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Overview of neurosurgical capacity in St. Lucia

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ABSTRACT

When we talk about the most scenic Caribbean islands, St. Lucia is one of those islands that certainly come into our mind. It is a beautiful tourist destination and the place of post-volcanic paradise on earth. However, just like many remote Caribbean islands, St. Lucians (name for local population) used to have its own difficulties of obtaining on demand basic neurosurgical services in their homeland. This beautiful Caribbean island, socioeconomically falls in the same category as most low-and middle-income countries (LMICs) and unfortunately echoes the same unmet surgical and anaesthesia needs as the rest of them.

INTRODUCTION

Out of any specialized medical professions, neurosurgery requires diversely prepared physicians and specialized operating rooms and experienced staff, who can handle variety of cranial and spinal cases on demand. In this paper we provided an overview of current neurosurgical capacity in St. Lucia, a Caribbean island that recently defined its neurosurgical scope of work. Our research included a systematic survey, in-person data mining and observation of neurosurgical capacity on the island from 2018 to 2019.

THE STATE OF NEUROSURGERY SERVICES ON THE ISLAND

As of 2019 population census reported a count of 180,287 St. Lucians living on the island [1]. It's very hard to imagine that population which is getting closer to 200,000 people didn't have an adequate access to

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the lifesaving specialized surgical procedures. Up until august 2016 St. Lucian's population who suffered from complex neurosurgical diseases or traumas, had to be evacuated by air to the nearest and more medically developed island such as Barbados, in order to receive a competent neurosurgical care. With this model in mind, it's not hard to figure out that majority of critical patients who needed an immediate intervention, simply didn't make pass the receiving hospital's doors.

Presently, St. Lucia has 2 fully functioning board certified neurosurgeons, namely Dr. Curby Dwaine Sydney who is native St. Lucian and Dr. Esteban Roig Fabré – a distinguished professor from Cuba. Both neurosurgeons provide a broad (general) spectrum of adult and paediatric neurosurgical services on the island (Figure 1), which are not limited to [2]:

1. Brain and spine microsurgical procedures
2. Craniotomy and cranioplasty for traumatic brain injuries
3. Cerebrovascular accident treatments.
4. Ventriculostomy and ventriculoperitoneal shunt placements.
5. Spinal procedures include: discectomy, microdiscectomy and laminectomy.

On the diagnostic/imaging side, the following equipment is utilized:

- Computed Tomography (CT).
- Magnetic Resonance Imaging (MRI).
- Electroencephalogram (EEG).
- Intracranial pressure (ICP) monitoring.
- 3D volume rendering and multi-planar reconstruction software.

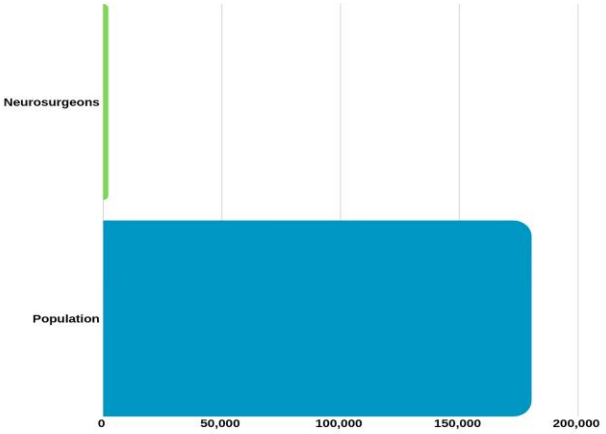

FIGURE 1. Proportion of available neurosurgeons to population of St. Lucia

Due to a scarce nature of neurosurgeons on the island, both neurosurgeons also cover neuro-consult services in public Victoria and private Tapion hospitals for referred emergency patients. Both hospitals function as level 1 trauma centres and are equipped with generalist physicians in the emergency room. Additionally the ministry of health of St. Lucia is working with U.S non-profit organization "WPP" which stands for World Paediatric Project. The WPP organization provides volunteer specialized paediatric surgeons from U.S to address the need of surgically sick children in the Caribbean islands. The majority of ongoing WPP surgeries in St. Lucia were addressing congenital scoliosis. Those children with more complex spinal deformities have an opportunity to be flown to U.S for ongoing treatment and monitoring.

