

TRANSACTIONS OF THE OPHTHAMOLOGICAL SOCIETY OF NIGERIA: PROCEEDINGS OF THE 2024 ANNUAL OSN CONFERENCE AT AMADEO EVENTS CENTRE, ENUGU, ENUGU STATE.

NAMED LECTURES

President's Lecture

They need sight and we need vision

Dr. John H. SANDFORD-SMITH, MBE, D.Sc

Emeritus Consultant Ophthalmologist at Leicester Royal Infirmary, Leicester, England

Email: jsandfordsmith@gmail.com

Being an abbreviated version of the text of the President's Lecture delivered during the 48th Annual Scientific Conference of the Ophthalmological Society of Nigeria on 5th September, 2024

I feel honoured to give this presidential lecture, and both myself and our family have very affectionate memories of five eventful years lived here in the 1960s and 70s. A quotation from the Danish 19th-century philosopher Soren Kierkegaard is a good starting point to reflect on my life since that formative time in Nigeria. "You must live life looking forward, but you can only understand life looking backward". I have spent the last 60 years both teaching and practising ophthalmology in the UK, Nigeria and several other developing countries. As I reflect on these years, I hope I can offer some suggestions to a much younger audience with their work and career in front of them.

The late Sir John Wilson (Figure 1) was the inspiration and founder for both the Royal Commonwealth Society for the Blind, which then became Sightsavers, and later the International Agency for the Prevention of blindness (IAPB), and he has probably done more than anyone else to prevent and alleviate global blindness. Yet he himself had two prosthetic eyes following an accident in the chemistry laboratory at school; a person with no sight and yet immense vision. Nigeria has one of the highest prevalence rates of blindness in the world, and in some parts of the country, there is less than one ophthalmologist per million people. According to a recent report, about 40% of its population are living in



Figure 1: Sir John Wilson with a rather "glassy" stare

absolute poverty.¹ If we are to achieve anything in such challenging circumstances, we also need immense vision. One of the phrases I have heard several times during this conference, both from the podium and from the floor, is that we must be prepared to "**think outside the box**". I hope this presentation will reinforce that and encourage you to do so. The Nigeria I came to in 1965 was full of enthusiasm to develop healthcare, education and infrastructure. In the cities, the inequality between the rich and poor was very startling (Figure 2), and in the rural areas, it was mostly subsistence farming. A more subtle inequality was that between the sexes. This is even important for ophthalmology because educating young girls is one of the best ways to prevent xerophthalmia and corneal blindness in young



Figure 2: Front and back view from a downtown Lagos apartment, 1965

children. Things are, of course, vastly different now, but the fundamental inequalities and poverty still remain.

I'm hoping in my talk to focus on four different themes, the importance of **community health**, the need for our work to be backed up with **audit** and evidence, the **challenge of cataract** which is still by far the most common cause of avoidable blindness, and **training** - who to train and how to train them.

My first experience of ophthalmology in the developing world was in 1964 as a short-term volunteer in an "eye camp" situation in Baluchistan, Pakistan; a very underdeveloped area of the world. Our hospital was admitting about 50 patients with **cataract** a day (as well as smaller numbers of patients with other conditions). The surgery was done without a microscope and without gloves, but that was also current practice then, even in centres of excellence. This was long before the days of intraocular lenses; most of our patients were illiterate, so we would give the patients a choice of either +10 or +12 spectacles, hold up our fingers at the other end of the room, and if the patient could count them, that was recorded as a success. That was our only **audit**.

My own surgical **training** was extremely short, about one week, but intense. On the first day, I watched my mentor, a very experienced surgeon and a household name in Baluchistan, while he explained to me what he was doing. On the second day, he would let me do the beginning and end of one or two operations. By the fifth day, this had increased to me doing the entire operation, and he then left to run the outpatient clinic, telling me not to operate on "only eyes" and to call him if I was in any

way worried. A far from ideal start to a surgical career, but it left me with a vision that the **challenge of cataract blindness could be solved even in the poorest communities with a small but dedicated team working together**. Sixty years later, I still believe that is true, and I am still learning!

