

AN ASSESSMENT OF ENT SCOPE AND TRAINING PERCEPTIONS AMONGST GENERAL PRACTITIONERS AND PRIMARY CARE PHYSICIANS IN KWAZULU-NATAL

By

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As the candidate's supervisor I have approved this thesis for submission.

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Declaration

I Dr. Reshna Mungar declare that

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Dedication

I dedicate this research survey to the unsung hero's in the Ear, Nose and Throat (ENT) Departments across the eleven respective Universities – Registrars and Consultants who tire day by day to ensure that patients receive optimal health care.

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Overview

Ear, Nose and Throat (ENT) is a discipline that requires expertise and specialised equipment to evaluate certain head and neck conditions. However in the Public Health setting we are not only faced with resource constraints but staffing constraints. As a specialist workforce our time needs to be utilised effectively and efficiently servicing the respective hospitals with overseeing ENT conditions and pathology that cannot be managed at a primary care Level. ENT symptoms and conditions are commonly encountered in primary level care however the awareness and importance of ENT is not stressed and misrepresented.

The purpose of this comparative study was to describe the scope, importance and training perception needs of ENT in General Practice (GP). The aim was to understand the exposure and experience to ENT. The research assessed frequency, importance of ENT conditions and pathology and awareness of management or if a referral process was instituted. The information from the research will provide a basis for us to tailor undergraduate training and implement training workshops to further expose doctors to ENT management of conditions at a primary care level.

The study was done with the use of an online survey questionnaire developed on Google Forms and advertised via hyperlink (<http://goo.gl/forms/FLCqOKIThS>) on the KwaZulu-Natal Department of Health (DOH) website, South African Medical Association (SAMA) and GP Forums (Independent Practitioners Associations, KwaZulu-Natal Doctors Healthcare Coalition 2016 Conference) as well as their respective media interfaces for a period of six months from March 2016 to August 2016.

The survey extrapolated demographic information, training perception needs of ENT, the frequency of common ENT symptoms and conditions, their management or referral and highlighted the scope of ENT. The survey targeted public and private doctors-General Practitioners, Interns, Community Service Doctors and Medical Officers (Junior and Senior) working in Clinics, Primary Care Facilities and Hospitals within rural and urban areas across KwaZulu-Natal.

The results were as follows with a response rate of 246 replies. 66.4% were males and 33.6% females. The average age of participants were 43.2 years, with a range of 24 to 88 years of age. A fair representation of General Practitioners (50.4%) and Primary care Physicians (49.6%) were captured. The average mean years of practice amongst the participants were 17.03 years. Of the 11 medical schools, 44.4 % of Doctors received between 2 weeks to 1 month of ENT teaching. Most South African

Universities averaged with a period of 2 week to 1 month but Universities abroad were noted to have more than 2 months of ENT teaching and exposure.

With respect to further training or postgraduate training in ENT, 76.8% of Doctors had not attended any ENT workshops or courses after medical school training and a further 85.9% did not having any work experience in an ENT speciality. 96.5% of Doctors agreed that further emphasis on ENT training is required for GP practice. The areas lacking in ENT training were Rhinology as is was most underrepresented in ENT training with 56.7%, followed by Throat 45.8% and then Otology 40.8%. With respect to the availability of an ENT specialist and referral, the 11 districts faired differently however the trend noticed was that as one moved away from the EThekwini district the availability and access to an ENT service was lacking.

Top six ENT symptoms most encountered (> 25 times per month) were Sore Throat, Rhinitis, Difficulty/Noisy breathing , Otaglia ,Discharging ear and Dizziness/Vertigo. In the Private Sector the most common symptom is Sore Throat, and in Public Sector the most common symptom is Rhinitis. The top six ENT Conditions were Pharyngitis/Tonsillitis/Laryngitis/Croup , Sinusitis,Infective and/ Allergic Rhinitis, Gastro-oesophageal reflux disease, Oral Ulcers/ Candida/Herpes and Otitis media (suppurative/secretory). The most common condition seen in Private Sector is Pharyngitis/Tonsillitis/Laryngitis/Croup. However in Public Sector the most common condition seen is Gastro-oesophageal reflux disease. Top six Emergencies are Foreign body in Ears , Foreign body in Nose, Airway Obstruction, Mastoiditis, Periorbital cellulitis and Foreign body in Throat. With respect to referrals Private doctors referred mostly to a Paediatrician followed by an ENT Surgeon. Public doctors referred mainly to the Local Hospital. The ENT Surgeon was fourth in line for referrals in the Public sector. Private sector doctors with more than ten years practise referred mainly to the ENT surgeon. Those less than ten years referred to the Paediatricians.

The impact of the study was that the survey highlighted that ENT is underrepresented in undergraduate training and that there exists a need for further training as doctors felt that ENT was an important aspect of general practice. The top six symptoms and conditions within a month were highlighted. Giving

an indication as to where pathology lies and the target of training in those fields. The frequency of emergencies encountered were exposed which also guides one to focus training needs. The availability of an ENT doctor did assist with more referrals but whether they were necessary could not be assessed. Interesting to note that experience did not collate to referral pattern which reiterates the need for training and awareness of ENT. The research survey was interesting to fellow colleagues as it offered insight to the exposure of Doctors to ENT as a discipline and compared Public and Private sector exposure to ENT.

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Chapter 1: The Review of Literature

Introduction

The disease burden within the state is enormous and along with staffing and equipment shortages, the patients ultimately suffer. As an ENT registrar encountering ENT pathology across KZN is often delayed, incorrectly referred or mismanaged. It is essential that resources and expertise be used effectively and that only referrals not manageable at a Primary health care level be escalated to the ENT specialist. To ensure effective management and efficient use of resources, the disease burden needs to be understood and the inadequacies of ENT exposure and understanding the needs to be addressed amongst medical professionals at a Primary health care level.

The aim of the study was to highlight the scope of ENT and the need for further ENT training and exposure. Currently in KZN, no internship rotation exists within the ENT academic department nor do Community Service Doctors get exposure to ENT training. However approximately 20% of new consultations to general practitioners are complaints of the ear, nose, and/or throat and this estimate raises up to 50% when consulting children¹. ENT is vital to generalist practice however interpretation of the knowledge base is insufficiently known as directed by the incorrect referrals and mismanagement of ENT patients.

ENT as a speciality requires specific equipment i.e. Fibreoptic Nasopharyngoscopes, Rigid Nasoendoscopes, Microscopes, Laryngoscopes and functioning support services such as availability of theatre, radiology services, Speech Therapy, Audiology, Neurosurgery, Plastic surgery, and Anatomical pathology. It is a speciality requiring expensive resources, hence the centers training ENT specialists are few and centrally based. Access to ENT services at times from Rural KZN is difficult and thus training doctors in Primary ENT pathology and management thereof is a way forward to decrease the disease burden, direct resource driven referrals for further management and improve health infrastructure in KZN.

Critical Literature Review

ENT prevalence is misrepresented in most surgical and medical disciplines. It is a Surgical Sub-speciality and internationally it's the third largest surgical specialty with related problems frequently encountered in a range of other disciplines including general practice and emergency medicine (along with General surgery- trauma and orthopaedics)². A survey study done in United States showed that only 43% of patients are even aware that an ENT is a physician³.

A study of all 27 UK medical schools showed that the average length of time spent with an ENT department at medical school is only one and a half weeks, and this is often a combined attachment with other specialities⁴. There has been traditionally three ports of ENT exposure- Undergraduate level, Medical Officer in ENT and CME programmes. Most medical schools undergraduate ENT exposure ranges from 3 to 10 days (average of 2 weeks)⁵.

The South African National Department of Health states that the main objective of Community Service is to ensure improved provision of health services to all the citizens of our country⁶. GP's provide 70% of total healthcare and they are thus required to have adequate training to deliver efficient primary healthcare⁷. Training in ENT is more tedious when compared to other specialities as mentioned above, not only is it equipment specific but time and expertise is needed to appreciate the signs of disease or a procedural view in a cavity of ear, nose and throat. The question is then, are we equipping our doctors with the adequate skills needed.

Surveys taken in the United Kingdom and Canadian medical systems suggest that primary care specialties are not receiving sufficient training for ENT complaints⁸. Studies involving primary healthcare practitioners in America and Canada have found that the majority of doctors were not aware of appropriate referral indications for common ENT procedures such as tonsillectomy⁹. A clear indication that ENT pathology is least understood and lacking in exposure. A study done in America was conducted to assess what family doctors need to know about ENT.

Research done on South African Shortage of Doctors, ECONEX 2015, showed that a shortage of Doctors exists in General in South Africa and hence quality of training for our Doctors is pertinent. A BMJ Systematic review found that 21% of ENT undergraduate programmes incorporated a formal, ENT examination and that the satisfaction of their ENT training rose from 24% to 33% once formal examination teaching was given. A study amongst American residents in Family Medicine, Paediatrics and Internal medicine found that despite the years of experience their perceptions, understandings and referral preference to ENT Surgeons from their Internship years to senior residency did not change indicating that their opinions of ENT were formalised in the medical school training and that there was a lack of ENT exposure in their residency¹⁰.

A postal survey done in the UK 2007 showed more than half the GPs' felt inadequate in their ENT training at an undergraduate and postgraduate level¹¹. This sparked the introduction to further training in the UK General Medical Council for GP's in ENT conditions and management. In Ireland, the otolaryngology, head and neck training appraisal questionnaire, indicate that more than 90% of GPs felt that further ENT training was required and a synchronisation of graduate medical school training.

Current literature internationally has stressed the importance of ENT not only in General Practice but in postgraduate training of non ENT disciplines as well. South African training of Doctors in preparation of generalist practice needs assessment and tailoring.

Research Question

Is the current state of ENT knowledge adequate for safe and effective Generalist Independent Practice?

The aim was to understand the exposure and experience to ENT and to evaluate the knowledge of ENT amongst Interns, Community Service Doctors, Medical Officers (Junior and Senior) i.e. [Primary care providers in Government (PCPG)] and General Practitioners [Primary care providers in Private Sector (PCPP)]. Having a baseline understanding of ENT is fundamental to accessing correct resources and referring appropriately.

The objective was to determine the extent of ENT pathology encountered by Primary care providers in the Government i.e. Interns, Community Service Doctors, Medical Officers (Junior and Senior) and Primary care providers in Private Sector i.e. General Practitioners by way of a survey. From the survey the objective was to develop a questionnaire that evaluates the current state of knowledge and confidence level with procedures in ENT amongst Primary care providers in Government and in Private Practice. This was to establish grounds for further teaching and exposure to ENT pathology and management.

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Chapter 2: A submission ready manuscript.