Prevalence of neurosurgical disease

Upon our discovery, St. Lucia along with other LMICs such as Haiti has the same prevalence of neurosurgical disorders [3]. The number one spot takes traumatic brain injury (TBI) followed by cerebrovascular accidents (CVA) [4][5], spinal deformities and congenital pediatric cases (Figure 2).

During our research findings it was interesting to note that St. Lucia has low percentage of tumour prevalence in both adult and paediatric patients.

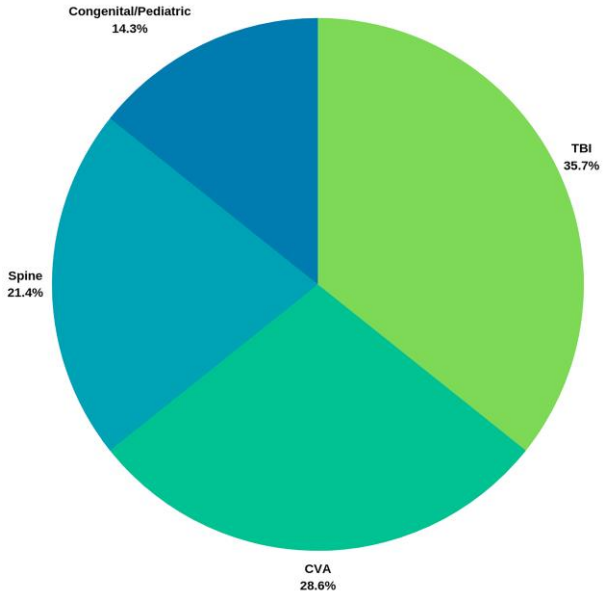

FIGURE 2. Graphical representation of neurosurgical cases in St. Lucia

The most obvious reason for high incidence of traumatic brain injury prevalence is uncoordinated

and unstructured road infrastructure. There is no evidence of dedicated traffic police or clear markings on the pavement for traffic to flow on some major highways (figure 3). Therefore every driver and pedestrian is guided according to his/her own intuition.

The second largest prevalence of neurosurgical disease is cerebrovascular accidents. The cerebrovascular accidents in St. Lucia directly correlate to lack of primary care screening. Even though shortage of primary care doctors is not evident, citizens are not exposed to ongoing physical check-up or simply neglect doctor's visits. Our findings showcased that majority of St. Lucian population older than 50 years old are found to have diabetes mellitus or uncontrolled hypertension; which can explain why it contributes to CVA and makes up to 28.6% of all neurosurgery related diseases.

Figure 3. St. Jude highway in Vieux Fort

Conclusion

This paper showcased an overview of current state of neurological surgery that could be used as a guidance to further neurosurgical development in St. Lucia. As St. Lucian government in collaboration with World Bank continues to invest capital in public healthcare [6], further studies are suggested to assess advancement of neurosurgical care from this point on.

Declarations

Consent for publication

The consent for publication is not applicable for this review article.

Competing interests

Authors declared no competing interests to declare.

Availability of data and material

Data sharing is not applicable for this review article.

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Ethics approval and consent to participate

The approval and consent is not applicable to this study.

References

1. Saint Lucia Population (LIVE). Worldometers. http://www.worldometers.info/world-population/saint-lucia-population/. Accessed April 17, 2019.
2. Sydney CD. Business Focus. Business Focus - The Magazine for Decision Makers. http://businessfocusstlucia.com/neurosurgery-going-farther-dont/. Published June 6, 2018. Accessed April 17, 2019.
3. Barthélemy EJ, Gabriel PJ, Lafortune Y, Clervius H, Pyda J, Park KB. The Current State of Neurosurgery in Haiti. World Neurosurgery. 2019;124:208-213. doi:10.1016/j.wneu.2018.12.205.
4. Lavados PM, Hennis AJ, Fernandes JG, et al. Stroke epidemiology, prevention, and management strategies at a regional level: Latin America and the Caribbean. The Lancet Neurology. 2007;6(4):362-372. doi:10.1016/s1474-4422(07)70003-0.
5. Smeeton NC, Heuschmann PU, Rudd AG, et al. Incidence of Hemorrhagic Stroke in Black Caribbean, Black African, and White Populations. Stroke. 2007;38(12):3133-3138. doi:10.1161/strokeaha.107.487082.
6. Saint Lucia to Improve its Health Coverage. World Bank. https://www.worldbank.org/en/news/press-release/2018/09/28/saint-lucia-to-improve-its-health-coverage. Published September 28, 2018. Accessed April 17, 2019.