Throughout the 1970s, cataract surgery techniques were changing quite rapidly in the developed world. With the use of operating microscopes, it gradually became evident that extracapsular surgery with an intraocular lens fixed in the capsular bag, and the possibility of a YAG laser capsulotomy, gave the best long-term results. In the developing world, even if a hospital could afford the capital equipment, the cost of intraocular lenses remained prohibitively high; so intracapsular extraction and post-operative aphakic glasses remained the standard procedure there. That was about to change thanks to a brilliant **audit** by a memorable American community health doctor, Larry Brilliant!! His detailed study of the epidemiology of blindness in Nepal in 1979-80 showed that less than half of blind people with cataract ever received surgery, and of those who did almost half were still functionally blind; the most common cause being a loss or breakage of their aphakic glasses, and the second most common a post-operative complication.²

The purpose of **audit** is not to see our name in print but to learn from our mistakes and to create change. This did indeed eventually create change, specifically the production of low-cost, good-quality intraocular lenses which everyone could afford, and are now often cheaper than a pair of spectacles. This came about thanks to the efforts of a charismatic Australian ophthalmologist, Prof. Fred Hollows, who had the ear of Bob Hawke, the socialist Prime Minister of Australia. He thought that poor people in the developing world should, if possible, have the same rights to modern surgery as those in richer countries, and he put up intraocular lens factories in Eritrea, Nepal and Vietnam. This was closely followed by both charities and entrepreneurs in India. Now, extra capsular extraction with IOL implant is standard throughout the developing world, and the debate is about the most appropriate

technique, manual extraction or phacoemulsification.

The contrast between clinical medicine, which most of us here practice, and community health is shown by the two posters in Figure 3. The picture was taken in 1988 in Uganda at a small rural hospital where a small team of us had gone to support the local ophthalmic nurse and carry out any necessary surgery, mostly cataract extraction. On the right is a simple Snellen chart. It emphasised our skill in measuring the



Figure 3: Two different posters side by side in a Ugandan eye clinic, 1988

patient's visual acuity, and as clinical ophthalmologists, we acquire many more sophisticated skills in measuring various parameters (loss of red reflex, intraocular pressure, angle of squint, depth of anterior chamber, optic cup/disc ratio, to mention just a few). We are the important ones, even though we are here to try and help the patients.

On the left is a poster giving advice about the prevention of HIV/AIDS. Uganda was one of the hardest hit countries in Africa at the beginning of the epidemic, and the health ministry responded very positively by campaigns in schools, churches and mosques, and on radio and television. At that time, there was no treatment and many people died, but people did change their behaviour because of the public health campaign, and the prevalence rate and death rate gradually fell. In public health, it is the community and the people who are important; we are merely mouthpieces, trying to advise and persuade them.

In contrast to Uganda, many of the other East African countries tried to play down the

seriousness of the HIV/AIDS epidemic. The reason for this was a fear that the very lucrative tourist trade would collapse and affect the economy. About 10 years later, I was in Malawi helping one of my former trainees who had gone to work there. He took me to the general medical ward to see one of his team who was admitted there, and explained that about three-quarters of the patients on the ward were suffering from or dying from AIDS. A telling example of the power of community health. A sensible decision on a major public health issue can lead to thousands or even millions of lives saved.

My second example of the importance of community health is shown by an individual patient (Figure 4). He was a bright young secondary school boy from a small village near Obudu in Cross River State, and during the school holiday became unconscious with some unspecified condition, possibly viral encephalitis. No one in his village had any healthcare knowledge at all; they did not know the importance of closing the eyes or protecting

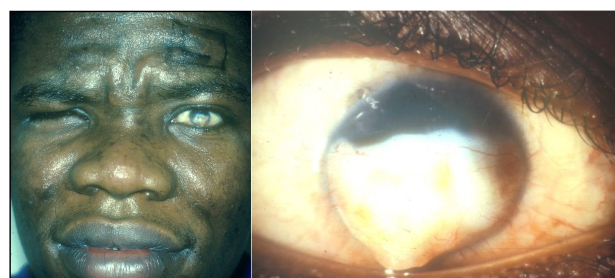


Figure 4: Full face and left eye of a young school boy with exposure keratitis, following an optical iridectomy. Obudu, Cross River State, 1980

