

A Decade of ENT Surgery in Saint Lucia
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ABSTRACT

Objective: St Lucia is a developing country with evolving healthcare needs. A single otolaryngologist has provided the island's ENT services for the last 23 years. The primary aim of this study is to establish the surgical caseload for the ENT surgeon in Saint Lucia. The secondary aim is to establish trends in the operation type over the last decade.

Methods: The electronic operative records were retrospectively obtained from Saint Lucia's largest hospital (Victoria Hospital) for all ENT operations performed between January 2005 and December 2014. These were classified by ENT-subspecialty. The Pearson Product Moment Correlation Co-efficients (r) was calculated to establish trends.

Results: A total of 1558 operations were performed over the decade at Victoria Hospital. The most commonly performed operation was adenotonsillectomy (9% of cases), followed by tonsillectomy (9%). We found that 32% of total cases were Head and Neck; 7% Otology, 11% Rhinology and a further 41% were Paediatric cases. Over the ten-year period there was a shift towards increase in number of Head and Neck cases ($r=0.66$) but downward trend in the number of Otology ($r=-0.59$) and Paediatric ($r=-0.22$) cases. There was an upward trend in the number of elective ENT operations ($r=0.32$) and respective downward trend in emergency cases ($r=0.22$).

Conclusion: Through defining the ENT operative caseload, it is possible to inform future training of West Indian otolaryngologists. With increased number ENT surgeons, Saint Lucia will be able to incorporate sub-specialisation of ENT services in accordance with their needs.

Keywords: Otolaryngology, Saint Lucia, Surgical caseload

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INTRODUCTION

Otolaryngology emerged as a surgical subspecialty in the late 19th century, with the American Medical Association Section of Ophthalmology and Otolaryngology founding in 1878(1). The Ear Nose & Throat (ENT) subdivision of this, now the American Academy of Otolaryngology Head and Neck Surgery, currently represents over 12,000 otolaryngologists(2). It is only relatively recently, that the Eastern Caribbean island of Saint Lucia, with a population of over 183,600(3), has hosted its own ENT surgeon. Prior to 1992, many of the island's residents travelled to neighboring islands such as Barbados for ENT provision. Those unable to afford this relied upon itinerant surgeons volunteering from the USA or those periodically visiting from Martinique.

The majority of Saint Lucia's ENT operations are performed at the island's oldest health institution, named after England's Queen Victoria, with the remaining operations being performed at the smaller St Jude's or Tapion Hospital. The Victoria hospital holds 160 beds, hosting a total of 43 doctors, who conduct a mixture of government and private work. For those without private healthcare, ENT operations are partially funded by the Universal Healthcare scheme, introduced as part of the Health Sector Reform (2000)(4). Patients are currently charged 250XCD (1 Eastern Caribbean Dollars= 37 US cents) for 'minor' surgeries, 500XCD for 'intermediate' and 1000XCD for 'major' surgeries.

With an expanding population (5) and a shift from communicable disease related morbidity and mortality to non-communicable disease such as cancer, diabetes and hypertension(6); the demand for ENT services is set to rise in Saint Lucia. With current reforms from the Caribbean Association of Medical Councils promoting transfer of medical registration within the West Indies, it will become easier for qualified doctors from other Caribbean countries to practice in Saint Lucia. It is therefore important to characterise the nature of the ENT workload in order that these demands can be met. With increased number

of ENT surgeons, Saint Lucia will be able to incorporate sub-specialisation of ENT services in accordance with its needs.

The primary aim of this study is to establish the surgical caseload for the ENT surgeon in Saint Lucia over the last decade. The secondary aim is to establish trends in the operation type over the last decade.

METHODS

The complete electronic operative records from Saint Lucia's Victoria Hospital theatres for all operations performed between January 2005 and December 2014 were retrospectively reviewed. Endpoints documented at the time of operation include patient age (at the time of operation), gender, operation, primary operating surgeon, anaesthetic or sedation used and whether the operation was performed as an emergency or elective case. The operations were ranked at the time of admission by the operating team as 'minor', 'major' or 'intermediate'. This is the system used by the Victoria Hospital to determine the fee charged to the patient.