An Assessment of ENT Scope and Training Perceptions amongst General Practitioners and Primary care Physicians in Kwa-Zulu Natal

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Background: Undergraduate ENT training provides junior doctors with skills and knowledge useful for independent practice as generalists. A survey of the ENT scope encountered in Private and Public sector highlights the ENT exposure and management of conditions. These results may then be used to supplement and improve undergraduate training and for the introduction of training programmes or workshops in ENT for Junior Doctors, General Practitioners and Casualty Officers. It also emphasises the important role that ENT plays in Independent Practice.

Objectives: The study was done to highlight the scope ENT encountered and a need for further training or experience in ENT amongst the General Practitioners (GP) and Primary Care Physicians (PCP) in the Government (Interns, Community Service Doctors, Medical Officers (Junior and Senior).

Method: This study used a cross sectional and experimental design. An online survey was developed in Google Forms and advertised for period of 6 months on the KZN Department of Health (DOH) website, SAMA and GP Forums inviting Doctors to participate randomly.

Results: A response rate of 246 replies were received (66.4% males and 33.6% females, mean age 43.2 years). 50.4% were GP's and 49.6% were PCP's from the Department of Health KZN (DOH KZN). Most respondents were in practice for 17.03 years (mean average). A fair representation of the eight medical schools were captured. 96% of Doctors felt there is a need for further emphasis on ENT training for GP practice. 85.9% did not have any prior ENT work experience. 44.4 % acknowledged receiving between 2 weeks to 1 month of ENT teaching at Medical School. The top 5 conditions and emergencies in Private versus the Public sector were correlated. Significant P values for 4 emergencies were seen in equal proportion to both Public and Private sectors. Less than 25% of patients with ENT pathology are referred from the Private and Public Sector. Indicating a need for further ENT exposure and management.

Conclusion: This survey emphasises the vast scope of ENT expertise needed for Independent Practice and will contribute towards the development of a relevant curriculum for undergraduate training as well postgraduate CPD courses.

Introduction

ENT prevalence is misrepresented in most surgical and medical disciplines. Internationally it is the third largest surgical specialty with related problems frequently encountered in a range of other disciplines including general practice and emergency medicine (along with General surgery- trauma and orthopaedics) ¹. Approximately 20% of new consultations to general practitioners are complaints of the ear, nose, and/or throat and this estimate increases up to 50% when consulting children ². As an ENT registrar one encounters a significant number of ENT pathology across KZN from referrals that are often delayed or mismanaged. In order to plan for an effective service and utilise the limited specialist workforce optimally it is pertinent that time spent by registrars and consultants servicing the respective hospitals is focused on ENT pathology that cannot be managed at a Primary Care level. Undergraduate ENT training provides doctors with skills and knowledge useful for practicing medicine. Most KZN graduates experience on average two weeks of ENT during their undergraduate training. Internship training in KZN has no rotation in the academic setting of ENT training ³. Further exposure to ENT follows either working in an ENT department or specialisation in ENT, a Family Medicine specialisation and or Paediatric specialisation. A study of all 27 UK medical schools showed that the average length of time spent with an ENT department at medical school is only one and a half weeks, and this is often a combined attachment with other specialities⁴.

Surveys taken in the United Kingdom and Canadian medical systems suggest that primary care specialties are not receiving sufficient training for ENT complaints⁵. Studies involving primary healthcare practitioners in America and Canada have found that the majority of doctors were not aware of appropriate referral indications for common ENT procedures such as tonsillectomy⁶. A survey study done in United States showed that only 43% of patients are even aware that an ENT is a physician⁷. A clear indication that ENT pathology is least understood and lacking in exposure.

The aim of the study was to highlight the scope of ENT and the need for further ENT training and exposure. The disease burden remains unchanged, however ENT requires functioning support services such as availability of and reporting on specialised radiology, speech therapy, audiology, neurosurgery, plastic surgery, and pathology. Training doctors in ENT pathology and management thereof is a way forward to decrease the disease burden and improve health infrastructure in KZN.

Methods

This was a prospective study with a cross sectional, experimental design. An online survey “*ENT UKZN General Practice Survey (ENT GP Survey)*” was developed on Google Forms and advertised via hyperlink (<http://goo.gl/forms/FLCgOKlThS>) on the KwaZulu-Natal Department of Health (DOH) website, SAMA and GP Forums (Independent Practitioners Associations, KwaZulu-Natal Doctors Healthcare Coalition 2016 Conference) as well as their respective media interfaces for a period of 6 months from March 2016 to August 2016. The survey was open to all General Practitioners, Interns, Community Service Doctors and Medical Officers (Junior and Senior) working in Clinics, Primary Care Facilities and Hospitals within rural and urban areas across KZN.

Hospitals of note were those benchmarked for the Decentralisation of training for undergraduate medical students (Ugu district, Uthungulu/ Umkhanyakude/ Zululand district, Umgungundlovu district and Amajuba district) and the current Centralised training facilities (Ethekewini District).

Once the survey was complete and participant data received, descriptive and statistical analysis was performed using information from Google forms and commercially available software packages (Microsoft Excel, 2007). Demographic details were obtained, as well as Practicing Area, District and Hospital (Decentralised/Centralised). A descriptive analysis of the perceptions of ENT training needs and adequacy for General Practice was obtained. An approximation of number of patients seen within a month was used for statistical purposes.

Close ended questions were asked as followed:

1. Select the areas where you feel you have received adequate ENT training as an undergraduate:
 - a. Ears, b. Nose and c. Throat
2. How much ENT teaching did you receive in Medical School?
3. Do you have work experience in an ENT speciality?
4. Have you attended any ENT workshops or courses?
5. Do you think further emphasis of ENT training is required for GP practice?
6. Are there any ENT specialists within your district?
7. Does your nearest referral hospital have an ENT specialist?

The need for ENT work experience and training was highlighted. The scope of ENT pathology and emergencies encounter were compiled and Doctors were asked the frequency encountered within a month. (*Table 1: Frequency of Symptoms*). Similarly tabulations for conditions and emergencies were also compiled and answered. (*Table 2: Symptoms, Conditions and Emergencies compiled*)

Table 1: Frequency of Symptoms

How many times in the last months have the following symptoms presented? *

	0 – 5	6 - 14	15 - 25	> 25 times
Sore Throat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dysphonia/hoarseness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Globus feeling in the throat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Difficulty/noisy breathing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hearing loss	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Otalgia	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Discharging ear	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tinnitus	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dizziness/Vertigo	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Anosmia/Hyponosmia	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Rhinitis	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Facial weakness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Table 2: Symptoms, Conditions and Emergencies compiled

	Symptoms	Conditions	Emergencies
Ears	Otalgia Discharging ear Dizziness/Vertigo Hearing loss Tinnitus Facial weakness	Otitis media (suppurative/secretory) Wax impaction in Ear Otitis externa Perforated tympanic membrane Benign paroxysmal positional vertigo Ménière's disease Cholesteatoma	Foreign body in Ears Mastoiditis Sudden Sensorineural hearing Loss Auricular haematoma/ Perichondritis Malignant Otitis Externa Facial Nerve Palsy/Bell's Palsy Eustachian tube dysfunction
Nose	Rhinitis Difficulty/noisy breathing Anosmia/Hyponosmia	Infective and/ Allergic Rhinitis Snoring and sleep apnoea Sinusitis Septal deviation Nasal polyps Epistaxis Sinonasal mass	Foreign body in Nose Nasal Septal haematoma/ Nasal Fracture Periorbital cellulitis
Throat	Sore Throat Dysphonia/hoarseness Globus feeling in the throat	Pharyngitis, Tonsillitis, Laryngitis, Croup Gastro-oesophageal reflux disease Oral Ulcers/ Candida/Herpes Quinsy Glandular fever	Airway obstruction Foreign body in Throat Deep space neck abscesses Ludwigs Angina
Head and neck		Neck masses Parotid masses Suspected Head and neck cancers Salivary stones	
General		Temporo-mandibular pain Trigeminal neuralgia Ramsey Hunt syndrome	
ENT manifestation of systemic disease		ENT manifestation of systemic diseases	

Access to an ENT referral pathway and percentage referrals were calculated.

Table 3: % Referrals per Expertise

Approximately what percentage of patients have you referred to the following medical facilities in the last 3 months?

	< 25%	25% - 50%	50% - 75%	> 75%
Speech Therapists	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Audiologists	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Oncologists	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Paediatrician	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ENT Surgeon	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Local Hospital	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Statistical relevance was calculated with SPSS software and tabulations were recorded in Excel Microsoft word Version 2007.

Results

A response rate of 246 replies were received. 66.4% were males and 33.6% females. The average age of participants were 43.2 years, with a range of 24 to 88 years of age. A fair representation of GP's (50.4%) and PCP's (49.6%) were captured. The mean years of practice were 17.03 years.

Undergraduate training

Of the participants, 44.4% Doctors admitted to receiving between 2 weeks to 1 month of ENT teaching at Medical School. Most South African Universities averaged with period of 2 weeks to 1 month of ENT exposure (*Figure 1 Undergraduate ENT Training*) and Universities abroad (Other) were only those noted to have more than 2 months of ENT teaching and exposure.

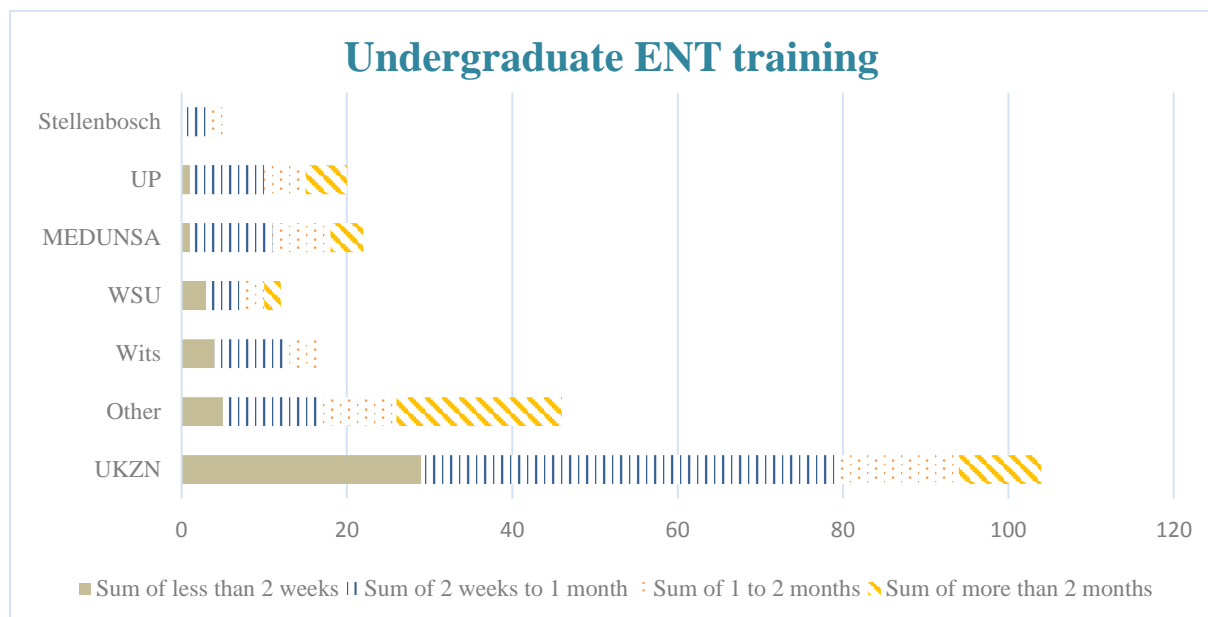


Figure 1 Undergraduate ENT Training

Postgraduate training

76.8% of Doctors did not attend any ENT workshops or courses after medical school training. With a further 85.9% not having any work experience in an ENT speciality.