the corneas of an unconscious patient, and when, after a few days, he recovered consciousness, one cornea had been destroyed completely, leading to phthisis bulbi. The other cornea had a very large scar completely covering the pupil, but fortunately, a small segment of the upper cornea had been protected by the upper lid. I was asked if anything was possible to restore his sight, and at a small rural hospital, I performed an optical iridectomy, and with spectacles to correct the astigmatism, he was able to resume his schooling. Some kind and generous supporters

of the catholic school where he was studying offered to pay for him to come to England for a corneal graft. Unfortunately, the cornea was so vascularised that the graft eventually rejected, but he remained able to see thanks to the optical iridectomy. So here was a young man who would never have developed eye problems if anyone in his village had access to a rural health worker or enough knowledge to close the eyes of unconscious patients. He was greatly helped by a simple operation in a small rural clinic, but could not be helped by the most sophisticated technology of that time. The same story, the importance of community health.

Training. My first experience was as a general surgical registrar in University College Hospital (UCH), Ibadan in 1965. It was then the only teaching hospital in Nigeria, and indeed in the whole of West Africa, and there was a great atmosphere of enthusiasm. I very much enjoyed both learning from my mentors, the consultants, and teaching the medical students. When I returned to Nigeria eight years later as a consultant senior lecturer in ophthalmology at the Ahmadu Bello University (ABU) Hospital Kaduna, there were four teaching hospitals in the country with more in the pipeline. I am told there are now over 40, and the number is still growing. A truly remarkable achievement of which Nigeria can be justifiably proud, as a great deal of dedicated effort and planning is required to create these institutions. What happens to all these young doctors? When our British National Health Service (NHS) was founded in 1947 by the Labour politician Aneuryn Bevan, he had a doctor GP friend called John Tudor Hart who, like him, came from the deprived industrial valleys of South Wales. He put forward an idea called the "*Inverse care law*", a pun on the well-known "*Inverse square law*" about gravity proposed by Sir Isaac Newton. Dr Tudor Hart's theory was that the more medical care a patient needs, the less they get. It is true of Britain, where we have a free health service, and even more true of countries like Nigeria.

We all like to better ourselves and our families, especially in Africa, where the extended family system is such a vital social and financial

support. The result is the "*brain drain*" and educated young Africans with internationally acceptable qualifications leave for richer countries where salaries and living conditions are much better. In the 1970s, when I lived in Nigeria and it was considered a prosperous country, there were many doctors like myself who came from Britain, and also from India and Poland, because the salaries were much better here. As the economy subsequently collapsed, most of these overseas doctors went back home, and Nigerian doctors started emigrating to South Africa, the Middle East, Europe or America. Another medical migration is within the country, from the rural areas and small towns to the big cities where there are better opportunities and more private practice. All this only bears out the truth of the "*inverse care law*", and leaves healthcare systems struggling for manpower and patients not treated.

Vision 2020. Most of us are very familiar with this comprehensive program, put forward in 1999 by the International Agency for Prevention of Blindness to try to eliminate avoidable blindness by the year 2020. One of its aims was to focus on certain blinding diseases which were thought could be either prevented or treated successfully. The main four were Onchocerciasis, Xerophthalmia, Trachoma and Cataract. Now that Vision 2020 has run its course, we can do an **audit** and see how it has succeeded for these four conditions.

Onchocerciasis control has been extremely successful. The areas around Kaduna had a very high prevalence, and I remember seeing many patients with their eyes full of microfilariae, and being treated not very successfully with long courses of diethylcarbamazine tablets followed by suramin injections. Now it is a disease of the past thanks to the mass distribution of ivermectin tablets. The control of **xerophthalmia** has not been quite so dramatic, but has been steadily declining as a cause of childhood blindness. In 1975, when I examined all the children in Gindiri Blind School in Plateau State, over 70% were blind from corneal scarring or its complications.³ Now it is a relatively infrequent cause of childhood blindness, mainly thanks to measles

vaccination, but also improved nutrition and education of young mothers.

