

Sub-specialization; Is it the way to go?

The number of universities offering postgraduate ophthalmology training programs (Masters of Medicine in Ophthalmology) is increasing in the ECSA (Eastern, Central and Southern Africa) region. The College of Ophthalmology of Eastern, Central and Southern Africa (COECSA) country membership includes Ethiopia, Uganda, Kenya, Rwanda, Burundi, Tanzania, Zambia and Malawi. All countries in the ECSA region, except Burundi and Rwanda, have at least one university institution running Masters of Medicine (MMed) program in ophthalmology. The increase in postgraduate ophthalmology programs is slowly leading to expansion of the workforce of local ophthalmologists in the region. The training programs are unique to the needs of the region and are of high standards, comparable to training programs in western countries¹. While the concentration of ophthalmologists in the region is slowly increasing, a trend has recently been observed of ophthalmologists from the region undertaking subspecialty fellowships. This editorial will look at whether sub-specialization is really the way to go for ophthalmologists from ECSA region.

A subspecialty is a narrow field within a specialty. It is both a catalyst and a result of advances in clinical sciences or health care². Sub-specialization ensures that a group of specialists devotes their time and skills to a certain group of patients or diseases. This allows the subspecialists to see a large volume of patients in their chosen field and thus leading to marked improvement in knowledge base and precision of skills among the sub-specialist in their respective fields. This has societal value as it is associated with improved patient care and better scientific understanding of diseases³. Advances in science or clinical care can also lead to development of new subspecialties.

However, subspecialization can also cause problems in health care systems². It can lead to high cases of misdiagnosis if sub-specialization is undertaken too early as the sub-specialists may be incompetent when managing patients with conditions outside their field who may need referral to other sub-specialists.

Medical training and workforce in Eastern, Central and Southern Africa (ECSA): Where are we coming from?

There were very few medical schools in ECSA region and the rest of sub-Saharan Africa (SSA) in the colonial era. After gaining independence in the 1960's and 1970's, countries started establishing medical schools. However, the progress was slow until 1990's when many medical schools were established in Africa⁴. By 1980, postgraduate specialists training in ophthalmology (Masters of Medicine in Ophthalmology) programs were only established in few countries in ECSA region such as Kenya⁵ and Tanzania⁶.

The health systems in ECSA and Africa as whole have been characterized by chronic shortage of medical doctors. As a result of the critical shortage of medical

doctors, formal training and deployment of mid-level workers (MLWs) has been undertaken in African countries in order to strengthen human resource capacity in health systems. Mid-level workers are healthcare providers who have received less training, have a more restricted scope of practice than professionals, and are accredited by their countries' licensing bodies⁷. The training of midlevel health workers in Africa has its origin from early 20th century and persisted beyond the colonial era. The training, titles used and scope of practices for mid-level workers is not standardized across the African continent. For example in Malawi, there are two cadres of mid-level clinical workers, medical assistants and clinical officers⁸. Medical assistants are trained to perform basic clinical but non-surgical tasks. Clinical officers undergo a longer period of formal training than medical assistants. They are trained to carry out both medical and surgical tasks. For specialties such as ophthalmologists, the mid-level workers undergo additional formal training in eye care and become "ophthalmic" mid-level workers.

Current sub-specialist training models for ophthalmologists from ECSA region

There are currently three sub-specialization training models for ophthalmologists from the ECSA region. In the first model, the training can take place in institutions outside the ECSA region such as India, South Africa or Western countries. Such centers are well established and experienced in conducting sub-specialist training. However, this training model is associated with lack of hands-on surgical experience in some centers. For the second model, sub-specialization training takes place in some institutions within the ECSA region such as Kilimanjaro Christian Medical Center (KCMC) in Tanzania. The sub-specialist trainee has the advantage of undertaking the training in a centre with similar work environment to his/her hospital. In a third model, a sandwich training takes place at a home institution of the subspecialist trainee in collaboration with an institution in a western country. Through intermittent short visits, an experienced sub-specialist from a western country conducts the training in a hospital where the trainee is based. This sandwich model has the advantage of strengthening capacity in the trainees' home hospital and has shown to be successful at Kenyatta National Hospital in Kenya where sandwich training was done in collaboration with the Department of Ophthalmology of the Ludwig Maximilians University (LMU), Munich in Germany⁹.

Sub-specialization for ophthalmologists in ECSA. Is it necessary?

Sub-Saharan Africa, including ECSA region, has the lowest concentration of ophthalmologists in the world. Africa has less than 1% of the total number of ophthalmologists in the world and all countries in ECSA region have less than 50% of minimum total number of

ophthalmologists recommended by the World Health Organization to meet needs¹⁰. With the limited pool of ophthalmologists, is this the time for ophthalmologists in ECSA region to go for sub-specialization?

There is changing trend in the pattern of major eye diseases in Africa. With increase in aging population, posterior segments disease such as glaucoma and diabetic retinopathy are increasingly becoming major public health problems in Africa. Unlike cataract, posterior segment diseases are difficult to manage as the treatment for these conditions is not one off thing. The management of the conditions needs development of health systems as a result of chronic and complex nature of the conditions¹¹. Additionally, glaucoma management still remains a complex problem in Africa as diagnosis and the current treatment options pose major challenge¹². We need highly qualified, experienced and skilled ophthalmologists to lead research and management of the posterior segment diseases in ECSA.

Vitamin A deficiency and measles have been reduced significantly as major causes of childhood blindness in Africa. This is a result of intensification of public health interventions such as Vitamin A supplementation and vaccination. Other eye conditions such as congenital cataracts, glaucoma and retinoblastoma are now emerging as major causes of childhood blindness¹³. Management of these conditions require paediatric ophthalmology tertiary facilities. World Health Organization recommends one paediatric ophthalmology tertiary facility per 10 million population¹⁴. This calls for training of paediatric ophthalmology subspecialists in Africa.

Sub-specialization has a number of benefits as it leads to advances in clinical care. For ECSA region, sub-specialization leads to transfer of skills from developed countries to the region. The end result is improved eye care services and capacity building within the region. Training of local vitreo-retinal surgeons led to increased quality and rate of vitreo-retinal surgeries at Kenyatta National Hospital in Kenya⁹. In addition, sub-specialization may potentially promote retention of ophthalmologists in the region as provision of higher training has been associated with willingness of African ophthalmologists to continue working in Africa¹⁵.

However, sub-specialization can also be detrimental to the development of ophthalmology in the region when it is not done according to the needs of the region or member countries. This can happen, for example, when sub-specialization is undertaken in fields not relevant to the region or when there are too sub-specialists in few fields while other equally relevant fields are profoundly deficient of sub-specialists.

CONCLUSION

The growing number of sub-specialists in ECSA is a welcome development. This may lead to capacity building and subsequent improvement in service delivery, training and research. However, the trend of

sub-specialization should be aligned with the needs of the region in order to ensure effective development of ophthalmology in the region.

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