Perceptions of ENT Importance

96.5% agreed that further emphasis on ENT training is required for GP practice.

Areas Lacking in Training

When asked which areas Doctors felt they received adequate training, Rhinology appeared to be the most underrepresented in ENT training with 56.7%, followed by Throat 45.8% and then Otology 40.8%.

Availability of an ENT in a District and or Referral Hospital- Public versus Private

The 11 districts faired differently however the trend noticed was that as one moved away from the EThekwini district the availability and access to an ENT service was lacking. The availability of an ENT made for easier and frequent referral however warranted or genuine the referral could not be assessed.

Table 4 Percentage Referral: Private and Public (District/Hospital)

District	% ENT in Private	% ENT in Public	% ENT in Private Referral Hospital	% ENT in Public Referral Hospital
Amajuba	100%	33%	100%	33%
Umzinyathi	100%	100%	80%	100%
Umkhanyakude	100%	86%	100%	100%
Uthungulu	100%	75%	100%	100%
uMgungundlovu	50%	86%	100%	90%
Harry Gwala	71%	50%	86%	50%
Ilembe	86%	100%	86%	100%
Ethekwini	81%	72%	84%	83%
Uthukela	80%	100%	60%	0%
Ugu	0%	78%	0%	100%
Zululand	0%	50%	0%	100%

ENT Symptoms frequency

Top six ENT symptoms most encountered (> 25 times per month) in descending order were 1. Sore Throat (36.70%), 2. Rhinitis (33.50%), 3. Difficulty/Noisy breathing (13.70%), 4. Otalgia (8.90%), 5. Discharging ear (4.80%), 6. Dizziness/Vertigo (3.20%). (*Figure 2 Symptoms*). In Private the most common symptom is Sore Throat, and in Public the most common symptom is Rhinitis.

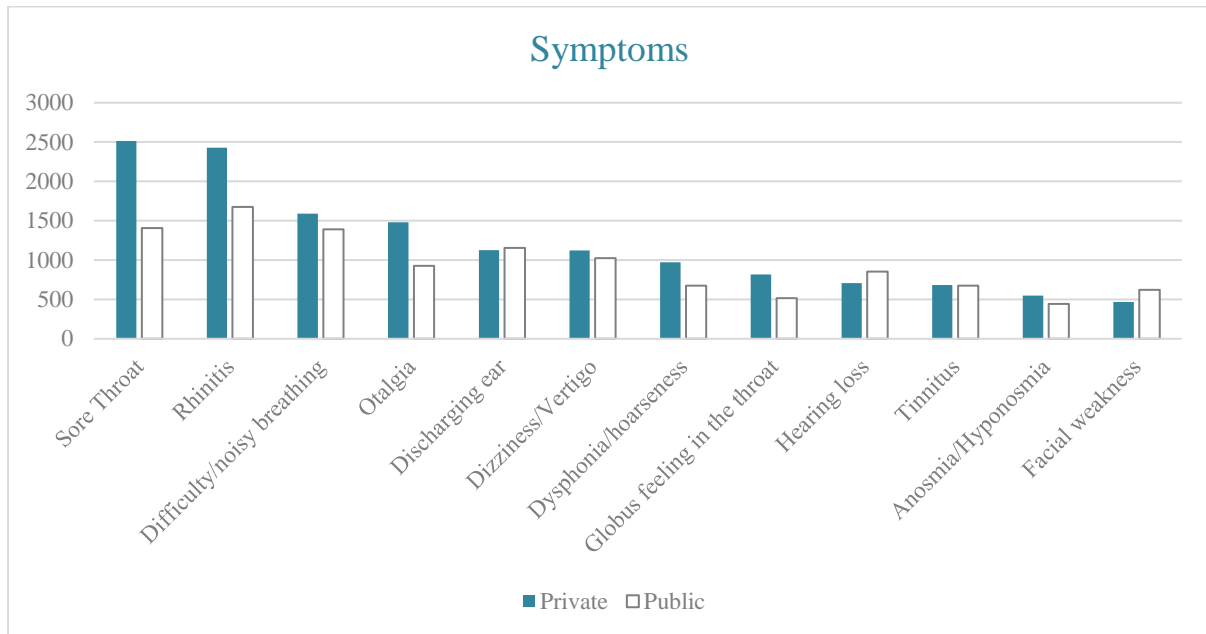


Figure 2 Symptoms

ENT Condition encountered

The top six Conditions were 1. Pharyngitis/ Tonsillitis/ Laryngitis/Croup (31%), 2. Sinusitis (28.60%), 3. Infective and/ Allergic Rhinitis (29.80%), 4. Gastro-oesophageal reflux disease (24.20%), 5. Oral Ulcers/ Candida/Herpes (7.70%), 6. Otitis media (suppurative/secretory) (7.30%). (*Figure 3 Conditions*). The most common condition seen in Private is Pharyngitis/ Tonsillitis/ Laryngitis/Croup. However in Public the most common condition seen is Gastro-oesophageal reflux disease.

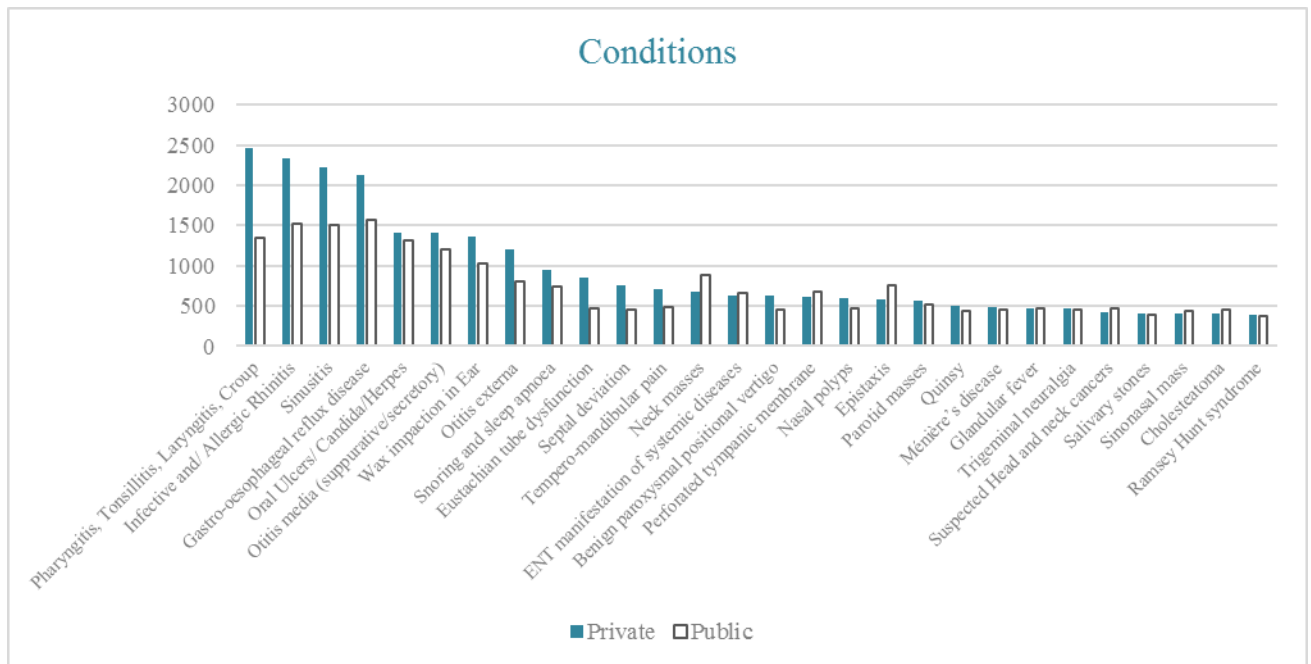


Figure 3 Conditions

ENT Emergencies experienced

Top six Emergencies are 1. Foreign body in Ears (3.20%), 2. Foreign body in Nose (1.60%), 3. Airway Obstruction (1.60%), 4. Mastoiditis (1.20%), 5. Periorbital cellulitis (0.80%), 6. Foreign body in Throat (0.80%). Correlation with Conditions and Emergencies in Private versus the Public sector were made. Statistical significance with four emergencies were found. (Figure 4 Emergencies)