All ENT operations were included in the final dataset, alongside any other operations performed by Saint Lucia's primary ENT surgeon. Each operation was classified by type under the following broad ENT subspecialty headings; 'Head & Neck', 'Otology', 'Rhinology', 'Paediatrics' or 'Other' (non-ENT). The two authors performed this classification independently and any discrepancies were discussed and ratified.

In order to establish trends in the operative workload over the ten-year period, Microsoft Excel (2011) was used to calculate Pearson Product Moment Correlation Coefficients (r) on subsets of the data. This was applied to look at trends across the ten-year period in numbers of emergency and elective cases alongside the operation subspecialties. The Cohen Classification of Correlation Co-efficients (7) was applied to establish the

magnitude of the correlation by year as 'weak' ($r=0.10-0.30$), 'moderate' ($r=0.30-0.50$) or 'strong' ($r>0.50$).

RESULTS

During the period of January 2005 to December 2014 the ENT team at Victoria Hospital performed a total of 1558 operations. The patients operated upon were aged between 18 days and 98 years. The mean patient age in the paediatric population was 3.98 ± 0.20 (95% Confidence Interval [CI]) and the mean age was 45.50 ± 2.37 (95% CI) in the adult population. The ratio of male to female patients was 1.11 to 1. The primary operating surgeon was Saint Lucia's sole ENT consultant Dr Leonard Surage in 95.17% of the cases. The most commonly performed operation was adenotonsillectomy (9.31% of cases), followed by tonsillectomy (9.11% of cases).

The majority of operations were carried out under general anaesthetic (87.48%) whilst a further 11.43% were performed using a local anaesthetic. A further 0.77% were undertaken with sedation alone and a final 0.32% were conducted using a combination local anaesthetic and sedation. Using the Victoria Hospital classification system for payment, 33.78% of the operations performed were 'minor', 11.75% were 'major' and 54.46% were 'intermediate'.

Trends in emergency and elective surgery

During the ten-year data collection period, 72.96% of operations performed by the ENT team were elective cases, whilst the remaining 27.04% of cases were emergencies. Over this period there was an upward trend in the number of elective operations performed by the ENT team, with a moderate positive correlation between the number of elective cases undertaken and year ($r= 0.32$). Conversely, a downward trend was seen in the number of emergency

cases, with a weak negative correlation between the number of emergency operations performed and year ($r=-0.22$) [Figure 1].

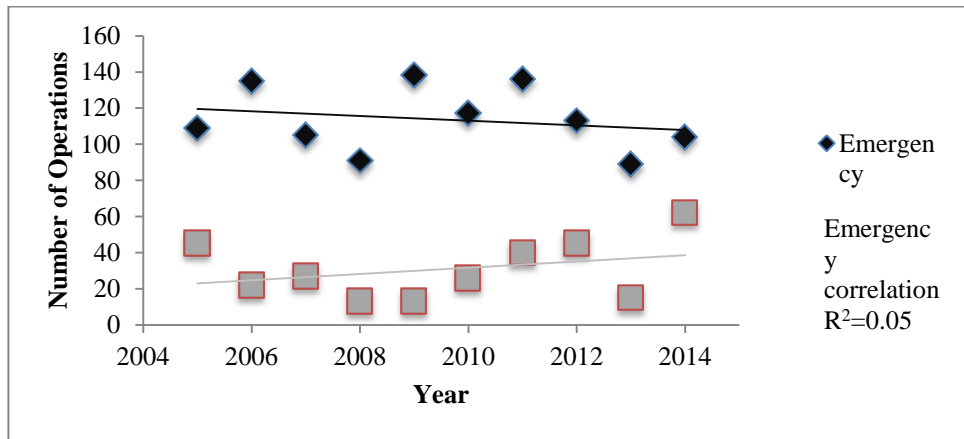


Fig 1: Number of elective and emergency cases over 10 years.

