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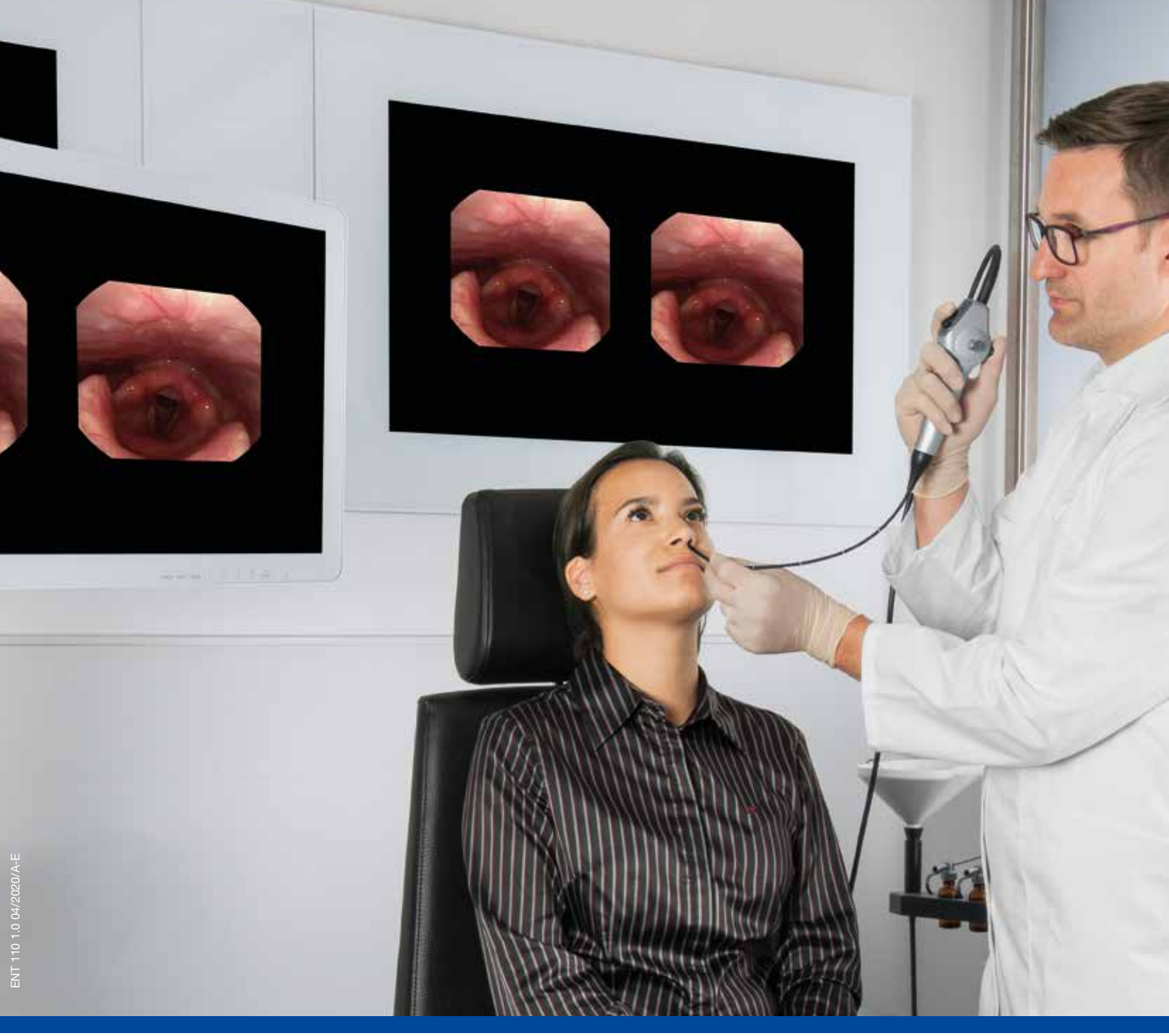
GLOBAL HEALTH JOURNAL

2023

GLOBAL EQUITY IN SURGERY



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GLOBAL HEALTH JOURNAL

2023

GLOBAL EQUITY IN SURGERY

Published in 2023 for ENT UK Global Health

Compiled by: Cheka Spenser

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Designed and Printed by: www.beamreachuk.co.uk

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foreword

As individuals, we are inherently destined to live and thrive in communities, and we each bring our own personal skills to the benefit of society. In essence, we make our biggest contributions as a team. When it comes to global health, our greatest achievements are gained by working together. It has been said that by 'working together we can build a better world where everyone thrives in dignity and equality on a healthy planet'

ENT-related conditions in resource poor countries cause significant medical problems, with simple disorders becoming complex and tumours presenting at an advanced stage, all due to the absence of specialist medical care. The ENT UK Global Health committee seeks to improve the specialist ENT medical care of such communities to prevent such situations from occurring, and to provide the correct resources when they do arise.

As president of ENT UK, I wish to thank both Mr Vijay Pothula, the past chairman, and Mr Nick Eynon Lewis, the current chairman of Global Health, for leading the group with these important health care issues.

This particular Global Health Journal, edited by Cheka Spencer, Vice Chairman of the group, highlights many of the global collaborations, connections and partnerships that have been established to achieve this vision. Over the last year, the Global Health committee has been able to utilise charitable funds to support and sponsor three international projects with grants of £2000 for each individual project.

We are really grateful to our industry partners for their support and encourage them to continue with their support for our Global Health Journal and the important projects that do so much to help such poorly resourced communities.

Andrew C. Swift MB, ChB, ChM, FRCS, FRCSEd
Consultant Rhinologist and ENT Surgeon
Liverpool Head and Neck Centre
President ENT UK

editor's note

The ENT UK Global Health committee wishes you a Happy New Year! It is a special year given that we are all convening in Birmingham for BACO International 2023. This year the committee has been working hard with its efforts in aiding 'Global Equity in ENT Surgery'. We held a very successful virtual conference with presenters from around the world. The winners of the free paper presentations – whose abstracts are published here- were consequently given the opportunity to publish their papers in the Lancet Global Health Journal. The competition for our grant applications – each amounting to £2000, was fierce and we were able to award three grants this year for worthwhile international projects. This included one from the Global OHNS group whose article, 'Research in pursuit of equitable Otolaryngology Care' is featured in this journal. We hear from Barbara Jemec, of BFIRST- the British Foundation for International Reconstructive Surgery and Training. She gives us an overview of 'Global equity in surgery' drawing from her valuable experience. Samuel Okerosi and Valerie Salano outline their experience of ENT care in rural Kenya and Mike Tohadi presents a case report of the management of a large thyroid goitre in Malawi. Of note at the end of this journal are the calls for assistance in global Otology from Professor Christopher Prescott from Cape Town and Professor Mahomed-Asmail from Pretoria.

We hope you enjoy reading this!

Cheka R. Spencer
Consultant Rhinologist, Facial Plastic and ENT Surgeon
Royal Free London NHS Foundation Trust
Vice Chairman ENT UK Global Health

mission

Global Health ENT UK is committed to develop high-quality, sustainable care in the specialty across the world, with the hope that equity in health care can be achieved for all.

In particular, there is a focus on low resource countries where there is a lack of appropriate resource and a high burden of disease.

The main aims are to highlight the importance and prevalence of ENT disease on the global stage, with a particular focus on training, such that low resource countries can become self-sufficient in providing their own ENT services.

Such training will be achieved through access to educational resources and support of in-country training through courses and 'camps'.

role

ENT UK Global Health committee seeks to cultivate and encourage the ENT UK membership to participate in activities that assist the provision of optimal care of ENT/Head & Neck diseases around the world.

It aims to do so by:

- Developing a network of enthusiastic members and international opportunities and resources to be included in a database.
- Forging partnerships with local and internal charitable organisations
- Encouraging trainees to develop an interest in undertaking international global health fellowships.
- Developing organisational links with medical and surgical groups to encourage and enhance the breadth of global health activities available to ENT UK members.
- Providing educational resources to low income countries through courses and camps.
- Assist in the provision of medical equipment and technology to optimise ENT care in low income countries.