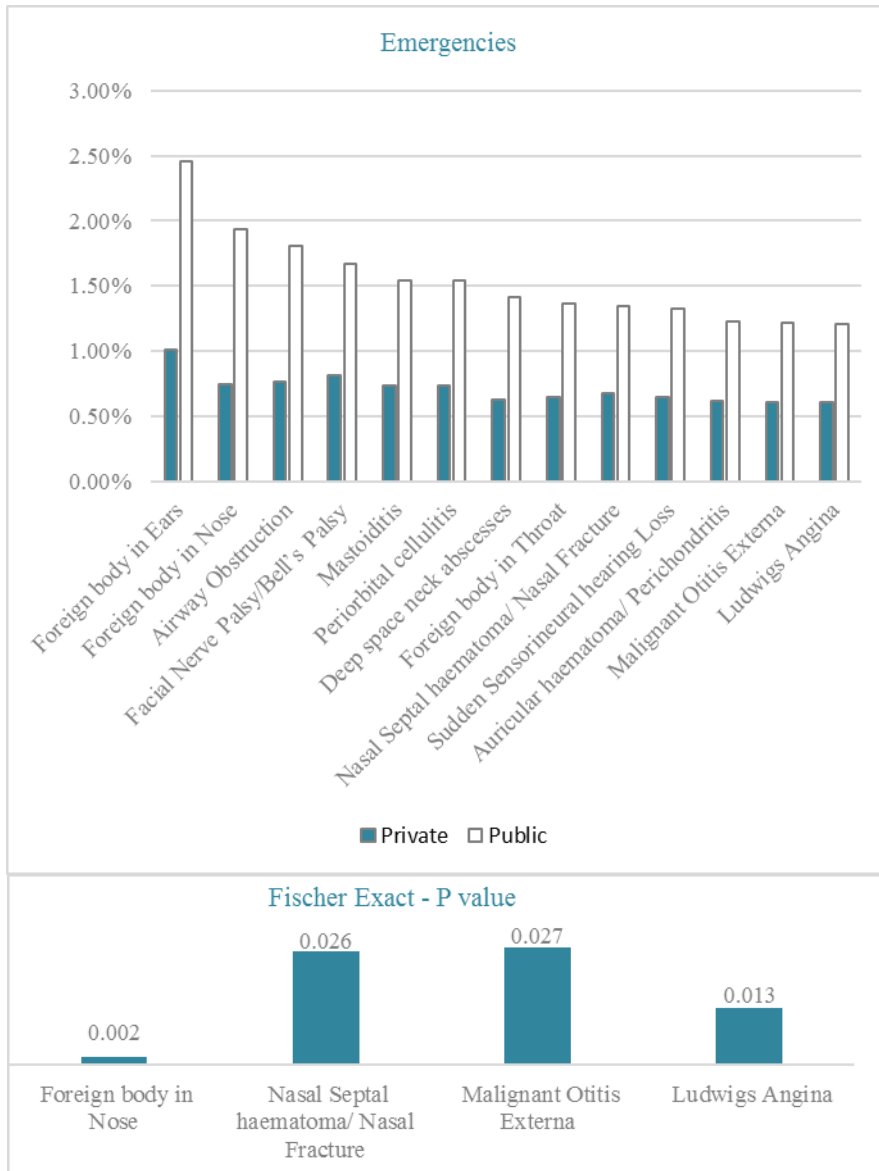


Figure 4 Emergencies

ENT referrals

With respect to referrals (*Figure 4 Referrals: Private vs Public*), Private doctors referred mostly to a Paediatrician followed by an ENT surgeon. Public doctors referred mainly to the Local Hospital. The ENT Surgeon was fourth in line for referrals in the Public sector.

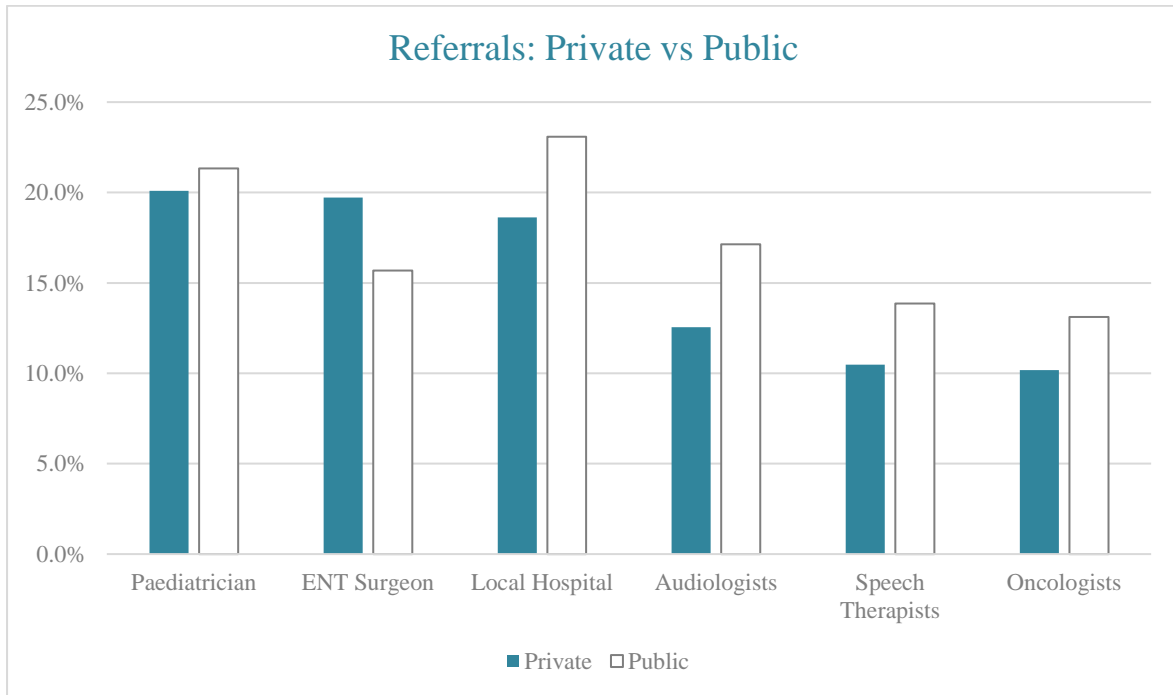


Figure 4 Referrals: Private vs Public

Private sector doctors with more than ten years practise referred mainly to the ENT surgeon. Those less than ten years referred to the Paediatricians. (Figure 5 Private doctors years of Practise)

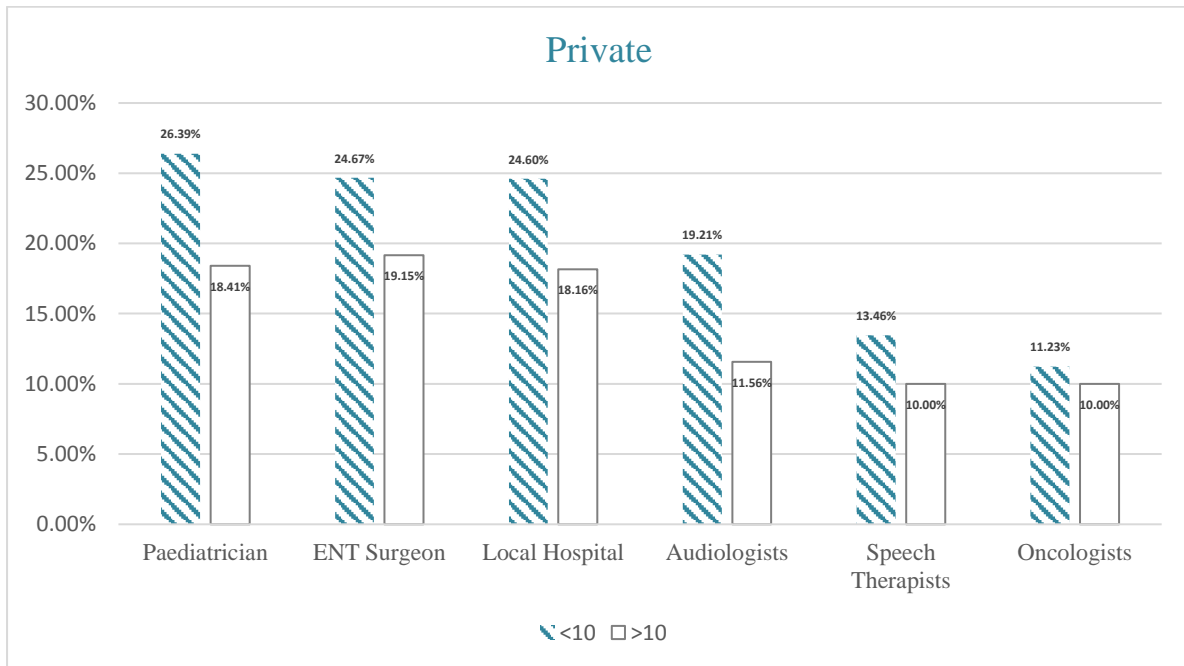


Figure 5 Private doctors years of Practise

Public sector doctors with more than ten years of practise referred mainly to the Paediatrician and those less than ten years referred mostly to the Local Hospital.(*Figure 6 Public doctors years of practise*)

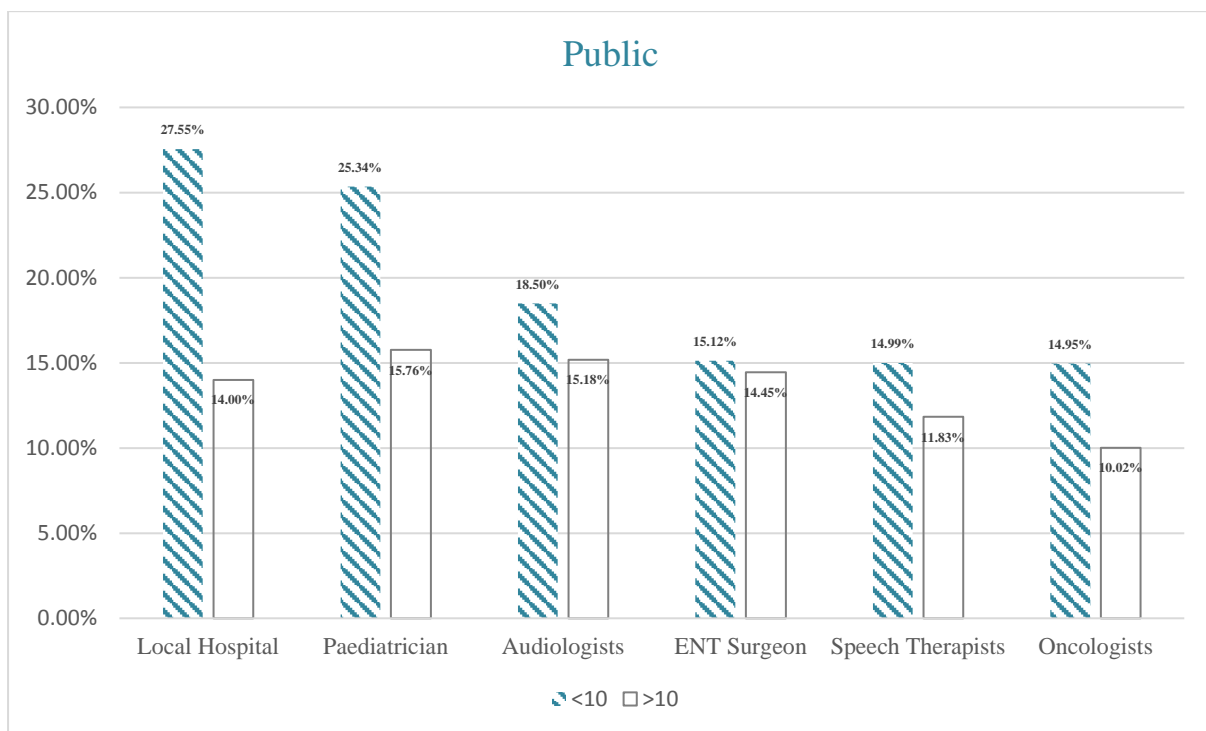


Figure 6 Public doctors years of practise

Doctors with more than ten years in practice referred mostly to the Local Hospital and those with less than ten years of practice referred mainly to the Paediatrician. (*Figure 7 Referrals according to years of practise*)