The control of blinding **trachoma** has likewise been very successful, mainly due to the effective implementation of the SAFE strategy. Even very fragile public health services have shown how effective they can be in controlling these three diseases. We ophthalmic surgeons have not played much of a part in this success story. The fourth cause, **cataract**, is specifically our concern, and sadly, we must confess that as a profession, we have failed. Admittedly, over the years our numbers have increased and more cataract surgery is being done year on year, but we are still woefully short of eradicating cataract blindness, which remains the number one cause of avoidable blindness throughout Africa. According to health economists, cataract surgery is one of the most cost-effective medical interventions; the only other intervention which can match it is advising patients to stop smoking. This, of course, costs very little and if the advice is heeded, can improve both life expectancy and the quality of life.

I will compare the different types of surgical treatment available for cataract to a journey I made about 30 years ago to the northern, very mountainous area of Pakistan for a cataract surgery camp. I flew there in a small plane at a height lower than the surrounding snow-capped mountains, some of the highest in the world. It was a most dramatic and exhilarating journey with incredible views. The plane represented modern technology, and modern technology (i.e. phacoemulsification with a foldable intraocular lens) has made cataract surgery extremely straightforward and successful, with an incredible result as far as the patient is concerned. I myself, like many octogenarians, am a beneficiary. To continue the analogy, air travel is quite expensive, more than poor people can afford, and sadly, most poor people in the developing world cannot afford phacoemulsification with a foldable lens.

For the return journey, the plane could not fly because of bad weather, so I was obliged to spend 24 hours crammed in a minibus taxi for the 1000 km length of the Karakoram Highway. Both the bus and the highway were built using modern but much less sophisticated

technology, and the journey was very much cheaper. This represented simpler and cheaper technology, such as extracapsular extraction with a rigid PMMA lens, affordable for almost everyone in Nigeria, but still with very good surgical outcomes.

In the distance across the steep Indus river valley, one could see the old traditional path for a packhorse, a mule or even someone to walk. The journey would take about two weeks; people had travelled that way for hundreds of years, and no modern technology was involved. This represented either treatment by traditional healers (i.e. couching) or no treatment at all and dying with blinding cataract. When I worked in Kaduna in 1975, I saw many patients who had been couched and I can only clearly remember one who had a successful result. Sadly, in Nigeria today, there are still many people growing old and dying blind from cataract, and in the northern areas of the country, one can still see eyes that have been couched.

Training the next generation of ophthalmologists. Nigeria urgently needs more, and many of us here are involved in this; very necessary if we are to begin to tackle the challenge both of cataract blindness and of the ever-increasing scope of ophthalmology and medical and surgical treatments available. Educational psychologists tell us that there are three separate aspects to training: **knowledge, skills and attitude.**

Knowledge. The Internet age has created an explosion of it, all readily available, but it is difficult for the student to find a way through this barrage of information, and the guidance of a tutor is essential. Textbooks and manuals are not as important as they used to be, but should still play a significant role in training.

Skills require greater input from the trainer, if possible on a one-to-one basis, and also because the eye is such a small and delicate organ requiring very gentle and precise handling. Mistakes can lead to irreparable damage. Some skills training can be achieved by watching videos on the Internet, and wet lab and simulated training is also very helpful,

but hands-on apprenticeship training is still essential.

Finally, there is **attitude**. At first, this sounds like a rather nebulous concept, but I know of many trainers, including myself, who think it is perhaps the most essential. However, it is something which is caught rather than taught and, to a certain extent, is part of the trainees' personality. To illustrate the importance of attitude, I will first describe two common situations most of us encounter sooner or later, and then I will describe the activities of two colleagues and friends whose excellent attitude has led to enormous change for many people.

Situation 1. What happens when a patient gets post-operative endophthalmitis, or even a post-operative iris prolapse? Hopefully, these are very rare situations, but it is likely to happen sooner or later, even to the most careful and conscientious surgeon. I once had a colleague with what seemed to me a very negative attitude. He would always cast around for someone to blame, the patient for rubbing their eye, the relatives for not putting the drops in properly or even the anaesthetist for making the patient cough whilst waking up! Often we can have a rather neutral attitude: "these things happen occasionally and it's just bad luck". A positive attitude seeks without recrimination to try to analyse exactly what went wrong, and if any lessons can be learnt from it. In the case of infection, to try to find where it came from, the surgeon, the assistant, the irrigating fluid or other possibilities. An iris prolapse or post-operative corneal oedema is almost certainly the surgeon's fault, and we need to acknowledge it, try to analyse it and make sure it doesn't happen again.