Global Health Committee Members

Nicholas Eynon-Lewis - Chairman of the Global Health Committee

Cheka Spencer - Vice Chairman of the Global Health Committee

Dulani Mendis - Treasurer of the Global Health Committee

Vijay Pothula - Global Health Committee member

Matthew Clark - Global Health Committee member

Sanjiv Kumar - Global Health Committee member

Global Health Committee Members

Sanjay Verma - Global Health Committee member

Kate Stephenson - Global Health Committee member

Emma Stapleton - Global Health Committee member

Baveena Heer - Global Health Committee member

Sara Timms - Global Health Committee member

How can we bring equity to Global Surgery?

Barbara Jemec
Consultant Plastic Surgeon
Toronto Western Hospital Toronto,
Ontario, Canada

First a big thank you to Cheka Spencer, for giving me this opportunity to write about global surgery and the British Foundation for International Plastic Surgery and Training (BFIRST). I believe the organization managed to bring the British Plastic Surgery community together around the following central ethos; that we need to pass on knowledge to our colleagues in resource poor countries for a sustainable and equitable future in reconstructive surgery through longterm collaborations.

Our BFIRST partners abroad are publishing and presenting under their own steam, adapting surgery which directly benefits their patients and are on their way to become centres of excellence in their own right. We have had international collaborations in 10 countries, have an active student and trainee section, research projects; we fund South-to-South training and have online webinars on equal footing with our partners abroad.

The case for local expertise

Surgical care is complex, constitutes 30% of the global burden of health and the Lancet report highlighted the lack of healthcare professionals and resources[1].

We have a need for increased surgical and anaesthetic capacity and I, personally, want to make the case for an

increased local expertise; *because* I think this brings equity; *because* it ultimately attracts local medical students, local surgeons and anaesthetist, the wider health care teams, funding *and* because it has a *direct* impact on local patient care and independence.

Have a plan

Wee Lam, plastic surgeon, Royal Hospital for Sick Children, Edinburgh and past chairman of BFIRST divided available resources into 4 levels (Fig 1): no surgical services, no plastic surgical services, early training programme and established training programme; and any educational global surgery effort needs to reflect what is needed and interact with the available knowledge and resources in a productive way to be effective. The BFIRST ultimate goal is local independence, and in order to foster most satisfaction for all parties is is useful to have achievable mutually agreed progress points, which act as checkmarks for *everyone* whether satisfactory progression is made.

Each collaboration is based on the most prevalent local plastic surgical problem, as identified by local surgeons by simple case counts and a mutually agreed plan is made how to achieve the transfer of knowledge in the most efficient manner. Our research has found that the face-to-face, hands on, in-country training is most appreciated[2], backed up with targeted Fellowships in the UK or more hands on with our South-to-South training partners in micro- and hand surgery in Taiwan and India (Professor Jeng, E-Da Hospital, Kaohsiung City, Taiwan and Professor Sabapathy, Ganga Hospital, India).

Operate with respect

The training is Consultant delivered and strictly within the individual's scope of practice. This should be self evident; to deliver training based on experience and knowledge gained personally, not just regurgitated from a text book, to be able to adapt to unfamiliar circumstances and offer the best possibility of a smooth outcome, dealing with often complex problems. The training is squarely aimed at enabling the local surgeon and their teams to perform the operation safely, deliver the post-operative rehabilitation programme and deal with any complications independently.

We arrange scoping visits to determine the feasibility of a project and to get to know each other.

No surgical services	No plastic surgical services	Early plastic surgical training programme	Established plastic surgery training programme
Unable to help	Provide basic plastic surgical training	Provide comprehensive plastic surgical training	Provide advanced plastic surgical training on request
Provide contact for nearest centre	Skingrafts, debridement, wound care, etc, but may need advanced techniques	Basic to advanced	Microsurgery, complex reconstruction technologies
	Design community-orientated curriculum	Exam practice	

©WeeLam

Figure 1: Levels of available local plastic surgery for planning of educational collaboration

Local culture is an important part of any collaboration and to put it bluntly: a faux pas is much easier to forgive if you are friends.

We register with the local governmental medical body, we use local resources, including local scrubs and if our partners need any specialist instruments, they are preferably purchased (and need to be able to be maintained) locally, or have a standing agreement with the original manufacturer for repairs. Well intentioned gifts of useless equipment, given because "it might be useful - and we can't use it anymore anyway/it is out of date", are at best a nuisance and at worst pollution and an insult.

Our medical student and trainee sub-committee are involved in the logistics of overseas visits, Fellowships, webinars, raising funds and awareness, and act as a link to the trainees abroad on an equal par.

Yes; Webinars. On equal footing.

We have several different types of webinars and all have multiple hosts - the basic principle being that all are specialists, some are based in the UK and some in one or several of our partners units abroad. The talks are divided between the hosts: highlighting local expertise in each country (Fig 2). We have a multidisciplinary webinars in conjunction with the British Society for Surgery of the Hand's Overseas Committee, the British Burns Association and ReSurge Africa (NGO) to mention a few, involving our and their partners abroad. Learning is a benefit which can go both ways. The transfer of knowledge needs to be relevant, not just because "this is what we happen to know". The experience and expertise from our colleagues abroad has been invaluable in making the training more relevant for a broader audience, especially in resource poor countries.

Figure 2: Global webinars

Conclusion

The requirements in overseas aid are complex and variable, and accepting we contribute best within our own expertise and abilities, it is, in my mind, important to specifically look at the following questions (Figure 3) for an optimal educational exchange. The feedback from your collaborative partner is key here and without this we may be doing more harm than good, by undermining our colleagues working in a resource poor environment, perpetuating medical colonization and generally just not being a good friend. We need to provide equitable, transparent and accountable help in a collaborative, responsive and reliable way.

Good luck

"Tweet"	"Sub-tweet"
What local clinical local problem is most prevalent within your speciality?	What are their last 100 cases? Where would the biggest impact be?
Which level of expertise and capacity exists?	"Don't teach your grandmother to suck eggs" Capitalize on local existing expertise
What needs to be achieved ?	Independent local service and training in e.g. tendon transfers for hand animation after electrical burns
How can the MDT help ?	What constellation of skills and knowledge would be most useful and translate directly into improved patient care and outcome for each Health Care Professional group (e.g. surgeon, nurse, therapist etc)?
What will you leave behind?	How do we help our colleagues in providing a self sustainable service and local training, which in turn provides equitable care?

Figure 3.

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Figure 4. Friends

ENT Practice in rural Kenya

Experience of two ENT Surgeons

Samuel. N Okerosi[1]
Valerie Salano[2]
[1] ENT Surgeon Kenyatta National Hospital
[2] ENT Surgeon Nyahururu Level 4 Hospital

Introduction

This article highlights the experience of 2 ENT surgeons early in their career in a rural setting in Kenya. They present some of their challenges, how they overcame them and opportunities to better ENT practice in their setting.

Dr Samuel Okerosi,
The Machakos Experience.

I graduated with my master's in ENT surgery from the University of Nairobi in December 2019. I then returned back to my County of employment, Machakos, and was posted to Machakos level 5 hospital, the main referral facility in the county. It is a hospital about 50 kms South East of Nairobi, our capital city. The bulk of the patients served are from the rural community with a catchment population of 1.09 million. The county had a total of 3 ENT surgeons (2 based in Machakos) and 1 ENT trained clinical officer based at another hospital. We had no audiologists nor speech therapists. The level 5 hospital had an MRI and CT Scan machine which were mostly out of service however the imaging services were available privately within the town. We did not have access to an ENT operating microscope nor to an endoscopy unit. We however had a 30 degree and a 90 degree scope with no light source, 2 headlights, an otoscope and a few forceps and probes in the clinic. In the operating theatre we had a head and neck set, adenotonsillectomy sets, myringotomy set and a foreign body set that also had a few nasal instruments.

When I started work at the ENT department, we were 2 ENT consultants and 3 clinical officers with no formal training in ENT. We would attend to about 250 patients per week. We also had an ENT and Eye ward with a bed capacity of 16 patients. We were assigned 2 operating theatre days weekly. With the limited equipment, improvisation was necessary to perform some surgeries. For example, we performed myringotomies with ventilation tube insertion using the ophthalmology microscope though it was quite laborious as the microscope was fixed at a 90 degree angle. Our direct laryngoscopies and biopsies were performed with an anaesthetic laryngoscope with biopsies taken using the tonsil holding forceps. Due to the lack of the ENT microscope and endoscopy unit, we had to refer almost all sinus and otology surgical cases to our level 6 facility in the capital city.

