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Symptom clusters on primary care medical service trips in five regions in Latin America

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Abstract Short-term primary care medical service trips organized by the North American non-governmental organizations (NGOs) serve many communities in Latin America that are poorly served by the national health system. This descriptive study contributes to the understanding of the epidemiology of patients seen on such low-resource trips. An analysis was conducted on epidemiologic data collected from anonymized electronic medical records on patients seen during 34 short-term medical service trips in five regions in Ecuador, Guatemala, and the Dominican Republic between April 2013 and April 2014. A total of 22,977 patients were assessed by North American clinicians (physicians, nurse practitioners, physician assistants) on primary care, low-resource medical service trips. The majority of patients were female (67.1%), and their average age was 36. The most common presenting symptoms in all regions were general pain, upper respiratory tract symptoms, skin disorders, eye irritation, dyspepsia, and nonspecific abdominal complaints; 71—78% of primary care complaints were easily aggregated into well-defined symptom clusters. The results suggest that guideline development for clinicians involved in these types of medical service trips should focus on management of the high-yield symptom clusters described by these data.

1. Introduction

The phenomenon of short-term medical service trips has grown substantially over the last several decades [1]. Medical service trips, traditionally referred to as medical missions, medical brigades, or global health experiences, involve clinicians based in developed nations who travel to underserviced communities in developing countries to provide limited primary health care [2,3]. Clinicians

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choose to participate in these trips for a variety of reasons: [4] from religious obligation, to professional and personal development, to altruistic instincts, to the desire for a working holiday that allows for a more authentic experience of the local culture than would be otherwise possible.

Resources on these trips are generally limited to point-of-care testing, including urinalysis, urine pregnancy testing, and glucometer testing. There is limited availability of advanced laboratory testing and imaging, and this generally requires referral to either a private hospital or to the public hospital, which may be a considerable distance from the community.

Considering the popularity and prevalence of these global health experiences, there have been limited descriptions in medical literature of the epidemiology that clinicians can expect to encounter on these trips. Previous studies have suggested that clinicians visiting Latin America see both symptomatologies that are similar to that of primary care practice in North America, but also a greater prevalence of minor conditions that are endemic to tropical, rural, and under-resourced environments [5]. However, it is crucial to the preparation of Western clinicians that intend to deploy on a medical service trip to be informed of the symptomatology they are likely to encounter.

The objective of this article is to describe the common symptom clusters encountered by primary care mobile medical service trips in five distinct regions in Latin America. This descriptive study improves the understanding of the common symptomatology that Western clinicians assess and treat on primary care mobile medical service trips in underserviced regions in Latin America and has implications for the preparation and appropriate training for these types of trips.

2. Methods

2.1. Data collection

Data collection was performed between April 8, 2013 and April 11, 2014, on medical service trips organized by Timmy Global Health, a secular NGO based in Indianapolis, Indiana. This NGO engages local partners and local community physicians at each service site in order to strengthen local health systems and their capacity. Patients requiring semi-urgent or urgent follow-up, as determined by their clinical assessments, are formally referred to an affiliated partner hospital, with transportation and costs covered by the NGO. Over the target time period, the NGO conducted 34 short-term medical service trips.

Medical service trips generally consisted of 4—6 medical providers (physicians, nurse practitioners, physicians' assistants), 1—3 nurses, and 1—2 pharmacists. Undergraduate students generally numbered 10—20 and came from affiliated universities in the United States. Residents and medical students were allowed on the trips if supervised by a responsible clinician. Trips were approximately one week each in duration at all sites, and a service trip visited each host community once every two months to ensure continuity of care. Trip volunteers lodged in the base community and left in the morning by bus or truck to a different host community each day. Patients were recruited in advance by a Community Health worker who was an elected member of the host community, and each patient was given a medical care ticket in advance of the trip visit. Approximately 100 tickets were distributed in each host community, which meant that each provider was expected to see and treat 20—25 patients each day.

These service trips were equipped with limited diagnostic testing that included urinalysis strips, urine pregnancy tests, and a glucometer. Typical flow involved community patients having a preliminary history taken by a health promoter in the village, followed by a triage assessment of vital signs (height, weight, heart rate, blood pressure, temperature) by a nurse. Patients then proceeded to a medical provider (physician, nurse practitioner, or physician assistant), who assessed the patient and provided medical advice and prescriptions. Finally, patients proceeded to the pharmacy station, where a pharmacist dispensed the prescribed medications, as well as multivitamins and anti-parasitics based on standard criteria. Students were present at all stations to provide logistical support, translation, and scribing. Timmy Global Health employs full time bilingual staff at each site to provide translation for cases in which medical staff were not fluent in Spanish.

All data were entered by clinicians or student scribes at the time of care on a dedicated electronic medical record developed specifically for use on medical service trips. This allowed tracking and comparison of all anonymized data and diagnoses made across all sites. All anonymized data were used with explicit permission from Timmy Global Health.

2.2. Participants and settings

Study participants included all the patients who were assessed and treated during each trip. Data were collected from 11 service trips in the Napo region, Ecuador; 8 served Quito, Ecuador; 5 served