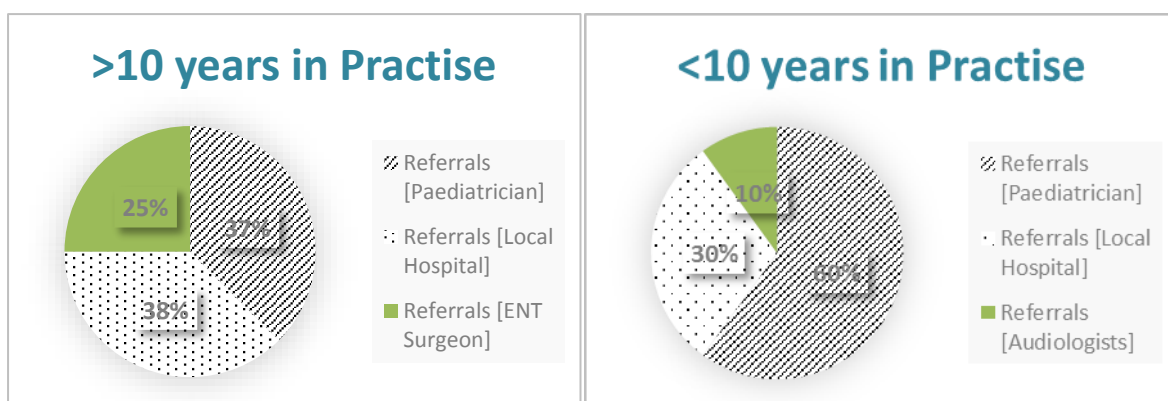


Figure 7 Referrals according to years of practise

Less than 25% of patients with ENT pathology are referred from the Private and Public sector. As one moved closer to the Ethekwini district, or Tertiary institution, more referrals were done. This indicates that an ENT specialist available nearby created for easy referral and management.

Discussion

ENT forms a vital part of GP consultations⁸. This study emphasises the vast scope of ENT expertise needed for Independent Practice. The Public and Private Sector play an equal role in contributions to the scope and management of ENT conditions and emergencies. This will contribute towards a relevant curriculum for undergraduate training as well postgraduate CPD courses.

The training requirements for Generalist Doctors differ vastly when compared to the UK and America. HPCSA requires one to complete a two year internship programme and a year of Community service thereafter of which one is certified to practice as a General Practitioner (Independent Practice). The rationale behind the 2 years' internship was to accommodate a reduced undergraduate study period from 6 to 5 years. Hence ensuring a supervised practical experience that would compensate for the reduced educational period. However the HPCSA evaluations of internship posts have repeatedly shown that supervision is often lacking, and that even where supervision is present in the teaching hospitals, the internship experience is far from satisfactory⁹.

The UK General Medical Council's 2011–2013 education strategy requires medical education produces doctors with appropriate knowledge and skills, provided in an appropriate environment, and by a suitable trainer¹⁰. GP Trainees rotate within six major specialities- Geriatrics, Psychiatry, General Medicine, Obstetrics / Gynaecology, Paediatrics and Emergency Department. There is a general perception that postgraduate trainees in disciplines such as General Practice will receive formal training in ENT. However in a survey done in Southwest England, 30% of Doctors had received no hospital experience or any form of postgraduate teaching in ENT⁸. This problem of preparedness for ENT is not specific to the UK¹¹.

This study, the ENT GP Survey showed that 85.9% did not get any ENT exposure after undergraduate qualification. The HPCSA recommends that South African internship programme involves rotations in Specialties as General medicine (4 months), Orthopaedics (2 months), Anaesthetics (2 months), Obstetrics and Gynaecology (4 months), Family medicine or General Practice (3 months), Psychiatry (1 month), Paediatrics (4 months), General surgery (4 months)³. The ENT GP Survey study found that ENT speciality exposure in South African undergraduate medical training comprises a minimum of 2 weeks to 1 month within a training block of which may be shared with other specialities – Dermatology, Ophthalmology, Orthopaedics, Plastics, Family Medicine, Neurosurgery and Urology.

The effectiveness of undergraduate ENT teaching was studied amongst 26 Medical schools in UK comprised of questionnaires sent to ENT consultants, medical school deans and students. The outcome was to measure the provision of mandatory or optional ENT placements, and their duration and content. Most ENT consultants questioned considered that newly qualified doctors were not proficient in managing common ENT problems that did not require specialist referral. Students were dissatisfied with the provision and quality of ENT teaching¹⁰. Opinions of ENT by Primary Care Physicians in America are formed in medical school and a formulation of ENT knowledge and understanding is no different from Internship to Senior Residency hence stating that there is a lack of exposure amongst Primary Care Residency (Internal Medicine, Paediatrics and Family Medicine)¹². This highlights that even after undergraduate training, further experience is required for effective clinical practice as a Doctor¹³.

In summary there is agreement with opinion amongst Private and Public Health Physicians when it comes to the importance and emphasis of ENT in GP practice. 95.9% of our Doctors are aware and emphasis that ENT forms an important part of Independent Practice. It was clear that 85.9 % of our doctors would welcome further exposure in ENT in the form of workshops and postgraduate training programmes. Family doctors believe that they need to know more about ENT than otolaryngologists believe¹⁴.

Most Doctors (56.6%) felt that their exposure to ENT was not adequate, specifically in Rhinology. Rhinology conditions were grouped accordingly as: Infective and/ Allergic Rhinitis, Sinusitis, Snoring

and sleep apnoea, Septal deviation, Nasal polyps, Epistaxis and Sinonasal mass and were the most prevalent of conditions seen in both Private and Public sectors. The commonest condition seen in Private was Pharyngitis, Tonsillitis, Laryngitis, Croup and in the Public sector, Gastro oesophageal Reflux disease was the commonest. These conditions do not require specialist intervention but appropriate medical treatment and may be easily managed at a Primary Care Level.

The commonest symptom - Sore Throat correlated with the commonest condition -Pharyngitis, Tonsillitis, Laryngitis, Croup. There was a prevalence of Nasal conditions in both Public and Private sectors. This coupled with the need for further teaching in Rhinology is very relevant for when assessing an undergraduate curricula or training programme for GP's. A needs assessment for a curricula may be designed from the above study that highlights the inadequacies of the three major fields of ENT – Rhinology, Otolology and Throat conditions.

Otolology emergencies e.g. Foreign body in ears are the most prevalent emergencies seen to both Public and Private sectors. There were significant P values for 4 other emergencies Foreign body in Nose - 0.002, Nasal Septal Haematoma/Nasal Fracture - 0.026, Malignant Otitis Externa -0.027, Ludwigs Angina – 0.013, that were seen in equal proportion to both Public and Private sectors. These emergencies would be important in evaluating the knowledge of the Doctors and designing a curricular for training.

In this study it is clearly evident that the Private sector doctors/ GPs are vital in certain districts where an ENT specialists is not available. GPs becomes the first line for medical care providing 70% of total health care to patients¹⁵. Providing workshops or refresher courses in ENT conditions would be beneficial for our GP's and Public sector doctors. Referrals by Doctors with more than ten years of experience are mainly to the Local hospitals (Public/ Private).

The Hospital Association of South Africa (HASA) commissioned an Econex report in August 2015¹⁶ whereby they highlighted the shortage of doctors in South Africa and identified the determinants and solutions to which the private sector may contribute to medical education for doctors. There are already examples where the private health sector and public universities have collaborated effectively to lessen the training burden on public medical schools. For example Mediclinic South Africa (MCSA), host internal medicine students from Stellenbosch University (US) to complete a portion of their clinical training. This may be a way forward for training and exposure for further ENT. Importance is rightly placed in training our Doctors and perhaps incorporating the Private sector in KZN to assist with training.

Recommendations

For Medical schools:

- Restructure curricula based on the scope of ENT encountered from the ENT GP survey
- Extend the length of clinical exposure to ENT and perhaps include further ENT exposure in Paediatrics, Family Medicine, General Medicine and Emergency Module
- Integrated approach towards teaching and learning of ENT including the use of simulation training and online virtual learning, alongside clinical rotations
- Incorporate Private sector Hospitals and or Private ENT specialists in teaching clinical modules

For Internship Doctors and Community Service Officers

- Provide rotations in academic ENT departments as well as satellite Hospitals as further ENT exposure may encourage interest in Specialist ENT training

For GP's and Public Care Physicians:

- Provide ENT based Training and Workshops , CME's and Refresher courses.

For DOH:

- In particular to highlight to the Department of Health that bringing specialist care to the communities is vital however training in ENT does not reduce referral rates to Hospitals for further management.
- The focus should be on Hospital-based and or Primary Care level training of Primary care Physicians (Medical Officers, Interns or CSO's) in ENT and training Nursing staff in ENT (able to recognise symptoms, basic examination, treat minor conditions effectively and or refer emergencies accordingly).
- In keeping with the proposed NHI medical program greater involvement by the private sector in medical training should be investigated
- The Private sector may also assist in the need for more healthcare resources to rural areas, where a shortage of Doctors are a problem.

Study Limitations

The study did not aim to provide objective validation or disrepute the training of Doctors nor discredit the HPCSA guidelines for Independent Practice but to provide an insight into the perceptions of training and exposure in ENT and emphasise the vast scope encountered.

Training institutions will have access to ENT services and Primary Care Physicians may be knowledgeable in ENT. As with any survey individuals were not forced to participate and hence not all doctors in KZN participated however a fair representation was reflected from most KZN districts.

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Appendices

Appendix 1: The final Study Protocol

Research Title: Assessment of ENT knowledge among General and Primary Care Practitioners

Researcher Details:

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Background/Rationale

The KZN ENT department is inundated with patient referrals from across KwaZulu-Natal. In order to plan for an effective service and utilise the limited specialist workforce optimally it is pertinent that time spent by registrars and consultants servicing the respective hospitals is focused on ENT pathology that cannot be managed at a Primary Care level. Undergraduate ENT training provides junior doctors with skills and knowledge useful for independent practice as generalists.

Approximately 20% of new consultations to general practitioners are complaints of the ear, nose, and/or throat and this estimate raises up to 50% when consulting children (4). A survey of the current state of ENT knowledge would help to highlight gaps in knowledge and training. Results may then be used to supplement and improve undergraduate training and for the introduction of training programmes or workshops in ENT for junior doctors, General Practitioners and Casualty Officers.

Research Question

Is the current state of ENT knowledge adequate for safe and effective Generalist Independent Practice?