The COVID-19 pandemic significantly affected our clinical practice. All elective clinics and theatres were suspended and there were travel restrictions. There was also an acute shortage of personal protective equipment. Our ENT and Eye ward was converted to the COVID-19 ward and our patients transferred to the general surgical wards. The hospital came up with COVID-19 guidelines and as the ENT department we decided to prioritise cancer surgeries. We were fortunate to have one of our senior head and neck fellowship trained mentor surgeon volunteer his time to operate with us. We also had support of the administration as we were able to do COVID-19 PCR testing as a priority for our pre operative cancer patients, despite the backlog in testing. Due to this, we were able to do advanced head and neck oncology surgery in the hospital. We had a significant increase in the number of laryngectomies, laryngopharyngectomies, neck dissections and reconstruction of defects using the pectoralis major flap done within a period of 9 months. With the spike in head and neck surgical cases, we began to receive referrals from other counties. This was great exposure to head and neck oncology surgery and I am eternally grateful to my senior colleague.

Over the 2 and a half years of my time at Machakos, there were advancements though there were also set backs. We were able to get an ENT clinical officer and an audiology clinical officer. We also secured training opportunities for the 3 clinical officers in the ENT department to pursue a higher national diploma in ENT for 2 of them and a higher national diploma in Speech therapy for the other. The major setback however is that my fellow ENT surgeon and I eventually left Machakos as we were recruited by two level 6 facilities in Nairobi. There are however plans to recruit two ENT consultants. We are also in the process of developing a Machakos ENT department strategic plan together with the ENT clinical officer and the audiology officer on the ground. We believe this will assist in planning and lobbying.

Dr. Valerie Salano
The Nyahururu Experience

Nyahururu County Hospital, a level IV government health facility in Laikipia county, had no resident ENT surgeon prior to my posting there in 2021. The ENT clinical officer, who was at the time, less than a year in practice since completion of his training, was running the department. The situation was quite dire as the clinic was initially set up in a spare room in another department with just a table and two chairs, one for the clinician and another for the patient. The administration did not quite understand the scope of ENT services and thus did not know how best to support the department, this has however since changed. It is a far cry from an ideal ENT clinic but we will get there in due time.

We started off with attending to an average of 50 patients a week in the outpatient clinic but this number has significantly increased to about 150 a week. Our facility is unfortunately yet to be equipped with CT and MRI imaging, microbiology, cytology or histopathology services. We also at the moment do not offer audiology and speech therapy services, due to lack of equipment and personnel. This poses a big challenge in diagnosis and care for patients as we have to send them to another town about 60km away to access these services. A considerable number of our patients are not able to afford the transport and the cost of these services, hence delaying and compromising their care. I did not expect to put the phrase, "have a high index of suspicion" to practice as much as I have in the past two years but this has certainly helped me improve my clinical acumen. It is not all gloom and doom as at least the mission and private hospitals in town have now started offering CT imaging. The cost might be a bit steeper than in the government facilities but at least the patients do not have to travel to another town for the same.

Our elective surgical list, every Monday started with 3 surgeries a week, but we are now performing at least 6 surgeries. One of the challenges we face is lack of surgical equipment, including microscopes and endoscopy units, and the need to improvise, especially for the really desperate patients. The administration is however keen on changing this, with the promise of buying or at least leasing some of the equipment.

It has been quite a ride practising solo here, especially in some challenging cases but I am grateful for the support that I have had from my seniors who are always a call or WhatsApp image away

for a consultation. I can really see and appreciate the growth in confidence even among our nurses and clinical officers in handling ENT patients, something some said they had not done since their training and are about to retire.

The community has also been quite encouraging by constantly requesting for and engaging us in health talks in places of worship and schools. We had a remarkable 2021 World Hearing day campaign, where we had talks on safe listening practices in three local high schools and engaged local entertainment joint owners. A section of community health volunteers have also been quite receptive in taking part in training on how to identify a few common ENT cases and consult (via phone call or WhatsApp images) and refer accordingly. It is my hope that we will be able to train more community health volunteers and nurses in the far flung dispensaries and health centres to help us offer the best possible care that we can to our patients with the resources that we have.

Observations and recommendations from early practice

ENT surgeons posted to rural facilities would more often find themselves as the only ENT surgeons in the area in a setting where the staff and management may not know the full scope of ENT practice. Surgeons posted to these areas have to perform the dual role of clinician and manager as they would have to raise awareness on the scope of practice as well as lobby for equipment and funding for their department. A standardised list of essential ENT equipment may help with the lobbying efforts.

Valerie Salano and theatre staff during a ENT procedure.

Collaborations with well established ENT departments both local or foreign, or senior colleagues in the profession is highly beneficial. It expands the scope of practice and the cross talk may help one find innovative ways to improve the ENT department.

Though not quantified, the burden of ENT diseases from our experience is high, and there is an unseen burden of disease. This may explain the sharp rise of ENT clinic visits once an ENT surgeon is posted to a new facility. More consultant ENT surgeons are required to address this.

It is highly impactful working in a rural set up and we advise newly posted consultants to rural facilities not to be demotivated by the initial set up but to build a department.

Definitions

Clinical officer – Diploma trained health care provider trained to practise medicine in a primary healthcare setting. Also referred to as a physician assistant.

ENT clinical officer – clinical officer further trained in ENT for a period of 1 and a half years, primarily trained to diagnose and treat basic ENT conditions.

A huge goitre in a 62 year old lady

Follicular Thyroid Carcinoma

Michel Tohadi Ahoka
ENT surgeon, Department of Ear, Nose and Throat Head & Neck Surgery, Queen's Elizabeth Central Hospital, Kamuzu University of Health Sciences, Blantyre, Malawi.

Introduction

A goitre is an enlarged thyroid gland and can have either benign or malignant origin.[1] Iodine-deficiency is the most common risk factor in both cases.[2] It is common in Africa to have patients with longstanding goitres that have reached huge size and weigh up to four Kilograms or more.[3] This is the case also for our department at Queen Elizabeth Central Hospital where patients with longstanding and huge goitres come for medical help. The most likely reason for this delay in reporting our setting is that most of our populations live in rural areas where access to goitre surgeons is almost absent, and are also faced with transport challenges to the central hospitals.

Case report

A 62 year old lady presented to our clinic with 29 years history of a progressive growing thyroid mass, associated with recent dysphagia and shortness of breath especially when lying supine. For the past two years prior to presentation, she was not able to speak loud but had no hoarseness of voice.

On examination, the patient had a huge thyroid mass that measured approximately 20 x 17 x 10 cm (Figures 1 and 2) with the mass extending beyond the clavicle and above the hyoid on the left side. It was also extending laterally to the sternocleidomastoid muscles both

Figure 1: Anterior view of the goitre.

Figure 2: Lateral view of the goitre.

sides. The mass was non tender, and soft on palpation with regular margins. The flexible scope was not done due to it being faulty preoperative but as she could not raise her voice we inferred she had a partially compensated vocal cord palsy.

Fine-needle aspiration cytology was done and showed follicular cells, which according to the UK Royal College reporting system of Thyroid cytology is Thy3f which is indicative of follicular carcinomas.[4] Follicular carcinomas can only be differentiated from benign follicular lesions on histology. Thyroid stimulating hormone was within normal range (0.53 mIU/L). No imaging was done.

Based on the size of the mass that was covering both sides of the neck a total thyroidectomy was planned. The procedure, its advantages and risks were explained to the patient.

Figure 3: The left lobe mass after excision.

During surgery, it was discovered that the whole bulk of the mass was the left lobe of the thyroid gland, with the right lobe looking normal, so a decision to do a left hemithyroidectomy was made intraoperatively. A huge left thyroid lobe measuring 17 x 14 x 8 cm was excised and sent for histology (Figure 3). Histology showed that the mass was a follicular thyroid carcinoma.

The decision of doing a completion thyroidectomy was then made and the procedure was done six weeks after the first operation. During surgeries, the recurrent laryngeal nerves as well as parathyroid gland were identified and preserved (Figure 4). Levothyroxine was prescribed for life.

Figure 4: Left Recurrent laryngeal nerve.

In order to rule out distant metastasis from follicular thyroid carcinoma, we ordered x rays of the chest, pelvic, both femurs, both knees and both legs in post-operation period. Abdominal ultrasound and liver function test were performed but no sign of metastasis was detected.

