ray machine 76%–90% of the time. Hospitals (57%) had an ultrasound machine. The most common reasons for referral were lack of appropriate facilities and supplies at the primary level care centers or lack of trained personnel at higher-level facilities.

Conclusions: Trauma capacity in the central plateau of Haiti is limited. There is a great need for more personnel, trauma training at all staff levels, emergency care guidelines, trauma registries, and imaging equipment and training, specifically in ultrasonography. To accomplish this, coordination is needed between the Haitian government and local and international nongovernmental organizations.

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1. Introduction

Traumatic injuries in low- and middle-income countries (LMICs) have long been recognized as a neglected epidemic [1]. This is largely attributed to the progressive industrialization of these countries and the increasing use of motorized transport

without a parallel increase in infrastructure and safety legislation. The 2010 Global Burden of Disease Study showed that traumatic injuries cost the global population over 300 million years of healthy life every year [2]. This burden is not shared equally among the developed and developing world with 90% of the 5 million annual trauma-related deaths occurring in

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LMICs [3]. Trauma most commonly affects young adults during their most productive years, and the death or long-term disability of these household contributors has a tremendous economic impact on families in these countries [4].

Multiple barriers to the emergent and surgical treatment of the injured have been identified in LMICs. These barriers include inadequate infrastructure, limited physical resources, and insufficient numbers of trained health-care providers [5]. Until recently these barriers were perceived as too costly to overcome, but emerging research has shown emergency and essential surgical care to be just as cost effective as other accepted public health interventions [6]. In 2005, the World Health Organization (WHO) founded the Global Initiative in Emergency and Essential Surgical Care to address deficiencies in access to emergency and surgical care in LMICs. As part of this initiative, the Tool for Situational Analysis to Assess Emergency and Essential Surgical Care was developed to evaluate the capacity of trauma care in LMICs [7]. The survey has been successfully implemented in several countries to identify specific gaps in trauma care [8,9].

Haiti is the poorest country in the Western Hemisphere, and similarly to other developing nations it lacks the infrastructure to handle a high-trauma burden [10]. In 2004, the WHO reported that Haiti lost over 2000 disability-adjusted life years to unintentional injuries and had an injury-related

mortality rate of 78.6 per 100,000 compared with that of 39.2 per 100,000 in the United States [11]. As highlighted by the 2010 earthquake, Haiti's healthcare system is not equipped to handle the volume and severity of trauma cases commonly seen in developing countries and frequently must rely on the international medical community for assistance [10]. The Central Plateau, one of ten Haitian departments, had an estimated population of 679,000 in 2009 [12]. Little is known about the trauma burden in this department because, like the rest of Haiti, there is no trauma registry for documentation. With 82% of the central plateau's population living in rural areas with little access to emergency services, improvements in trauma care could greatly improve outcomes. In this study, health-care facilities in the central plateau are surveyed with the WHO assessment tool to identify areas of the trauma care system in need of improvement.

2. Methods

A cross-sectional analysis was performed of seven primary, secondary, and tertiary health-care facilities in Haiti's central plateau using a modified version of the WHO Tool for Situational Analysis to Assess Emergency and Essential Surgical Care, a comprehensive questionnaire to evaluate a health



Figure – Central Plateau of Haiti. (Color version of figure is available online.)

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