1. Aims:

1.1. To understand the exposure and experience to ENT and to evaluate the knowledge of ENT amongst Interns, Community Service Doctors, Medical Officers (Junior and Senior) i.e. [Primary care providers in Government (PCPG)] and General Practitioners [Primary care providers in Private Sector (PCPP)].

2. Objectives:

2.1. To determine the extent of ENT pathology encountered by Primary care providers in the Government i.e. Interns, Community Service Doctors, Medical Officers (Junior and Senior) and Primary care providers in Private Sector i.e. General Practitioners by way of a survey.

2.2. To develop a questionnaire that evaluates the current state of knowledge and confidence level with procedures in ENT amongst Primary care providers in Government and in Private Practice.

3. Outcome:

3.1. To use information obtained from the survey and the questionnaire to highlight gaps in knowledge and to establish a need and plan for further ENT training amongst Primary care providers in Government and in Private.

4. Type of research

The study is both a quantitative and qualitative one using a cross sectional and explorative design.

5. Research Methodology

5.1 Study setting:

The study will be set amongst Doctors based at 10 provincial hospitals (rural and urban) and their respective Community Health Centres. The hospitals will be those that are currently involved in academic training i.e. tertiary training centres for registrars and medical students (i.e. A) and those benchmarked for the Decentralised training platform (i.e. B) for medical students training (rural and urban) and their Community Health centres.

A. The tertiary training centres for registrars admitted to UKZN medical school:

Inkosi Albert Luthuli Hospital

King Edward VIIth hospital

Addington Hospital

RK Khans Hospital

Stanger Hospital

Community health centres &/ Clinics:

Kwa Mashu
Newton A
Inanda C
Phoenix CHC
Tongaat CHC

B. The Decentralised training platform areas for UKZN medical school, which are 5 hospitals currently bench marked for use:

Ugu district-Port Shepstone Hospital
Uthungulu/Umkhanyakude/ Zululand district-Lower Umfolozi /Ngwelezane Hospital
Umgungundlovu district-PMB complex- Northdale, Greys and Townhill Hospital
Amajuba district- Newcastle and Madadeni Hospital

Community health centres &/ Clinics:

Turton CHC
Eastboom Clinic/ Imbalenhle CHC
Eshowe Clinic/ Nseleni CHC
Newcastle PHC/ Madadeni Clinic

The survey will be set amongst General practitioners and Primary care providers in the Government sector within rural and urban areas across KZN. Selection thereof will be convenience sampling at respective GP Forums (ENT and non ENT related) and hospitals benchmarked for the Decentralisation of training and the current Centralised training facilities.

ENT specialists working within KZN will be used to cross reference the questionnaire formulated from the survey and serve as the control group.

The questionnaire will then be given to the participants of the survey and a core ENT knowledge will be formulated.

5.2 Study Design

The study consists of three phases:

Phase 1:

A Survey of the extent of ENT pathology encountered by General Practitioners and Primary care providers in the Government of KZN. (Appendix A)

Methodology: Cross sectional study of ENT pathology encountered by General Practitioners in their allocated health districts and Primary care providers in the Centralised and Decentralised training areas. A pilot study of the survey will be sent electronically to 5 General Practitioners and 5 Public Sector Primary care Providers to evaluate the research tool for relevance and content and clarity. The survey will elicit both qualitative and quantitative data. It has been designed using an application in Google Forms. It will be distributed via electronic mail [i.e. a hyperlink (<http://goo.gl/forms/FLCgOKIThS>) created to the Google Form site in which the Survey Form is saved]. Hard copy distribution will be used as well as appropriate forums where Generalists congregate. Details of emails may be obtained from telephonic conversation with the doctors and or organisations i.e. HPCSA, SAMA, KZN MCC, IPA (Independent Practitioners Association). Once the survey is complete and it is submitted (i.e. choosing the submit button), it will automatically be saved in the Google Forms site of which the researcher has access to. Hard copy distribution may also be used in appropriate practitioner forums. Monthly GP forums (ENT or non ENT related) may be attended for hard copy distribution of the Survey and Focus group discussions and Interviews may be conducted at these Forums about the survey in order to highlight further needs and knowledge required for ENT in GP practice. The survey will give us a scope of frequency and understanding of ENT Pathology encountered in KZN as a General Practitioner.

Phase 2:

Develop a questionnaire using the data obtained from the above survey and cross reference it with ENT specialists in KZN.

Methodology: Based on the outcomes from phase 1, a questionnaire will be designed using Google Forms application. It will be distributed via electronic mail or hard copy to ENT Specialists, who will serve as a control group for the questionnaire. Amendments to the questionnaire will be allowed in a pilot study conducted with a panel of at least 5 ENT consultants not involved in academic teaching of the ENT registrars at UKZN Medical School. The pilot group will not be included in the final study data. Once the questionnaire is completed, it will be a reference of ENT knowledge based on the current ENT Specialists practicing in KZN.

Phase 3:

To use the questionnaire to evaluate the knowledge of ENT amongst Interns, Community Service Doctors, Medical Officers (Junior and Senior) i.e. [Primary care providers in Government (PCPG)] and General Practitioners [Primary care providers in Private (PCPP)].

Methodology: Cross sectional study will encompass distribution of the questionnaire using explorative design to the respective Doctors i.e. General Practice or Government employed Medical Doctors. Once again distribution will be in the form of electronic mail or hard copy if needed.

5.3 Target Population

They are Primary care providers in Government (PCPG) consisting of Interns, Community Service Doctors and Medical Officers (Junior and Senior) and Primary care providers in Private Sector (PCPP) who are the General Practitioners. As well as ENT specialists practicing in KZN.

5.4. Study population

5.4.1. Inclusion

- Interns and Community service doctors in KZN.
- Medical practitioners registered as Independent Practitioners.
- ENT specialists registered as part of the ENT Society and practicing in KZN.

5.4.2 Exclusion

- Medical doctors working and training in an ENT academic unit in government i.e. ENT Medical Officers and Registrars.
- ENT consultants involved in teaching and training ENT registrars at UKZN Medical School.

5.5. Sampling

5.5.1. Method of selecting sample

Phase 1:

The sampling methods that will be employed in this research are convenience sampling. A list of the practising General Practitioners obtained from the IPA (Independent Practice Association) and or KZN MCC Forum meetings. Doctors working within the Centralised and Decentralised Hospital training sites will be asked via email to participate in the survey.

- Testing of the survey will be done in a pilot study given to 5 General Practitioners and 5 Primary care providers in government (of whom will be excluded from the actual survey and questionnaire).
- General Practitioners in KZN will be selected randomly from a convenience sample and sent the survey electronically or given hard copies thereof at GP conferences or Forum meetings.
- Primary care providers in the Government working at Centralised and Decentralised hospital areas will be selected randomly to participate in the survey.

Phase 2:

A minimum of 5 ENT consultants not involved in teaching ENT registrars at UKZN Medical School will be selected to view and amend the Knowledge Questionnaire in a pilot study to test the questionnaire as a research tool.

ENT specialists in KZN may be obtained from the ENT society website or their respective Private Hospitals.

- ENT specialists selected via convenience sampling will be sent the survey electronically or via hard copy delivered to their practice or targeted at the annual ENT conference.

Phase 3:

Doctors including Interns, Community Service Doctors and Medical Officers (Junior and Senior), working within the 10 Provincial Hospitals and 10 Community Health Clinics and or clinics as outlined above will be part of the study. The questionnaire will be given electronically via email or hard copy if poor electronic response. Collection of data will then follow if hard copies distributed and interpretation of the data.

5.5.2. Size of sample

Phase 1:

- Pilot study to test the survey as a research tool given to 10 doctors (GPs and PCPG)
- 100 General Practitioners in Private and 100 Primary care providers in the Government

Phase 2:

- 5 ENT Specialists to test and amend the Questionnaire developed from the survey
- 50 ENT Specialists

Phase 3:

- 200 Doctors comprising of General Practitioners and Primary Care Providers working in Government Institutions (Centralised training areas and Decentralised training areas) -Interns, Community Service Doctors and Medical Officers (Junior and Senior)

5.5.3. Data sources

5.5.3.1. Data collection techniques

Data will be collected via the Survey (Annexure A) online or via hard copy. The survey will be used to gather information (Graduating University; Number of years practicing; Practicing Area / District; Local referral hospital; Nearby ENT specialist; ENT work experience or training; perceptions of ENT training needs for General Practice; Listed ENT Symptoms, Conditions, Emergencies treated and referrals to Specific disciplines or personnel mentions) that will provide a scope of ENT exposure and reflect a need for ENT expertise.

The survey may be completed online and is stored in the researcher's Google Forms account. The survey may also be hand delivered to the General Practitioners' practice or given to the General Practitioners at their weekly or monthly Society meeting. Focus group discussions held at GP Forums (ENT and non ENT related) about the survey and or general ENT related concerns amongst GPs practicing will also be conducted and data obtained will be used to support the Survey content and appropriateness for designing the ENT questionnaire. Primary care Providers in the Government Sector will also receive the survey by way of electronic or hard copy delivered to their respective curators and line managers and asked to complete. ENT Medical Officers or Registrars may be used to deliver the hard copy survey and collect the information required for the research.

Once the survey data has been collected. Phase 2 will be implemented. The data collected will be used to develop a questionnaire based on the ENT scope, exposure and management within General Practice and Government practice. The questionnaire is tested and approved by the ENT consultants involved in teaching ENT Registrars at UKZN in a pilot study. The approved questionnaire will be distributed to ENT Specialists via electronic mail or hard copy delivered and they will be asked to part take in the questionnaire. A reference of ENT knowledge will be established and questionnaire will be validated. The validated questionnaire will be sent via electronic mail or hard copy delivered to Interns, Community Service doctors, Medical officers and General Practitioners to assess their ENT Knowledge. A level of ENT Knowledge will be established and highlighted gaps in knowledge and training will be used to establish a need for further ENT training amongst Primary care providers in Government and in the Private sector.

5.5.4. Measurement to ensure validity

5.5.4.1. Internal validation

A pilot group comprising General Practitioners not part of the sample group and ENT consultants not involved in teaching ENT Registrars at UKZN will test and approve the designed survey and questionnaire.

5.5.4.2. Reduction of bias

Individuals involved in the pilot study to test the research tools such as the survey and the questionnaire will not be part of the final data collection.

5.5.4.3. Selection bias

Random selection within the convenience sampling of the individuals will be taken i.e. random selection of General Practitioner within a specific conference or forum meetings (ENT and non ENT related). Non ENT GP Forum meetings may serve as a control group against GPs attending ENT Forums to reduce selection bias. Primary Care Providers within the Government will be randomly selected from their respective Provincial Hospitals and Community Health Clinics within their districts.

