

EDITORIAL**The Training and Practice of Radiology in Ethiopia: Challenges and prospect****Ashenafi Aberra Buser, MD, SCR, SSCBI & VIR**

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Documented evidence to practice of Radiology in Ethiopia dates back to the early eighties. It all began with the use of conventional radiography and non-Ethiopians practicing under the department of internal medicine of AAUMF. After maturing into level of a department, Radiology residency training was then initiated in 1987 and AAUMF remained to be the only institution to provide residency program in the field till 2014. Then on multiple colleges have started residency training programs in radiology and that has not only greatly reduced the burden imposed on AAU but also provided some input in solving the problem of shortage of radiology professionals. Contributions in terms of improving quality of residency training and also of the practice of radiology is unquestionable.

Currently there are around 28 public medical schools and colleges in Ethiopia which train medicine to the level of medical doctorate degree. In addition, there are three teaching hospitals training professionals with medical or related background to the MD level. Of these colleges, schools and hospitals, only five provide residency training in Radiology. Till date there are around 350 radiologists in Ethiopia that is around 1 radiologist to 350,000 population. The seriousness of shortage of radiologists can be noted when this number is compared to the data in some other African countries like Egypt 1:20,000 and global figures like India 1:100,000, Europe 1:7,700, USA 1:6,700 and Cuba 1:4,500 (1).

Diagnostic and interventional radiology has increasingly become an integral part of patient care due to the expanding practice of evidence-based medicine and choice of minimally invasive treatment means to various diseases as well as rapid advancement in the technology of imaging. Having well trained professionals in the field, hence, is a necessity to any health system and has made radiology one of the most sought after specialties in medicine (2). The situation in our country is no

different and in fact of higher magnitude. As was noted in the data of the national residency matching examination results, joining radiology residency program in the few (<60) positions was highly competitive and required top scoring in the national matching examination. The challenge in the radiology residency training, hence, starts at the matching process, form the small number of available positions to one of the most sought after specialties. Shortage of skilled professionals and technology in the field are the main constraints in the expansion and thus, capacity building in radiology residency training sites is mandatory so as to increase the number of available trainee positions, and use of tele-radiology and tele-education as a means to fill the professional gaps in these sites as well as in starting new training facilities. Facilities with higher resource profiles can be used as hubs while those with shortages as spokes in the tele-radiology tele-education system.

Radiology residency training programs in the country are currently training more than 100 residents at five sites. Two types of curricula are being followed by these institutions: an older three year based and a new harmonized three- and half-year training curricula. It has been more than four years since a harmonized curriculum was developed at the national level but big institutions like AAU-CHS was too late to implement and this has been a big challenge in providing the training in a uniformly standardized format. The footprint is noted as limiting any possible staff exchange, residency exchange and tele-education programs. Identified gaps in the older version of radiology residency training curriculum especially in terms of less exposure to clinical radiology and research are still present in those sites using this curriculum. The harmonized curriculum should be applied uniformly in all training sites, of course with timely revisions done in the process.

The ever expanding field of diagnostic and interventional radiology needs a continuous update and upgrade into newly developed imaging tools and techniques. This requires availing modern and sophisticated imaging modalities at training sites, maintaining them and upgrading when the need arises. The federal and regional governments are working on availing various types of imaging modalities, but as was the problem in the past, keeping these modalities functional for a longer period of time with all the necessary accessories should be seriously taken into consideration. The purchase and procurement process should include maintenance contractual agreements. Additionally, the private sector can be incorporated, with clearly defined roles and responsibilities of the parties involved, into the public radiology services as one way to curb the problem (3).

Absence and shortage of well-trained staffs in making appropriate standardized use of the availed imaging equipment and providing training is another challenge in the already running and in planned expansions of radiology residency training programs. Staff retention and availability for a longer working hours at training institutions can be achieved through private public partnerships formulated in a manner that stimulate the staff for providing more public and private radiology service while conducting training at the same time.

Radiology practice in Ethiopia is mainly on diagnostic area. Fewer efforts in interventional radiology practice are noted in the capital. Graduate radiologists are distributed from the level of a medium clinic to specialized hospitals and diagnostic centers and /or public institutions. The boundary between private practice and public (government) practice has had a great impact in the radiology services (and hence training) given in the public sector. The private sector is becoming alluring taking skilled professionals more and more away from public practices. Additionally, it has stretched professionals into substandard practices making them busy with day to day routines rather than improving their profession and exploring new areas. Partnering the private sector into the public service either by providing radiology services for the need at the private sector making use of public resources or by making the private sector take over provision of imaging services in the public institutions will gradually wipe out this boundary and improve the quality of care provided in both sectors.

Another possible factor noted in sinking the skilled radiology professionals into substandard

practices is absence of standardized and uniform payment schemes as per the degree of qualification of practicing professionals. Payment per case payment schemes noted in various institution don't take professionalism, degree of training and the ever increasing cost of living into consideration. And to solve these issues on personal basis, professionals, knowingly or unknowingly, are noted to go into substandard practices by overstretching themselves in high workloads. Professional associations are seen to solve similar problems in other medical professions and Radiological society of Ethiopia should work in coming up with a standard and optimal payment models for various levels of radiology professionals. Proper payments will definitely decrease the associated work burden on professionals and less load in the day to day routine will give them the chance to get involved in research works which are noted to be a major miss in radiology practice in Ethiopia.

Research work is practically absent or in its infancy in the radiology practice in Ethiopia for the reasons related to the above mentioned components in the practice and training. Solving the problems is believed to have consequences in giving time freedom for research practices. Additionally, institutions should try to stimulate clinical research works by providing research advisor professionals to clinicians (Radiologists included).

This special edition Journal of research works in Radiology, the first of its type, will have an effect in invigorating Ethiopian radiologists initiate processes which, as described above, are believed to help in allocating more time to research practices in parallel to their clinical practices in radiology.

Enjoy the journal while asking yourself how much you have contributed and is planning to contribute the growth of your profession in your country.

The current issue of the EJHS, the 1st special issue for the year 2022, contains an editorial and nine original articles, a perspective and a case report.

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