Trends in operation performed by subspecialty

We classified all operations performed by the ENT team over the ten-year period by subspecialty. We found that 32.54% were Head and Neck; 7.25% were Otolaryngology, 11.32% were Rhinology and a further 41% were Paediatric cases. A final 7.25% of cases were those performed by the ENT surgeon but were deemed not to ‘classically’ fall within the remit of ENT.

Over the ten-year period there was an increase in the number of Head and Neck cases, with a strong positive correlation between number of Head and Neck cases and year ($r= 0.66$) (Figure 2). Meanwhile there was a downward trend in the number of ENT cases under the subspecialty of Otolaryngology and Paediatrics, with moderate ($r=-0.59$) and weak ($r=-0.22$)

negative correlations with year respectively. There was no change in either Rhinology ($r=0.02$) or non-ENT (*other*) operations ($r=0.04$) across the ten-year period.

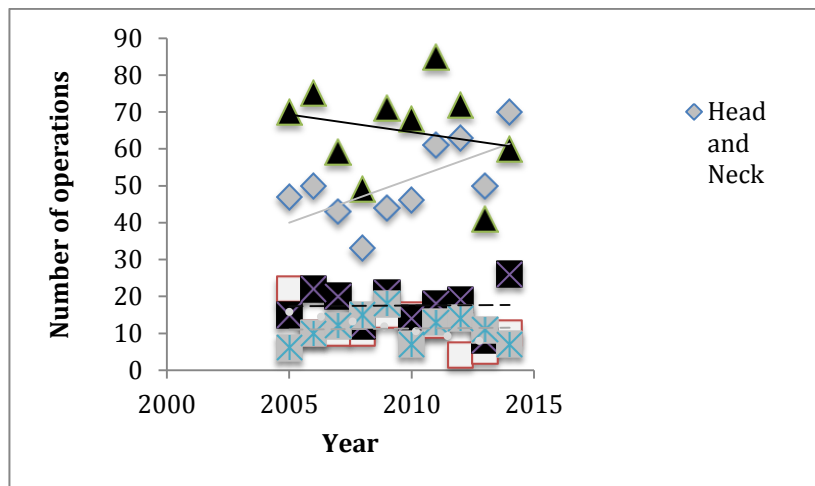


Figure 2: Correlation between year and operation subspecialty.

DISCUSSION

This study provides an insight into a developing Caribbean country's ENT operative caseload and how this has changed over the last decade. As the majority of operative cases (95.17%) were performed by a single surgeon this provides strong internal validity to this study.

The results suggest that over the last decade there has been a shift towards more elective and less emergency ENT operations in Saint Lucia. This may reflect improved health education and the public's healthcare awareness, resulting in earlier presentation at a time where patients can be operated upon electively. It may also reflect a reduction in violent crimes (resulting for example neck lacerations or gunshot wounds). These changes may be related to government initiatives.

The split of the operative caseload by category offers information that may help predict future ENT service requirements. With the increase in Head and Neck surgeries being

performed, recruitment of Head and Neck specialist on the island would be of benefit. Around forty percent of the operations were on paediatric patients. This highlights the importance of the maintaining and enhancing paediatric care and facilities within ENT services.

This study has a number of limitations to acknowledge. Whilst we studied a single population cohort at a single centre, this limits the external validity of the results. As the data was collected retrospectively we cannot be certain of its accuracy. We wished to capture the operative caseload of the ENT surgeon in Saint Lucia so therefore included operations that would not classically be performed by ENT surgeons in the western world. Examples include rigid oesophagectomy, wiring of the mandible and intraorbital foreign body (bullet) removal. Inclusion of these patients in our final analysis may have resulted in inclusion bias.

CONCLUSION

In recent decades Otolaryngology surgery has undergone major advances with the improvements and innovation in technology, such as endoscopes and powered instruments. Understanding the evolving ENT surgical demands in Saint Lucia allows for better future work force planning and training.

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