Discussion

A patient with a large symptomatic long-standing goitre is presented whose histology showed follicular thyroid cancer. The case demonstrates the risk of thyroid malignancy in long-standing goitres and indicates the need for cytology, when available in the assessment of the patient with a goitre, and the need for a high index of suspicion for cancer in patients with large, long-standing or rapidly growing goitres.

Worldwide thyroid cancer represents 1% of malignant tumors,[5] 2.1% of all endocrine malignancies[6] and 1 to 5% of thyroid tumors.[7,8]

In Africa, there are few reports on thyroid cancer compared to other continents. It is only at the beginning of 21st century that some reports started being published, with most showing an incidence of thyroid cancer higher than the worldwide thyroid cancer incidence. This is the case in Southeastern region of Nigeria, where in a 15-year retrospective review of all thyroidectomy specimens received at the Department of Morbid Anatomy, University of Nigeria, 61 (10.8%) of 564 thyroidectomy specimens showed thyroid cancer, with a female to male sex ratio of 5.1:1 and papillary thyroid carcinoma being the most common followed by follicular thyroid carcinoma.[9] A multicentre cross-sectional study in the Democratic Republic of the Congo of 594 patients operated on for a thyroid mass from 2005 to 2019, from 35 centers thyroid cancer showed 119 (20%) thyroid cancer of 594 cases with papillary thyroid carcinoma being the most common followed by follicular

thyroid carcinoma and anaplastic thyroid carcinoma.[10] In Cameroon a retrospective cross-sectional analysis of patient records with diagnoses of nodular goitres, over 11 years (2006 to 2016) at the Douala General Hospital in Cameroon 43cases (23%) out of 187 patients had thyroid cancer, again with papillary thyroid carcinoma being the most common.[11] These results show that there is a high incidence of thyroid cancer in Africa.

Follicular thyroid carcinoma is second after papillary thyroid carcinoma in incidence worldwide and represents about 10% of all thyroid cancers.[12] It is more common in women than men with a sex ratio of 3:1, with a mean age of 50 years unlike papillary thyroid carcinoma that has a mean age of 35 years old.[13] It presents as a solitary thyroid nodule and some patients have a history of a longstanding goitre that is painless with a recent rapid increase in size.[14]

Unlike papillary thyroid carcinoma which tends to metastasize to cervical lymph nodes, follicular thyroid carcinoma are more likely to spread hematogeneously and presents with metastatic disease on the time of diagnosis more commonly than papillary thyroid carcinoma.[15] A pathologic bone fracture can be the initial presentation of follicular thyroid carcinoma. Other sites include liver, lungs and brain. It is for this reason that a metastatic work up on patients with follicular thyroid carcinoma is helpful with chest x ray, bones x rays and liver function test to rule out distant metastasis. The prognosis of follicular thyroid carcinoma varies considerably according to the degree of vascular invasion. There are two ways of categorizing follicular thyroid carcinoma, histologically minimally invasive tumors and histologically widely invasive tumours. In minimally invasive tumours there is evidence of invasion into, but not through, the tumor capsule at one or more sites, and with these lesions do not exhibiting small-vessel invasion. In widely invasive tumors there is invasion through the tumor and often vascular invasion.[16-19] Follicular thyroid carcinoma is generally considered to have a good prognosis, especially in young patients. This is particularly true for minimally invasive follicular thyroid carcinoma. Age at diagnosis and the existence of combined capsular and vascular invasion are important prognostic factors.[18] In widely invasive follicular carcinoma patients with distant metastatic disease (M1) at the time of diagnosis and in those having a tumor size larger than 4 cm there is a decreased survival, and in these cases, an aggressive surgical intervention does not improve survival because invasiveness already indicates the possibility of distant metastasis.[14, 19]

Because of challenges in making a diagnosis of follicular thyroid carcinoma before surgery, many patients with follicular thyroid cancer undergo hemithyroidectomy during the first surgery followed by a completion total thyroidectomy after histological diagnosis have been made.[20]
Following diagnosis of follicular thyroid cancer on histology, completion thyroidectomy is recommended. Where post-surgical radioactive iodine is available, completion thyroidectomy enables the radioactive iodine to reduce the risk of metastatic disease developing, and where post-surgical radioactive iodine is not available, completion thyroidectomy eliminates the risk of follicular thyroid cancer appearing in the opposite lobe and is cost-effective.[21,22]

Unlike papillary thyroid carcinoma distant metastasis occur late more often in follicular thyroid carcinoma and the risk of death from distant metastatic disease (M1) increases after age 45.[23] For widely invasive follicular thyroid carcinoma a radioactive iodine ablation is indicated for remnant ablation to facilitate surveillance of the disease and to treat distant metastasis if not surgically resectable. If complete resection of the tumor is performed there is no indication of external beam radiation therapy except in highly selected cases such as aero digestive involvement.[24] As following all thyroidectomy surgery, post-operative calcium and thyroid function tests need to be checked with thyroid function tests monitored for life. Total body iodine scintigraphy aids the detection of metastases. In addition, if available, thyroglobulin monitoring of serum thyroglobulin levels helps in the detection of disease recurrence.[25]

In conclusion thyroid cancer is very common in Africa including Malawi. Among different types of thyroid cancer, follicular thyroid carcinoma comes second after papillary thyroid carcinoma. It is important for ENT Head and Neck surgeons, general surgeons and other clinicians who deal with goitre patients to make it a routine to perform a fine needle aspiration cytology test before surgery, to have a high index of suspicion of thyroid cancer on any longstanding, huge or a fast growing goitre. If the diagnosis of follicular thyroid carcinoma is made total thyroidectomy or completion thyroidectomy should be done to eliminate the risk of follicular thyroid cancer appearing in the opposite lobe.

Funding

The author received no financial support for the research, authorship, and/or publication of this article.

Informed consent

Written informed consent was obtained from the patient for their anonymized information to be published in this article.

Acknowledgements

Chris Bem : Head and Neck surgeon
Wakisa Mulwafu: ENT Surgeon, PhD, Kamuzu University of Health Sciences, Blantyre, Malawi.
Emily Rashida Asedi: Nursing officer, ENT department at Queen's Elizabeth Central Hospital.

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Research in pursuit of equitable Otolaryngology care

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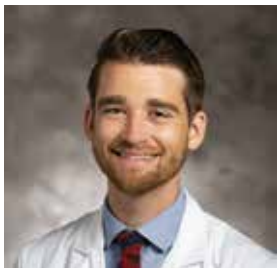
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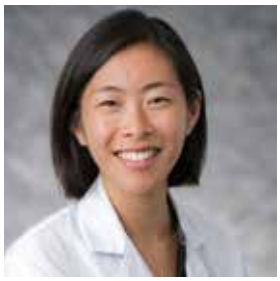
Mary Xu

Introduction

The global burden of conditions cared for by otolaryngologists is immense. Among these, over 1.5 billion people experience hearing loss and there are over 500,000 annual deaths from head and neck cancer.[1,2] For many otolaryngology-head and neck surgery (OHNS) conditions, there is limited understanding of the disease burden and optimal pathways for prevention, diagnosis, and treatment across disparate locations and health systems. There is a critical need for equitable, policy-relevant, and context-specific research to improve OHNS care.

Since September 2019, dozens of global otolaryngology researchers from around the world have met virtually on a monthly basis to conduct public health research on key knowledge gaps in OHNS care. A single meeting may include presentations by several topical experts and discussion by members from over 40 countries, including places as geographically disparate as Chile, Haiti, Kenya, India, Myanmar, and Taiwan. Today, over 300 members, including otolaryngologists, audiologists, public health researchers, and health policy experts, have partnered in this effort, modeling work done by organizations in other surgical subspecialties.[3,4] Their vision, as members of the Global Otolaryngology-Head and Neck Surgery (OHNS) Initiative, is to use research to advance "universal access to high-quality, safe, timely, and affordable care for those with OHNS conditions."[5]

The Global OHNS Initiative

The Global OHNS Initiative consists of teams focused on research, education, advocacy, and regional representation. Monthly "large group" meetings and semi-monthly research meetings foster the generation of research questions and the development of collaborations. Over 50 expert presentations have been given on topics including the history of otolaryngology partnerships in Haiti, task-shifting for ear and hearing care in Fiji, and a review of the 2021 World Report on Hearing by its authors, among others. The initiative aims to leverage these diverse perspectives to produce high-quality research on critical questions.