5.5.4.4. Information bias

The survey instrument comprises a list of common ENT symptoms, conditions and emergencies. The sample study subjects will not be informed about the content of the survey prior to the survey conducted or the contents of the questionnaire prior to the questionnaire being filled. Closed ended knowledge questions with specific answers will be part of the questionnaire that will be utilised to minimise information bias. Focus group discussions about the survey content will be done after participation of the survey.

5.5.4.5. External validation

The questionnaire will be given to ENT specialists that may practice outside KZN to externally validate the research instrument.

5.6. List of variables

The General Practitioner conferences and or meetings are specific and annual. The intake of Interns and Community Service Doctors to respective Provincial hospitals and Community Service Centres are variable, subject to allocation availability and time served to the HPCSA.

5.7. Plan for data collection

The survey data may be collected electronically or given to the GPs at annual conferences or Forum meetings. Data may also be collected from Primary Care Providers via electronic mail or hard copies at their respective hospitals of service. Once questionnaires are formulated and cross referenced against the control group, it will be distributed to the doctors via email/ electronic copy or hard copy. The Google forms automatically up loads all information to the researcher's private login and data may be collated and viewed. If a poor electronic response is obtained, then hard copies of the questionnaires will be sent or personally taken to the doctors in charge of the various hospital casualties and or clinic's within the study setting. Manual retrieval of data may then be done.

5.8. Plan for data handling/processing

All surveys and questionnaires data will be entered by the researcher into a statistical program.

5.9. Statistical methods

The data collected will be captured and subsequently analysed using the Statistical Package for Social Sciences (SPSS version 22). Descriptive statistics such as frequencies, percentages, mean, median, standard deviation and interquartile range will be used to summarize results. Scores ranging from zero to three will be assigned to questions relating to ENT symptoms, conditions and emergencies. The aggregate score will then be used as a summary measure of the ENT symptoms, conditions and emergencies that they deal with monthly. The results will be presented in tables and graphically using bar charts pie charts.

5.10. List of Limitations

- General Practitioners who attend meeting that involve CMEs are well informed and may be educated on the subjects involving ENT.
- Training institutions will have access to ENT services and Primary Care Providers may be knowledgeable in ENT.

5.11. List of associations to be measured

- The Hospital sites for the Decentralised Platform may be assessed with respect to their capabilities and expertise of the doctors to host academic students
- ENT scope within the Urban versus Rural may arise from the GP survey
- Hospitals with access to ENT doctors versus those that don't have the access and the outcome thereof from the questionnaire.

5.12. Ethical considerations

- Humanities and Social Sciences Research Ethics Committee
- Permission from the Department of Health KZN and the respective hospital sites will be sort to undertake the research on their premises.

5.13. Work Plan

5.13.1 Study period /Time lines

2015	J	F	M	A	M	J	J	A	S	O	N	D
Literature Review		■	■	■								
Develop and Submit protocol to School					■	■	■	■				
Survey/ Data collation- Phase 1									■	■	■	■
2016	J	F	M	A	M	J	J	A	S	O	N	D
Write-up of Phase 1 for MMed and Submission	■	■	■									
Analysis & Development of Questionnaire				■	■	■						
Questionnaire/Data collation- Phase 2 & 3							■	■	■	■	■	■
2017	J	F	M	A	M	J	J	A	S	O	N	D
Analysis	■	■	■									
Write-up and Submission of Research Question				■	■	■						

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11. Carr MM, Brown DH, Reznick RK. Needs assessment for an undergraduate otolaryngology curriculum. *Otolaryngol Head Neck Surg.* 1999;120(6):865–8.
12. Farooq M, Ghani S, Hussain S. Prevalence of Ear , Nose & Throat diseases and Adequacy of ENT training among General Physicians. *Intl J Pathology.* 2016;14(3):113–5.

Annexure A-ENT SURVEY IN GENERAL PRACTICE

Thank you for participating in this survey. This survey is confidential to researcher and will not reveal the participants identity or work site or prejudice the University of their Undergraduate Study. It is purely a survey of the ENT exposure and frequency in General Practice. It may be used to improve undergraduate ENT training or provide further education for Medical doctors with an interest in ENT speciality.
ENT GP Survey * Required

By clicking Yes, you consent that you are willing to answer the questions in this survey.

Yes

Name: *

Age: *

Gender: *

Graduating University: *

Number of years practising: *

Area/District: *

Select the areas where you feel you have received adequate ENT training as an undergraduate? *

Ears Yes

Nose Yes

Throat Yes

No

No

No

How much ENT teaching did you receive in Medical School? *

< 2 weeks

2 weeks to 1 month

1 to 2 months

> 2 months

Do you have work experience in ENT speciality? *

Yes

No

Have you attended any ENT workshops or courses? *

Yes

No

Do you think further emphasis of ENT training is required for GP practice? *

Yes

No

Are there any ENT specialists within your district? *

Yes

No

Does your nearest referral hospital have an ENT specialist? *

Yes

No

How many patients do you see within a month? Please specify on average.

How many times in the last month have the following symptoms presented? *

	0 - 5	6 - 14	15 - 25	> 25 times
Sore Throat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dysphonia/hoarseness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Globus feeling in the throat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Difficulty/noisy breathing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hearing loss	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Otalgia	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Discharging ear	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tinnitus	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dizziness/Vertigo	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Anosmia/Hyponosmia	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Rhinitis	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Facial weakness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

How many times in the last month have you dealt with the following ENT conditions? *

	0 - 5	6 - 14	15 - 25	> 25 times
Pharyngitis, Tonsillitis, Laryngitis, Croup	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Quinsy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Salivary stones	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Glandular fever	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Parotid masses	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Oral Ulcers/ Candida/Herpes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Gastro-oesophageal reflux disease	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	0 - 5	6 - 14	15 - 25	> 25 times
Infective and/ Allergic Rhinitis	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sinusitis	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sinonasal mass	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nasal polyps	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Epistaxis	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Septal deviation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Otitis media (suppurative/secretory)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Otitis externa	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Eustation tube dysfunction	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Perforated tympanic membrane	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wax impaction in Ear	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cholesteatoma	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ménière's disease	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Benign paroxysmal positional vertigo	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Neck masses	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Suspected Head and neck cancers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Temporo-mandibular pain	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Trigeminal neuralgia	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ramsey Hunt syndrome	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Snoring and sleep apnoea	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ENT manifestation of systemic diseases	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

How many times in the last month have you dealt with the following ENT Emergencies? *

	0 - 5	6 - 14	15 - 25	> 25 times
Periorbital cellulitis	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mastoiditis	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Airway Obstruction	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sudden Sensorineural hearing Loss	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Facial Nerve Palsy/Bell's Palsy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Deep space neck abscesses	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ludwigs Angina	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Auricular haematoma/ Perichonidritis	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nasal Septal haematoma/ Nasal Fracture	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Foreign body in Ears	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Foreign body in Nose	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Foreign body in Throat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Malignant Otitis Externa	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Approximately what percentage of patients have you referred to the following medical facilities in the last month? *

	< 25%	25% - 50%	50% - 75%	> 75%
Speech Therapists	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Audiologists	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Oncologists	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Paediatrician	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ENT Surgeon	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Local Hospital	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Submit

Appendix 2: The Guidelines for Authorship for the Journal selected for submission of the manuscript

<http://www.samj.org.za/index.php/samj/about/submissions>

General article format/layout

Accepted manuscripts that are not in the correct format specified in these guidelines will be returned to the author(s) for correction, which will delay publication.

General:

- Manuscripts must be written in UK English.
- The manuscript must be in Microsoft Word format. Text must be single-spaced, in 12-point Times New Roman font, and contain no unnecessary formatting (such as text in boxes).
- Please make your article concise, even if it is below the word limit.
- Qualifications, **full** affiliation (department, school/faculty, institution, city, country) and contact details of ALL authors must be provided in the manuscript and in the online submission process.
- Abbreviations should be spelt out when first used and thereafter used consistently, e.g. 'intravenous (IV)' or 'Department of Health (DoH)'.
- Include sections on Acknowledgements, Conflict of Interest, Author Contributions and Funding sources. If none is applicable, please state 'none'.
- Scientific measurements must be expressed in SI units except: blood pressure (mmHg) and haemoglobin (g/dL).
- Litres is denoted with an uppercase L e.g. 'mL' for millilitres).
- Units should be preceded by a space (except for % and °C), e.g. '40 kg' and '20 cm' but '50%' and '19°C'.
- Please be sure to insert proper symbols e.g. μ not u for micro, α not a for alpha, β not B for beta, etc.
- Numbers should be written as grouped per thousand-units, i.e. 4 000, 22 160.
- Quotes should be placed in single quotation marks: i.e. The respondent stated: '...'
- Round brackets (parentheses) should be used, as opposed to square brackets, which are reserved for denoting concentrations or insertions in direct quotes.
- If you wish material to be in a box, simply indicate this in the text. You may use the table format –this is the *only* exception. Please DO NOT use fill, format lines and so on.

Research

Guideline word limit: 4 000 words

Research articles describe the background, methods, results and conclusions of an original research study. The article should contain the following sections: introduction, methods, results, discussion and conclusion, and should include a structured abstract (see below). The introduction should be concise – no more than three paragraphs – on the background to the research question, and must include references to other relevant published studies that clearly lay out the rationale for conducting the study. Some common reasons for conducting a study are: to fill a gap in the literature, a logical extension of previous work, or to answer an important clinical question. If other papers related to the same study have been published previously, please make sure to refer to them specifically. Describe the study methods in as much detail as possible so that others would be able to replicate the study should they need to. Results should describe the study sample as well as the findings from the study itself, but all interpretation of findings must be kept in the discussion section, which should consider primary outcomes first before any secondary or tertiary findings or post-hoc analyses. The conclusion should briefly summarise the main message of the paper and provide recommendations for further study.

Select figures and tables for your paper carefully and sparingly. Use only those figures that provided added value to the paper, over and above what is written in the text.

Do not replicate data in tables and in text .

Structured abstract

- This should be 250-400 words, with the following recommended headings:
- **Background:** why the study is being done and how it relates to other published work.
- **Objectives:** what the study intends to find out
- **Methods:** must include study design, number of participants, description of the intervention, primary and secondary outcomes, any specific analyses that were done on the data.
- **Results:** first sentence must be brief population and sample description; outline the results according to the methods described. Primary outcomes must be described first, even if they are not the most significant findings of the study.
- **Conclusion:** must be supported by the data, include recommendations for further study/actions.
- Please ensure that the structured abstract is complete, accurate and clear and has been approved by all authors.
- Do not include any references in the abstracts.

[Here](#) is an example of a good abstract.

Main article

All articles are to include the following main sections: Introduction/Background, Methods, Results, Discussion, Conclusions.