Situation 2. Medical ethics teaches us to treat all patients alike with compassion and respect, but sometimes in a busy clinic, this can be very difficult. We may not share a common language or culture with some patients, we may be pressurised by our own friends and relatives, or by a demanding so-called "VIP". Negotiating our way successfully through all these everyday occurrences in clinical practice is what makes us good doctors.

My two icons are Dr Nick Metcalfe, a British ophthalmologist who worked in Malawi, and Dr Hannah Faal, a Nigerian ophthalmologist who worked in the Gambia. I will describe her contribution later.

Nick (wearing the green theatre scrubs in Figure 5) started training in ophthalmology in his late 30s, having previously been a GP. He wanted to work in Africa. With difficulty, I managed to persuade my consultant colleagues to take him on as a trainee at that age, but it was possibly one of the best decisions we ever made. Having passed his diploma but not attempting his



Figure 5: Nkhoma Eye Hospital, one day's post-operative patients and staff

fellowship, he went with the CBM to Malawi in 1998 to a single doctor unit that was doing about 500 cataract operations a year. He soon realised that there was a much greater need in the community, and managed to meet this firstly by good leadership, inspiring his staff to be part of a team and involved in all the decisions that the hospital made; and secondly by working very hard himself. He was obsessional about the quality of his surgery and audit; all his post-operative visual acuities were recorded by a nurse so that he would not record them himself and possibly cheat! He encouraged successful patients to become "cataract finders" in their community, and teamed up with a community health programme. He persuaded the CBM to send one of his best theatre nurses to Kenya to get trained as a "cataract surgeon" and to send his optometrist to the Aravind hospital in India to improve his refractive and spectacle-making skills. Every year, the volume of work increased, and after a few years, he was doing 4500 cataract operations a year, as well as

glaucoma and lid surgery and managing the hospital himself. The work continued to expand, and the CBM decided to make his hospital their flagship unit for East and Southern Africa; and then disaster struck. He developed an unspecified illness complicated by a cardiac arrest from which he was resuscitated, but was left with a significant degree of brain damage and unable to carry on working. However, during his 12 years there, he showed what could be done by someone with the right **attitude**.

The last issue I want to tackle is **“who does what in healthcare”**, something which is quite fluid and changing and is also controversial, sometimes very controversial. Throughout the 20th century, most of the professional roles in healthcare in Britain were fairly well defined. Our National Health Service has been a victim of its own success. Thanks to good community health and sophisticated surgical and medical treatment, we old people are living much longer and so consuming more and more of the health service budget, which continues to increase exponentially. So this century has seen considerable rethinking of who does what and the creation of new roles in healthcare. The founder president of the Royal College of Emergency Physicians wrote an article in the British Medical Journal for the 70th anniversary of the founding of the NHS, saying we needed to give up our *“professional protectionism”*.⁴ Here are some examples:

- Since I retired in 2000, anti-VEGF injections have been shown to be very effective in controlling age-related macular degeneration. They have to be repeated frequently, the disease is very common, especially in us elderly, and consequently, ophthalmic nurses have been taught to give intravitreal injections, something that didn't happen before.
- Optometrists, who in my day had no clinical role, are now getting involved in patient care. There are so many elderly people with glaucoma that those with stable glaucoma are often reviewed by optometrists and not in hospital. Sometimes patients have their routine post-operative care after cataract surgery carried out by their optometrist.
- A new role, the physician assistant, with a short two-year training, has been created

to help do some of the clinical work in GP surgeries.

- In my own teaching hospital in Leicester, there was a big backlog of patients requiring carpal tunnel surgery. Two of the orthopaedic consultants decided to teach a very competent and enthusiastic theatre nurse how to carry out this single procedure. They completely standardised the protocol and gave him a very intensive hands-on training. Previously, the carpal tunnel surgery had been done sometimes by orthopaedic surgeons, sometimes by neurosurgeons and sometimes by plastic surgeons, but subsequently for some years it was all done in Leicester by this one *“carpal tunnel surgeon”*. The senior people in the Royal College of Surgeons in London were not at all happy when they heard of it (medical protectionism again), and so a delegation came from London aiming to stop it. However, our local team had carefully audited the results over several hundred cases and not a single complication. They asked the London visitors how that compared with theirs, who, of course, had not done any audit!