Recognizing the history of extractive research partnerships in global health,[6,7] the initiative has adapted research equity guidelines from Partners in Health-Rwanda to ensure equitable representation in research and priority-setting.[8] Additionally, its collaborative hub-and-spoke model features teams from each of the seven World Health Organization regions that encourage research participation and leadership by diverse researchers who are best positioned to generate and implement policy-relevant research in their own health systems.[9]

Areas of focus for research include analyses of otolaryngology care systems, including workforce, barriers to care, education, and infrastructure, as well as health and research equity, environmental sustainability, and subspecialty-specific topics. Recently, the initiative has introduced working group "labs" to further develop certain fields of research, including gender equity, research equity, and health policy. There are currently 14 members from the United Kingdom (UK) who have been key leaders in the initiative's efforts to advance universal access to otolaryngology care. Here, we share the initiative's published work (Table 1) and three ongoing projects that may inform future collaboration with otolaryngologists in the UK and elsewhere.

Global OHNS Initiative and ENT-UK Resource-Stratified Guidelines

Historically, clinical practice guidelines developed in high-income countries have been used as the reference for care across all resource settings. African Head and Neck Society (AfHNS) members and their collaborators have recently challenged this paradigm, arguing that disparate availability of technology,

Title	Key Findings
"Delphi Method Consensus on Priority Global Otolaryngology–Head and Neck Surgery Conditions and Procedures"[10]	This study developed international consensus on priority otolaryngology conditions and procedures for which all health systems should have the capacity to provide care.
"Global Burden of Head and Neck Cancer: Economic Consequences, Health, and the Role of Surgery"[11]	Using macroeconomic modeling, the authors determined that head and neck cancer mortality disproportionately affects low- and middle-income countries, resulting in a projected cumulative $535 billion USD in lost global economic output between 2018 - 2030.
"Density of Health Workforce Correlates to Disease Outcomes: Evidence From Global Data in Otolaryngology"[12]	Univariate and multivariate analysis was used to show associations between increasing otolaryngology specialty workforce and improved outcomes for several conditions.
"Race and Ethnicity in Otolaryngology Academic Publications"[13]	This systematic review concluded that otolaryngology publications rarely define race and ethnicity, despite commonly being included as covariates, and presents a framework for their inclusion into future publications
"Research Equity in Otolaryngology-Head and Neck Surgery"[8]	This publication presents a framework to guide equitable global health research partnerships by prioritizing local research leadership and participation.
"The Unseen Global Burden of Disease"[14]	This paper outlines patient and institutional factors which contribute to the unseen global burden of disease from the perspective of otolaryngologists in both LMICs and HICs
"Gender Disparities in Otolaryngology: A Case Report Reflecting Global Perspectives"[15]	Qualitative interviews were conducted with six female otolaryngologists from LMICs and HICs regarding the impact of their sex at work, identifying shared themes of: micro-aggressions, working along ancillary staff, pregnancy, imposter syndrome, difficulties during job search, and unique barriers as consulting physicians.
"Challenges facing otolaryngologists in low- and middle-income countries during the COVID-19 pandemic"[16]	This timely commentary from August 2020 highlighted and contextualized the challenges faced by many medical professionals in LMICs during the COVID-19 pandemic, concluding with a call for collaboration by the international otolaryngology community.

Table 1. Global OHNS Initiative Publications. Abbreviations: high-income country (HIC), low- or middle-income country (LMIC)

financing, and infrastructure changes the workup and treatment feasible for otolaryngologic conditions.[17] To that end, the AfHNS has produced novel resource-stratified clinical practice guidelines for the spectrum of head and neck cancers generated from the clinical experience of care providers in sub-Saharan Africa.

By specifying which resources are available at their facilities (e.g. CT scanner, free flap surgery, etc.), clinicians are provided with guidelines that are most appropriate for their context.[18] In 2021, members of the Global OHNS Initiative and ENT-UK began a collaboration to address the deficit of resource-stratified clinical guidelines in other otolaryngology subspecialties. These forthcoming guidelines will be designed for broad use by clinicians in varying settings around the world.

Surveying the State of Global OHNS Care

At present, the unequal distribution of the surgical workforce around the world is one of the greatest barriers to improving access to surgical care worldwide.[19,20] In otolaryngology, an increased density of specialist providers is linked with better patient outcomes,[12] yet previous estimates of the workforce suggest that OHNS services are non-existent in some parts of the world with less than one professional per million population.[21] In the most comprehensive study of the global otolaryngology workforce to date, the Global OHNS team has surveyed healthcare practitioners, professional society leaders, and medical licensing boards from around the world to obtain information about current OHNS workforce density.

Initially conceived during the monthly large group meetings, this study was conducted with the support of initiative members in each of the seven World Health Organization regions. Preliminary data comprises results from almost two-thirds of the world's countries which contain 84% of the world's population. These results will provide new insight into strengths, weaknesses, and disparities in OHNS workforce, and sub-analysis by World Bank income groups and World Health Organization regions will be used to show global trends.

A separate, ongoing provider-focused survey led by initiative members is just entering the dissemination phase. This study seeks to obtain complementary global data on otolaryngology training programs, service delivery, barriers to care, and infrastructure across countries and World Bank income groups. The Global OHNS Initiative regional representative teams will play a central role in ensuring sufficient responses on the country and regional levels. Together, these surveys will provide critical baseline data about global otolaryngology care provision that can be used to improve equitable access to otolaryngology care in underserved locations through a data-driven approach.

Article Processing Charges in OHNS

Open access (OA) publication was developed as a means to "making research papers freely accessible to all without any barrier."[22] Whilst the OA model has succeeded in this at the point of access, the cost is passed to authors through an article-processing charge (APC) that can cost upwards of $1000 and as much as $11,390, as required by Nature.[23] These APCs are prohibitive for authors from LMICs, preventing them from publishing in the very open access journals that would make their research best available to colleagues, many of whom may lack institutional access to subscription-based journals.

While there is growing recognition of these issues more broadly in global health, there is limited research on APCs in otolaryngology. A recent study analyzed 75 otolaryngology journals, reporting a median APC of $2900 and infrequent subsidies for LMIC authors (33% of journals). To understand the practical implications, a team of Global OHNS Initiative researchers, primarily based in sub-Saharan Africa, has undertaken an analysis of APCs in otolaryngology journals and their effects on publication by authors across different World Bank income settings. These forthcoming findings will describe

the impact of APCs on researchers and present avenues to improve equity in research dissemination within otolaryngology.

Research for Equitable OHNS Care

This body of research testifies to the vision of health equity shared by otolaryngology researchers in the Global OHNS Initiative, but it is only a start to addressing a myriad of unanswered questions. We invite those from the UK and around the world to accompany us in this endeavor or adopt components of the Global OHNS Initiative's model, including its research equity guidelines[24] and race and ethnicity research framework,13 into existing research collaborations.

There is a pressing need for 1) more collaborative, international research to answer key questions defined by clinicians across diverse geographic locations; 2) evidence-based advocacy to encourage development of programs and policies to improve OHNS care; and 3) funding and technical support for research capacity strengthening in settings with limited research infrastructure. Supporting otolaryngology researchers in this manner will foster research that is high-impact, context-specific, and used to improve otolaryngology care for the majority of the world's population who reside in underserved health care settings. Together, we can make progress toward a world in which all people have access to the otolaryngology care that they deserve.

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Be a part of the Hearing Evolution

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Sixty-eighty-year-old Glen lives in a two-bedroom shack with her four grandchildren, all under the age of 12, in a rural community on the outskirts of Durban, South Africa. They solely rely on government grants to survive.

Recently, Gogo Glen has been struggling with her responsibilities: not only because she is becoming physically slower but because she is now also struggling to communicate. She does not know why this is happening or what to do about it. She is lonely and yet avoids interacting with people, worried that she will have to continuously ask others to repeat themselves and will embarrass herself by saying something irrelevant or inappropriate.

She does not know that she is suffering from a common age-related difficulty, called presbycusis. It often occurs in adults from age 60 onwards, and results in a gradual loss of hearing in both ears. Presbycusis does not lead to deafness but if ignored or untreated, it can lead to social isolation and loss of autonomy, as well as anxiety and depression[1,2] — which is what is what Gogo Glen is experiencing. She is unaware that devices, such as hearing aids, could assist her in overcoming some of the communication challenges she is facing and thus improve her overall quality of life. The consequences of hearing loss unfortunately extend beyond individuals and their social circles: The World Health Organisation[3] (WHO) estimates that untreated hearing loss causes an annual global loss of about US$1-trillion, which is about triple South Africa's gross domestic product. Consequently, timely hearing-loss interventions are vital.

