health and medical emergency response protocols or programs have prepared health responses to protect the health of communities in such events.

Aim: This study performed a retrospective health risk assessment on two recent events where such impacts unfolded, namely the 2015 southeast Equatorial Asia smoke haze disaster and the 2016 Melbourne thunderstorm asthma epidemic. The primary objective was to test if the characterization of health risk could have been identified earlier and catastrophic levels of mortality and morbidity reduced.

Methods: The study employed a two-staged retrospective health risk characterization assessment. The first step applied the UNISDR (2017) framework for health risk disaster assessment combing a thematic and targeted word literature review to identify the level of health and medical risk knowledge prior to each event. The second stage applied a risk characterization matrix developed using ISO and Australian Health Department semi-quantitative health assessment standards.

Results: The 2015 southeast Equatorial Asia smoke haze disaster risk assessment was characterized as an extreme health risk and the 2016 Melbourne thunderstorm asthma epidemic characterized as a high health risk.

Discussion: Innovative medical response approaches are urgently needed to mitigate the growing health risk to whole populations from natural hazard disasters compounded by deteriorating natural ecosystems and the physical environment. This requires emergency medical and health teams to recognize the two-tailed human health risk from natural disaster hazards, along with investment in advanced planning, environmental risk surveillance, specialist training, technical guidance, and multi-sector coordination.

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An Integral Hospital Response Protocol for Emergencies and Disasters from the Emergency Department

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Introduction: Mexico has suffered multiple social and natural events that tested its response capacity. Hospital units of the third level of care are an axis of response and a central reference. Guaranteeing their integral and organized response promotes risk prevention and mitigation strategy in emergencies and disasters.

Aim: To analyze the national and international regulations and the existing documents about emergency and disasters related to a hospital with the identification of the critical actors in the response.

Methods: This research consists of a cross-sectional and descriptive study with a mixed methodology (qualitative and quantitative), that generates a protocol for response in a third level care hospital. Quantitative analysis was carried out using central tendency measurements based on a surveys (training, knowledge) performed in the hospital services that provide a critical response with the ED in emergencies or disasters (ED, ICU, Supplies, Nursing, Operating Room, Security, Hospital Admission, Crisis Committee). In the quantitative analysis, the staff were interviewed about their experience in responding to previous events (to the same critical services), recognizing importance and points of improvement with a discourse analysis methodology.

Results: With the information collected and based on the protocols of Safe Hospital program (PAHO/WHO) we generated a protocol organized by the ED that involves massive victims.

Discussion: Regulations oblige hospital units to have protocols of action in critical situations linked to Safe Hospital program, so it is a great tool for planning. All the surveyed personnel consider that it is important to have a plan that allows for immediate steps to ensure quality and timely patient care, considering it an ethical and social obligation. Analysis suggests that continuous training and the contribution of an operational plan per service provide security and better prognosis to the victims. The protocol includes all critical response services with a clinical practice guide.

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Inter-Authority and Cross-Border Cooperation Using the Tetra Digital Radio Network

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Introduction: The Tetra digital radio network enables a secure and encrypted environment for verbal and minimal data (SDS, Unit Alert) communication. In Finland (population 5.6 million), the technology has been in use since 2002, and the network currently has close to 40,000 end-users representing several authorities including emergency medical services and health care, police, fire and rescue services, Border Guard, Customs, and defense forces. The national dispatch authority uses the network to dispatch and communicate with EMS, police, and rescue services, and inter-authority talk groups have been designed to enable direct communication between each or all actors as needed. On a daily basis, the network transmits more than 7.5 million messages and 150,000 verbal contacts. The system has proved to be extremely stable during mass casualty incidents needing simultaneous actions by hundreds of individuals representing several authorities. Finland, Sweden, and Norway have common borders in the north, which EMS units routinely cross on a daily basis responding to urgent missions. Both Sweden and Norway have nationally implemented the Tetra communication network, but are using different operators.

Methods: The need to facilitate communication between Tetra end-users in the Nordic countries using each other's networks resulted in an inter-system-interface (ISI) solution enabling network roaming. Between Finland and Norway, the mechanism was launched late in 2017 and is being implemented between Finland and Sweden in 2018.

Results: Pending configuration of necessary talk groups, the system will be functional and in use in 2019.