All this is an introduction to my key question: **“who will tackle the burden of cataract blindness in Africa?”**, and this is where I mention the role of my second icon, Dr Hannah Faal, probably Nigeria's most eminent living ophthalmologist, after her years as president of the International Agency for Prevention of Blindness. Her husband was Gambian, so she went there and found she was the only ophthalmologist. She persuaded Sightsavers International to fund her programme of providing low-cost treatment throughout the country with an integrated system of community care, and training *“cataract surgeons”* to do the bulk of the work outside the capital. The results of her pioneering programme are plain when one sees the statistics for cataract surgical rates in West Africa (Figure 6), though admittedly these figures are from the year 2000. I have been unable to find any more recent figures.

I am very aware that there are no plans in Nigeria for such a program. As I understand it, there are two main objections. The first is that

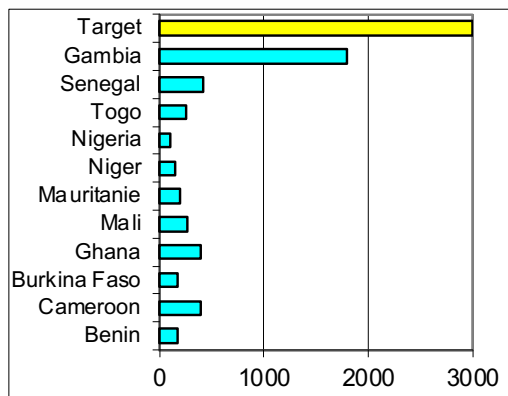


Figure 6: Number of cataract surgeries per million patients in different West African countries, 2000 A.D

these “cataract surgeons” are second-rate and not well-trained. I have worked extensively in other African countries in their training both as a trainer and a mentor, the Gambia, Senegal, Sierra Leone, Ghana, Benin, Uganda, Tanzania, Ethiopia and Malawi! and I can categorically refute this. They are very well trained but only in a limited sphere, and I have never yet encountered any of them pretending to be an ophthalmologist, although it may happen. Indeed, in one instance, young trainee ophthalmologists from a nearby teaching hospital sometimes prefer to go to the “cataract surgeon” for their practical training.

The other objection is about “*professional protectionism*”; are these people a threat to us, and might they take our business? My response to that is that ophthalmology is expanding so rapidly with much more being done in terms of refractive surgery, glaucoma surgery, the treatment of diabetic retinopathy and macular degeneration, etc., that there is likely to be far too much business for us for a good few years yet. Also, as cataract surgical techniques improve, surgical intervention is recommended at an earlier and earlier stage, so the number of patients who could benefit from surgery enlarges exponentially.

I began my talk with a quote from a rather obscure philosopher, and I will finish with a

quote from a very famous philosopher, Karl Marx. On his tombstone in London (Figure 7) is the following inscription: “*Philosophers have only interpreted the world in various ways, the*



Figure 7: The tombstone of Karl Marx in Highgate Cemetery, London

point is to change it”. We may not agree with his philosophy, but as privileged professionals in a very needy country, we must do our best to create change and to be prepared to “*think outside the box*”.

REFERENCES

1. Maclean R and Alfa I. Protesting Hunger, Nigerians Warn, ‘Life Cannot Continue Like This’. New York Times, August 2nd 2024. <https://www.nytimes.com/2024/08/02/world/africa/nigeria-protest-end-bad-governance.html> (cited 07 October, 2024)
2. Brilliant LB, Pokhrel RP, Grasset NC, Lepkowski JM, Kolstad A, Hawks W, Pararajasegaram R, Brilliant GE, Gilbert S, Shrestha SR, et al. Epidemiology of blindness in Nepal. Bull World Health Organ. 1985;63(2):375-386.
3. Sandford-Smith JH, Whittle HC. Corneal ulceration following measles in Nigerian children. Br J Ophthalmol. 1979 Nov;63(11):720-724. doi: 10.1136/bjo.63.11.720.
4. Mann C. Doctors need to give up professional protectionism. BMJ. 2018 Apr 24;361:k1757. doi: 10.1136/bmj.k1757.