People living in middle- to-low-income countries such as those in South Asia, Asia Pacific and Sub-Saharan Africa are particularly susceptible to disabling hearing loss. The WHO[4] estimates that prevalence rates are almost four times higher than those in wealthier regions. Despite the serious consequences and high rates of hearing loss, hearing healthcare services are not readily available for the majority of people due to lack of resources. First, there are not enough trained professionals in sub-Saharan Africa, with fewer than one trained audiologist per million people.[5] Hospitals and medical health professionals such as audiologists also tend to be in urban areas[6,7], requiring individuals like Gogo Glen to travel significant distances at great cost to access the public healthcare system. Additionally, in South Africa, the majority of the population relies solely on public healthcare, but most public hospitals face equipment challenges, and so even though someone like Gogo Glen may reach a healthcare facility, she may not be able to receive the support she needs.

Figure 1. Patient completing hearing assessment using mHealth solutions with support of a Community Healthcare Worker (CHW)
[Reproduced with permission, Copyright [2022], [HearX].

In the past, to diagnose the cause of hearing loss, a trained individual would have needed to conduct numerous tests, requiring specialised audiometric equipment and a sound-treated room. Fortunately for individuals like Gogo Glen, audiology is a technology-driven profession. New developments in remote and telehealth hearing care solutions make identification of ear diseases and hearing loss possible at any age and in any setting. Technology allows for decentralised community-based hearing care services, providing ear and hearing healthcare to those who previously were not able to receive it.[8] For people like Gogo Glen, this means that she does not even need to leave her shack as facilitators or assistants could guide her in a self-testing assessment using a mobile hearing application (Figure 1). These facilitators could be members of the community which would not only create job opportunities but also allow instructions and information to be provided in individuals' home languages which may further encourage people to get their hearing tested.

Hearing aids are a common hearing-loss intervention, but in the past only hearing health professionals fitted them. With new technological developments, 'self-fit hearing aids' and 'over-the-counter' hearing aids are increasingly becoming available. Consumer technology players, like Apple, which traditionally did not target customers with hearing

loss, have developed products like the AirPods Pro that are approaching the functionality of hearing aids for milder degrees of hearing loss. Hearing care professionals will have to adjust to a new era where the line between medical and consumer devices is increasingly blurred.

Not surprisingly, the COVID-19 pandemic has demonstrated that professionals including audiologists can easily adapt in order to support their clients and keep their practice doors open.[9] By drawing from and utilizing automation in routine audiology procedures, they can free up time so that professionals such as audiologists can focus on more complex cases that require soft skills and personal insights to understand their clients' needs. These advances can be seen as supplementary to traditional models which provides a unique opportunity for greater access to meet needs which will also expand on clinical impact.

Professionals such as audiologists are also in a unique position to provide valuable insights based on years of experience. Their expertise could guide developers' interventions so they respond to patients' needs. Telehealth and over-the-counter hearing interventions can ensure that millions of under-served people, like Gogo Glen, have equal access to quality care and can live their lives without the fear and shame of an undiagnosed, untreated hearing loss.

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Acknowledgements

The author acknowledges the support of S Wild and Prof J du Toit from the DHET: Future Professors Programme for their support and guidance as well as Prof DW Swanepoel for the ongoing stimulating conversations and advice.

Call for assistance with supply of Otoscopes to rural and community clinics throughout less well off countries

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Chronic ear disease is one of the under-publicised major health problems in less well off countries with the World Health Organisation estimating an incidence of about 4% - probably less in rural areas where there is less overcrowding and more in urban areas.

We all know the problems associated with chronic ear disease – persistent perforation, recurrent infection and reduced hearing.

We also know that where the Primary Care Health Services are both adequate and accessible the incidence of chronic ear disease is greatly reduced by diagnosing and adequately treating otitis media, whether by monitoring watchful waiting or through antibiotic intervention.

We also know that, once established, with adequate diagnosis and intervention the disadvantages of chronic ear disease – discharge that is often smelly and reduced hearing – can be ameliorated.

The key to this is provision of an otoscope to rural and community clinics and training in the ability to use it to recognise the different conditions. Reduced to their very basics these are:

- *Wax*
- *Foreign Body*
- *Otitis externa – any combination of red, inflamed ear canal that may be swollen, debris or pus in the ear canal with an intact eardrum*
- *Otitis Media – red, inflamed eardrum*
- *Inactive Chronic Otitis Media – dry perforation*
- *Active Chronic Otitis Media – discharge via a perforation*
- *Healed Otitis Media – scarred eardrum*
- *"Something Else" – not any of these but either the ear canal or the eardrum is not normal*
- *Normal – none of the above*

Teaching use of an otoscope and recognition of these to Clinic Personnel (nurses, medical assistants) has been trialed and shown to be effective in several countries.

However … the problem preventing wide-scale application to reduce the scourge of chronic ear disease is provision of otoscopes. It is fairly safe to say that no rural or community clinics throughout Africa have otoscopes and if they do almost certainly they are not working because the batteries have gone flat. Why? Because otoscopes are expensive and most health service budgets hardly cover provision of other basics and when they can be provided provision of batteries is an ongoing problem.

Some years ago the UK company – Arclight Medical – produced a beautiful concept, solar powered ophthalmoscope/otoscope combination which evolved but in doing so became not only a bit more suitable for ENT use but unfortunately more complex, more expensive and less suitable.

A group of us working throughout Africa – we call our group HEFAL (Hearing Ears For All) – have recently persuaded Arclight Medical to design and produce a prototype for a vastly simplified – and hence cheaper - but far more suitable otoscope which has been trialled and found to be ideal for use in these rural and community clinics.

However ... we now need to raise the funds to manufacture and distribute this device. This will amount to about 50,000 pounds since the minimum first production run will have to be 10,000 units. This sounds a lot but not only is there an existing backlog for supply of devices to those already trained but once they become available then training courses can mushroom.

For more information:
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Arclight

Arclight in use

Tobacco control via cigarette taxation structure and associated price differentials

(winner of the ENT UK Global Health Free Papers competition)

Dr C. Raymond Li MBBS/BSc
Southampton General Hospital, Southampton, United Kingdom

Introduction

Tobacco smoking is the leading preventable cause of death worldwide, with over 8 million deaths per year from tobacco-attributable disease.1 Smoking is a well-known contributing factor to a variety of ENT disorders. Notably, smoking cessation is not only preventative, but can also improve outcomes and demonstrates a strong association with survival in head and neck tumours.2 However, cessation support amongst otolaryngologists is inconsistent, with only 7.7% of patients with malignant primary ENT tumours receiving offers of smoking cessation support.3 Furthermore, 44.9% of head and neck squamous cell carcinoma (HNSCC) patients continued smoking after treatment, leading to increased morbidity and mortality.4

Reducing access to tobacco is an important aspect to addressing smoking cessation. The World Health Organisation (WHO) advises policymakers implement smoking cessation strategies outlined in the Framework Convention on Tobacco Control.5 Of these, raising taxes on tobacco is the most effective form of tobacco control, and the most effective tax structures are excise taxes, particularly specific and uniform excise taxes.6 Specific excise tax is a fixed tax component per quantity of a good, independent of the price. Comparatively, ad valorem excise tax is assessed as a percentage of the price, and leads to increased variability in tax rates and tobacco prices due to more opportunity for strategic circumvention.7 However, in response, the industry implements a multitude of counter-strategies to

minimise the burden of increased tax. One such strategy is to over-shift premium cigarette prices to take on the increased burden, allowing budget cigarette prices to be maintained. This allows smokers to 'trade down' to a cheaper product despite average price increasing, retaining their primary customer base.8 Evaluating the differences in price between premium and budget cigarettes and effective methods to reduce such differentials would provide policymakers important and viable strategies to improve efficacy of taxation policies. This could reduce tobacco consumption and improve health outcomes.9,10

This study aimed to explore global trends in cigarette price differentials, and assess links between tobacco taxation structure and price differentials.