The following are additional heading or section options that may appear within these:

- Objectives (within Introduction/Background): a clear statement of the main aim of the study and the major hypothesis tested or research question posed
- Design (within Methods): including factors such as prospective, randomisation, blinding, placebo control, case control, crossover, criterion standards for diagnostic tests, etc.
- Setting (within Methods): level of care, e.g. primary, secondary, number of participating centres.
- Participants (instead of patients or subjects; within Methods): numbers entering and completing the study, sex, age and any other biological, behavioural, social or cultural factors (e.g. smoking status, socioeconomic group, educational attainment, co-existing disease indicators, etc)that may have an impact on the study results. Clearly define how participants were enrolled, and describe selection and exclusion criteria.
- Interventions (within Methods): what, how, when and for how long. Typically for randomised controlled trials, crossover trials, and before and after studies.
- Main outcome measures (within Methods): those as planned in the protocol, and those ultimately measured. Explain differences, if any.

Results

- Start with description of the population and sample. Include key characteristics of comparison groups.
- Main results with (for quantitative studies) 95% confidence intervals and, where appropriate, the exact level of statistical significance and the number need to treat/harm. Whenever possible, state absolute rather than relative risks.
- Do not replicate data in tables and in text.
- If presenting mean and standard deviations, specify this clearly. Our house style is to present this as follows:

- E.g.: The mean (SD) birth weight was 2 500 (1 210) g. Do not use the \pm symbol for mean (SD).
- Leave interpretation to the Discussion section. The Results section should just report the findings as per the Methods section.

Discussion

Please ensure that the discussion is concise and follows this overall structure – sub-headings are not needed:

- Statement of principal findings
- Strengths and weaknesses of the study
- Contribution to the body of knowledge
- Strengths and weaknesses in relation to other studies
- The meaning of the study – e.g. what this study means to clinicians and policymakers
- Unanswered questions and recommendations for future research

Conclusions

This may be the only section readers look at, therefore write it carefully. Include primary conclusions and their implications, suggesting areas for further research if appropriate. Do not go beyond the data in the article.

Appendix 3: Ethical approvals

1. Change of Supervisor



1 November 2017

Dr Reshna Mungar 201501673
School of Medicine
Medical School Campus

Dear Dr Mungar

Protocol reference number: HSS/1105/015M
Project title: Assessment of ENT knowledge among General and Primary Care Practitioners

Approval notification – Amendment Application

This letter serves to notify you that your application for an amendment dated 24 October 2017 has now been granted Full Approval.

- Change in Supervisor from Dr Y Saman to Dr TK Naidu

Any alterations to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study must be reviewed and approved through an amendment /modification prior to its implementation. In case you have further queries, please quote the above reference number. PLEASE NOTE: Research data should be securely stored in the discipline/department for a period of 5 years

The ethical clearance certificate is only valid for a period of 3 years from the date of issue. Thereafter Recertification must be applied for on an annual basis.

Best wishes for the successful completion of your research protocol.

Yours faithfully

Dr Shenuka Singh (Chair)
Humanities & Social Sciences Research Ethics Committee

/pm

cc Supervisor Dr TK Naidu
cc Academic leader Dr Tivani P Mashamba-Thompson
cc School Admin. Ms Devi Arumugam

Humanities & Social Sciences Research Ethics Committee
Dr Shenuka Singh (Chair)
Westville Campus, Govan Mbeki Building
Postal Address: Private Bag X54001, Durban 4000
Telephone: +27 (0) 31 260 3587/8350/4557 Facsimile: +27 (0) 31 260 4809 Email: simban@ukzn.ac.za / simmanm@ukzn.ac.za / mohuno@ukzn.ac.za
Website: www.ukzn.ac.za

1910 - 2010
100 YEARS OF ACADEMIC EXCELLENCE

Founding Campuses: Edgewood Howard College Medical School Pietermaritzburg Westville

2. HSSREC Approval



19 November 2015

Dr Reshna Mungar 201501673
School of Medicine
Medical School Campus

Dear Dr Mungar

Protocol reference number: HSS/1105/015M
Project title: Assessment of ENT knowledge among General and Primary Care Practitioners

Full Approval – Expedited Application

In response to your application received on 06 November 2015, the Humanities & Social Sciences Research Ethics Committee has considered the abovementioned application and the protocol have been granted FULL APPROVAL.

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment/modification prior to its implementation. In case you have further queries, please quote the above reference number.

PLEASE NOTE: Research data should be securely stored in the discipline/department for a period of 5 years.

The ethical clearance certificate is only valid for a period of 3 years from the date of issue. Thereafter Recertification must be applied for on an annual basis.

I take this opportunity of wishing you everything of the best with your study.

Yours faithfully

Dr Shenuka Singh (Chair)

/ms

cc Supervisor: Dr Yougan Saman
cc Academic Leader Research: Professor M Mars
cc School Administrators: Ms Devi Arumugam

Humanities & Social Sciences Research Ethics Committee

Dr Shenuka Singh (Chair)

Westville Campus, Govan Mbeki Building

Postal Address: Private Bag X54001, Durban 4000

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Website: www.ukzn.ac.za



100 YEARS OF ACADEMIC EXCELLENCE

Founding Campuses: ■ Edgewood ■ Howard College ■ Medical School ■ Pietermaritzburg ■ Westville

3. Department Of Health KZN Approval



health
Department:
Health
PROVINCE OF KWAZULU-NATAL

Physical Address: 330 Langalibalele Street, Pietermaritzburg
Postal Address: Private Bag X9051
Tel: 033 395 2805/ 3188/ 3123 Fax: 033 394 3782
Email: hrkm@kznhealth.gov.za
www.kznhealth.gov.za

DIRECTORATE:

Health Research & Knowledge
Management

Reference: 315/15
KZ_2015RP32_132

Date: 10 November 2015

Dear Dr R. Mungar
Email: rmungar@gmail.com

Approval of research

1. The research proposal titled '**Assessment of ENT knowledge among general and primary care practitioners**' was reviewed by the KwaZulu-Natal Department of Health.

The proposal is hereby **approved** for research to be undertaken electronically among ENT specialists and Medical Officers using Google forums.

2. You are requested to take note of the following:
 - a. Make the necessary arrangement with the identified facility before commencing with your research project.
 - b. Provide an interim progress report and final report (electronic and hard copies) when your research is complete.
3. Your final report must be posted to **HEALTH RESEARCH AND KNOWLEDGE MANAGEMENT, 10-102, PRIVATE BAG X9051, PIETERMARITZBURG, 3200** and e-mail an electronic copy to hrkm@kznhealth.gov.za

For any additional information please contact Mr X. Xaba on 033-395 2805.

Yours Sincerely

Dr E Lutge

Chairperson, Health Research Committee

Date: 11/11/15

Appendix 4: Data collection tools

Hyperlink to Survey that was emailed and placed on DOH website (<http://goo.gl/forms/FLCgOKIhS>)

ENT GP Survey

Thank you for participating in this survey. This survey is confidential to the researcher and will not reveal the participants identity or work site or prejudice the University of their Undergraduate Study. It is purely a survey of the ENT exposure and frequency in General Practice and the Public Sector. It may be used to improve undergraduate ENT training or provide further education for Medical doctors with an interest in ENT speciality.

*** Required**

By clicking Yes, you consent that you are willing to answer the questions in this survey. *

Yes

Name: *

Age: *

Gender: *

Rank *

General Practitioner

Community Service Officer

Medical Officer

Intern

Other:

Graduating University: *

Number of years practising: *

Please specify Hospital or Clinic Name or if in Private Practice: *

Appendix 5: Raw data

Excel Sheet

data v2 (backup) - Excel

FILE HOME INSERT PAGE LAYOUT FORMULAS DATA REVIEW VIEW

W1 ENT Speciality Experience

	W	X	Y	Z	AA	AB	AC	AD	
1	ENT Speciality Experience	ENT GP Training	Training in Medical School	Symptoms [Sore Throat]	Symptoms [Dysphonia/hoarseness]	Symptoms [Globus feeling in the throat]	Symptoms [Difficulty/noisy breathing]	Symptoms [Hearing loss]	Symptom
2	No	Yes	> 2 months	0 - 5	6 - 14	0 - 5	15 - 25	15 - 25	0 - 5
3	No	Yes	< 2 weeks	15 - 25	0 - 5	0 - 5	0 - 5	6 - 14	15 - 25
4	No	Yes	2 weeks to 1 month	15 - 25	6 - 14	0 - 5	15 - 25	0 - 5	6 - 14
5	No	Yes	2 weeks to 1 month	6 - 14	0 - 5	6 - 14	0 - 5	15 - 25	0 - 5
6	No	Yes	< 2 weeks	more than 25	0 - 5	0 - 5	6 - 14	0 - 5	0 - 5
7	No	Yes	2 weeks to 1 month	6 - 14	0 - 5	0 - 5	6 - 14	0 - 5	6 - 14
8	No	Yes	< 2 weeks	15 - 25	6 - 14	0 - 5	0 - 5	0 - 5	6 - 14
9	No	Yes	2 weeks to 1 month	6 - 14	0 - 5	0 - 5	6 - 14	15 - 25	6 - 14
10	Yes	Yes	< 2 weeks	6 - 14	0 - 5	0 - 5	0 - 5	6 - 14	0 - 5
11	No	Yes	< 2 weeks	6 - 14	0 - 5	0 - 5	0 - 5	6 - 14	0 - 5
12	No	Yes	1 to 2 months	more than 25	0 - 5	0 - 5	more than 25	6 - 14	0 - 5
13	No	Yes	1 to 2 months	0 - 5	6 - 14	0 - 5	6 - 14	0 - 5	6 - 14
14	No	Yes	2 weeks to 1 month	0 - 5	0 - 5	0 - 5	6 - 14	0 - 5	0 - 5
15	No	Yes	2 weeks to 1 month	6 - 14	0 - 5	0 - 5	0 - 5	0 - 5	6 - 14
16	No	Yes	2 weeks to 1 month	6 - 14	0 - 5	0 - 5	6 - 14	0 - 5	0 - 5
17	No	Yes	2 weeks to 1 month	15 - 25	0 - 5	0 - 5	15 - 25	6 - 14	0 - 5
18	Yes	Yes	< 2 weeks	15 - 25	0 - 5	0 - 5	6 - 14	6 - 14	0 - 5
19	No	Yes	> 2 months	more than 25	0 - 5	0 - 5	15 - 25	0 - 5	15 - 25
20	No	Yes	2 weeks to 1 month	0 - 5	0 - 5	0 - 5	more than 25	0 - 5	0 - 5
21	No	Yes	> 2 months	6 - 14	0 - 5	0 - 5	0 - 5	0 - 5	6 - 14