Methods

Premium and budget cigarette prices and taxation data were sourced at the country-level for 195 countries using the official WHO reports on the global tobacco epidemic from 2014, 2016, and 2018, the most recent 2-yearly WHO reports at the time of data collection.1,11,12

Cigarette prices were reported per 20-cigarette packs in local currency, international dollar, and US dollar prices. Local currency was used to minimise exchange-rate error. Price differentials were defined as the difference in price between premium and budget cigarette packs, divided by premium pack price. Higher price differentials were a marker of larger gaps between premium and budget pack prices, and similarly, lower differentials indicated smaller gaps.
Alongside cigarette data, country-level sociodemographic characteristics were obtained. The WHO assigns countries to one of six regions: the African (AFR), Americas (AMR), Eastern Mediterranean (EMR), European (EUR), South-East Asia (SEAR) and Western Pacific (WPR) regions. A country's income level was assigned using the World Bank definitions of low-income (LIC), lower-middle-income (LMIC), upper-middle-income (UMIC), and high-income (HIC) countries.

Using the variables collected, a two-level linear random intercepts model with nested repeated measurements in each country was developed, aiming to assess the association between country-level taxation structures and price differentials, with adjustment for a priori potential confounding variables. This model included 479 complete observations for 179 countries between 2014 and 2018. Three continuous variables were simultaneously used for taxation structure in the adjusted models: specific excise tax rate, ad valorem excise tax rate, and other taxes rate.

Results are displayed as coefficients with 95% confidence intervals. For categorical variables, this represents the percentage-point change in price differential against the reference category of the variable. For taxation variables, this represents the percentage-point change in price differentials per 10 percentage-point increase in taxation rate.

Results

Results from the multi-level linear regression (Table 1) show that price differentials have remained similar over time, adjusted for taxation, region and

Characteristic	Percentage-points of cigarette price differential		
	Unadjusted*	Adjusted†	Adjusted†
Total tax	–3.8 (–4.9 to –2.7)	–	–1.5 (–2.5 to –0.4)
Specific excise tax	–3.9 (–5.1 to –2.7)	–2.5 (–3.7 to –1.2)	–
Ad valorem excise tax	–0.3 (–1.1 to 1.6)	–0.4 (–1.7 to 0.8)	–
Other tax	–2.6 (–5.3 to 0.1)	–2.8 (–5.2 to –0.4)	–
Year			
2014	Reference	Reference	Reference
2016	–1.3 (–3.5 to 1.0)	–1.1 (–3.4 to 1.2)	–1.3 (–3.6 to 1.0)
2018	–3.0 (–5.3 to –0.8)	–2.3 (–4.6 to 0.1)	–2.5 (–4.8 to –0.1)
Region			
EMR	1.3 (–8.5 to 11.1)	9.8 (1.3 to 18.3)	9.9 (1.2 to 18.6)
SEAR	–1.1 (–14.1 to 11.9)	4.5 (–6.6 to 15.6)	3.3 (–8.1 to 14.8)
AFR	Reference	Reference	Reference
WPR	–25.7 (–34.7 to –16.6)	–9.0 (–17.6 to –0.3)	–12.0 (–20.7 to –3.3)
EUR	–31.2 (–38.8 to –23.7)	–10.6 (–18.8 to –2.4)	–11.2 (–19.7 to –2.7)
AMR	–22.8 (–31.2 to –14.4)	–11.4 (–19.5 to –3.3)	–11.4 (–19.8 to –3.0)
Income group			
Low income	Reference	Reference	Reference
Lower middle income	–11.8 (–20.5 to –3.0)	–7.8 (–15.8 to 0.2)	–7.6 (–15.8 to 0.7)
Upper middle income	–22.0 (–30.4 to –13.7)	–10.7 (–19.1 to –2.3)	–11.5 (–20.2 to –2.9)
High income	–40.5 (–48.9 to –32.1)	–26.1 (–35.2 to –17.1)	–27.1 (–36.4 to –17.9)

Table 1: Multilevel linear regression estimated associations between components of taxation structure and price differentials.

Taxation components represented as 'per 10 percentage point increase in rate'
**Unadjusted models came from a series of univariate regressions including the variable in question alone.*
†Adjusted for all other factors in the table

income level. Price differentials were non-significant in 2016 (-1.1%: 95 CI -3.4% to 1.2%) and 2018 (-2.3%: 95 CI -4.6% to 0.1%) when compared to 2014. A 10% increase in total taxation level was associated with a 1.5% reduction in price differentials (95 CI -2.5% to -0.4%). Of the three taxation components, for every 10-percentage-point increase in specific excise tax, a 2.5% reduction in cigarette price differential was demonstrated (95 CI -3.7% to -1.2%). However, a 10-percentage-point increase in ad valorem excise tax was not significantly associated with a reduction in price differential (-0.4%: 95 CI -1.7% to 0.8%).

Discussion

Price differentials globally remained similar over time. Increases in total and specific excise taxes were found to have a significant inverse association with differentials. No such association was found for ad valorem excise tax, implying using a greater specific component in a country's tobacco excise tax will help reduce price differentials. This is in line with expectations, as the application of specific tax is uniform for cigarettes of all prices, whereas ad valorem is applied proportionally and would mostly maintain price differences. A sizeable proportion of the world population live in countries with suboptimal tobacco

taxation levels and structures.13 This study demonstrated the value of specific excise structures in reducing price differential compared to ad valorem excise tax, which may further encourage countries to adopt WHO-recommended taxation structures.

There is an important gap in knowledge between taxation structure and price differential beyond the regional level. This study was one of the first studies linking tax structure to price differentials at a global scale, a key area of research the WHO has identified.6 At this scale, price differentials can be a more useful measurement than absolute differences in tobacco prices as they are less exchange-rate dependent and more directly comparable between countries and across time.

Only cigarettes were included in this study due to the data available. Roll-your-own and electronic nicotine delivery systems are rapidly gaining popularity, the latter particularly among teenagers,6 and are an important aspect for future study. Incalculable price differentials were noted for some countries due to missing data over the 3-years, totalling 57 country-years. These were predominantly among LICs and commonly the same countries lacked data each year, leading to a selection bias which may misrepresent applicability in LICs. 'Other tax' was noted to be associated with a reduced price differential, but due to its collated nature, was difficult to draw reliable conclusions from.

Price differentials are important as larger gaps enable smokers to trade downwards, blunting the effectiveness of average price increases, and facilitate continued smoking.14 This study suggests high taxation with high specific components are comparatively effective in reducing price gaps. Evidence from the EU demonstrates that decreasing the gap between budget and premium cigarettes lowers cigarette consumption9 and infant mortality.15 Smoking at diagnosis of HNSCC is known to have worse survival, and reducing consumption can improve this.2 Rebalancing existing excise structures to have a higher specific component, alongside measures raising the price floor on cheap tobacco, can contribute to reduced differentials. The industry's ability to manipulate cigarette prices would thus be more limited and tax increases more effective at reducing cigarette smoking.16

Conclusion

This study demonstrates that, globally, raised total and specific excise taxation rates produce a decreased price differential between premium and budget cigarettes. Directing policy towards high specific excise levels may therefore be an effective approach to benefit from the effects of decreased price differentials. Tobacco policy plays a key role in reducing consumption; ENT conditions for which smoking cessation improves prognosis can benefit greatly from improvements to taxation structure and reduced price differentials.

Acknowledgements

I would like to thank Anthony A Laverty, Filippos T Filippidis, Kiara C-M Chang, and Christopher Millett from Imperial College London School of Public Health, who contributed substantially in designing, evaluating and mentoring during the project.

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Abstracts from the ENT Global Health Conference Free papers session

Name: Dr Michael Elliot
Instituition: UCLH NHS Foundation Trust

Abstract Title:
A one stop outpatient nasal facture clinic, streamlining the management of patients with nasal injuries

Study background and aims:
Nasal fractures require assessment and manipulation within 14 days of injury traditionally under general anaesthetic (GA). However, in low resource settings, theatre availability may be scarce and suitably trained staff may be less easily sourced. We established a one stop outpatient nasal fracture clinic for assessment and manipulation of nasal fractures under local anaesthetic (LA) for children and adults.

Methods:
Our study aims to assess if manipulation under LA is an effective alternative to manipulation under GA. Prospective cohort study of 257 patients with nasal injury (n=21 children). SNOT 23, Visual analogue scale and patient satisfaction scores recorded 6 weeks post manipulation under LA.

Results:
GA (n=59) n=25 requiring manipulation, n=18 manipulation under GA, n=4 cancelled, n=3 refused. LA (n=198) n=84 requiring manipulation (n=83 manipulation under LA, n=1 manipulation under GA, n=5 children). 6-week post-manipulation under LA: SNOT23 (median 1 IQR 1,2) visual scale 1-10, 10 perfect result (n=64 10/10, n=10 9/10, n=6 8/10, n=4 7/10, $p<0.05$), patient satisfaction (n=17 excellent, n=67 outstanding, $p<0.05$).

Discussion and importance to the field
In this study we demonstrated that manipulation of nasal fractures under local anaesthetic is a safe and effective alternative to general anaesthesia with high patient satisfaction rates. The patient pathway was well received, demonstrating the potential for an outpatient service that may widen access to manipulation of nasal fractures in lower-resource settings and increase cost effectiveness of current services worldwide.

Name: Dr Hao Meng Yip
Institution: Barts Health NHS Trust

Abstract Title
Research in Global Surgery: A Bibliometric Study of 2015 to 2019

Study background and aims
In 2015, The Lancet Commission on Global surgery (LCoGS) report highlighted the growing burden of surgical disease worldwide. The importance of surgical research was emphasised as crucial in the development of high-quality surgical care, especially in lower and middle- income countries. We aim to assess the current state of global surgery research and report on the impact of the aforementioned report.

Methods
A literature search was performed to identify all clinical research in the field of global surgery between 2015 and 2019. This was conducted in MEDLINE, Web of Science and the Cochrane library. Articles were then categorised according to several outcomes of interest including number of articles published per year, surgical conditions, study types and geographical distribution of authors.

Results
The number of global surgery research articles has increased from 288 articles in 2015 to 314 articles in 2019. Most articles (65%) were focused on surgical conditions which can be treated with basic interventions. Global surgery research articles mainly involved authors from high income countries (49%).

Discussion and importance to the field
Though research output is still not performed by the countries with the greatest clinical need, the overall trend highlights the progression in research made by lower and middle- income countries (LMICs), most notably through the establishment of global research collaborations. Our findings have demonstrated that additional efforts are necessary to further improve research output in low-income countries.

Name: C. Raymond Li
Institution: Imperial College London, London, United Kingdom

Abstract Title
Tobacco control via cigarette taxation structure and associated price differentials

Authors
C. Raymond Li, Anthony A Laverty, Kiara C. M. Chang, Christopher Millett, Filippos T. Filippidis Imperial College London, London, United Kingdom

Study background and aims
Smoking is one of the most well-documented risk factors for various ENT disorders. Taxation is particularly effective in reducing smoking; however, this is undermined by industry keeping budget cigarettes low-cost and leaving large price differentials between premium and other cigarettes, allowing smokers to trade down, minimising health benefits. We evaluate different taxation structures' global trends and effects on price differentials.

Methods
Ecological analysis of 195 countries' price differentials was performed and compared against total, specific-excise, ad valorem, and other taxation. Differentials were expressed as the difference between budget and premium pack prices (as % of premium pack prices). Two- level linear regression models with repeated, nested, measurements assessed associations between taxation structures and price differentials, adjusted for year, geographical region, and income-group.

Results
Worldwide, median price differential between budget and premium 20-cigarette packs remained similar from 2014-2018 when adjusted for demographic factors. Total (−1.5% differential per +10% total tax, 95% CI: −2.5%-−0.4%) and specific-excise taxation (−2.5% differential per +10% specific-excise, 95% CI: −3.7%-−1.2%) were negatively associated with price differentials. No statistically significant association between ad valorem excise taxation and price differentials.

Discussion and importance to the field
Smaller price differentials between budget and premium cigarettes were associated with higher total levels of taxation and specific-excise taxes, but not ad valorem taxes. Increasing total and specific-excise taxes may reduce cigarette price differentials and tobacco use, and subsequently reduce risk of various health disorders, benefitting ENT conditions where smoking cessation improves prognosis, such as head and neck cancers.

Name: Wisha Gul, Vijay Pothula
Institution: Royal Albert Edward Infirmary, Wrightington, Wigan and Leigh NHS Foundation Trust

Abstract Title
Challenges of implementing a hearing screening programme for children in India

Study background and aims
34 million children worldwide suffer from disabling hearing loss, with highest share in South- East Asia. Unaddressed hearing loss adversely affects speech, cognition, education, and incurs significant economic impact. With no universal screening programme in low-income countries, non-government organisations undertake screening, though no sustainable model has been described. This study describes a programme for auditory screening and early intervention in southern India.

Methods
We describe a comprehensive model delivered free by a charitable organisation in Southern India from 2006 to 2022. Our primary goal was to integrate hearing impaired children into mainstream schools and society. The outcomes of 146,203 children screened by the programme are presented. Those that failed screening were issued with hearing aids and were invited for speech and language therapy.

Results
A total of 146,203 children were screened using Otoacoustic Emissions testing. 1393 children failed the screening test and were referred to audiology. Of these, 1182 children presented to audiology for further evaluation. A total of 997 children were confirmed deaf and issued with hearing aids. Finally, 136 children were integrated into schools to date.

Discussion and importance to the field
Our data shows a significant drop-out rate at each stage of intervention. Although financial constraints play a significant role, this study highlights the complex interplay of cultural, educational, and social factors influencing access to hearing care services. With rising interest in setting-up hearing care services in low-income countries, a better understanding of these challenges is vital to ensure meaningful outcomes.

Name: Agilandiswari Arumuga Jothi
Institution: University of Glasgow School of Medicine

Abstract Title:
A Qualitative Systematic Literature Review of Barriers in Delivery of Head and Neck Cancer Care in Low-Resource Settings: Possible Solutions

Study background and aims
There is a rise in the mortality burden of head and neck cancer (HNC), and it disproportionately affects those in low-resource settings with a finite clinical workforce. Hence, clinical care has been given low priority in poor regions. Therefore, this review aims to evaluate barriers faced in the delivery of HNC care in LMIC, while proposing solutions to overcome them.

Methods
A comprehensive literature search of studies from 2018-2022 was conducted using the MEDLINE and EMBASE databases, generating 33 abstracts. Articles meeting the inclusion criteria were selected. Covidence was used for abstract and full-text screening. Braun and Clark's model was used for thematic analysis. Identified themes were categorised into a framework of barriers that were faced by patients and service providers.

Results
The thematic analysis framework identified the main themes of barriers that were faced by the patients and the service providers. The main themes of patient barriers include 1) patient belief and perception, 2) financial constraint, 3) low health literacy and 4) technological inaccessibility. Service provider barriers are 1) administration, coordination, and strategy and 2) clinician's perception and capabilities

Discussion and importance to the field
The findings in this systematic review

highlighted the most important barriers that were faced by patients and service providers in the delivery of HNC service in areas with low resources. The theme of barriers identified in this study may potentially guide the delivery of HNC care in the future. We have proposed solutions to mitigate and address these barriers.

Name: Mr Bassem Mettias
Institution:

Abstract Title
10-year prevalence of acute Hospital ENT infections and the impact of COVID-19: a large population study.

Study background and aims
Acute ENT infections were the commonest referrals from accident and emergency to ENT services. The referral rate changed dramatically with the season, year, and national outbreaks, and during the COVID-19 pandemic. A retrospective longitudinal study of epidemiology of seven acute ENT infections in secondary care over 10 years.

Methods
A mixed city and rural population of over 650,000 in central England, was studied. Risk factors for each wave of infection during the surge of disease were sought. A statistical analysis of their significance was undertaken and the correlation with Group A-beta hemolytic streptococcus (GABHS) in hospitals and community. Seasonal variations, admissions, and the impact of COVID were analyzed.

Results
There were 16,883 cases of the seven index ENT infections during the 10-year period with seasonal variations. There was an incremental rise in 2018. An outbreak of GABHS was noted in community in 2014. There was no statistical ethnic or gender predominance. A dramatic drop in acute ENT infections was recorded during COVID-19 pandemic, which continued after lifting of lockdown.

Discussion and importance to the field
A resurgence in scarlet fever directly and indirectly contributed to an incremental rise in acute ENT infections in the following years. Both hospital and community B-hemolytic cultures have declined during the COVID-19 pandemic due to a reduction in infections as opposed to reduced case ascertainment.

15-17 February 2023 - ICC Birmingham