RADIOGRAPHY TRAINING PROGRAM - YESTERDAY AND TODAY

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Introduction

Radiology is a field of science where now a days most things are evidence based, be it [1]MRI, COMPUTED TOMOGRAPHY, ULTRASOUND, VASCULAR INTERVENTION , NUCLEAR MEDICINE, FLUOROSCOPY, OPERATING ROOM , PORTABLE RADIOGRAPHY OR GENERAL RADIOGRAPHY. Radiographers / Radiation technologists are integral part of radiology, produced evidence-based radiography which is based on the combination of clinical expertise and research-based evidence, patient preferences and resources available.

It's the sound knowledge base produced by continuous academic education and clinical training of these individuals which enables them to produce quality results and make them competitive at international standards, which in return helps the radiologist and physicians to give diagnosis, perform intervention and treat patients. That is why Radiography is a profession which plays a vital role in improving the quality of healthcare of patients.

Field of Radiography is changing at a rapid pace with introduction of new imaging technologies however in order to operate these complex equipment and to make best use of them, the level of radiographers training is not uniform throughout Pakistan. This is causing further pressure over the radiographers as their level of training lags behind the increasing technology demand.

Thus, it is a matter of great concern and needs revision and restructuring of educational and training programs of radiography in Pakistan.

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Curriculum History

If we evaluate the historical perspective and development it is seen that educational level and standards of Radiography varies world wide, it would range from diploma after secondary school as is still the case in Pakistan to a three to four year bachelor's degree and/or master's degree. Formal training programs in radiography range in length from 1 to 4 years and lead to a certificate, an associate degree, or a bachelor's degree. Two-year associate degree programs are most prevalent [2] in our part of the world. In PAKISTAN, Aga Khan University Hospital (AKUH) is amongst the leading institutions for producing the quality radiographer, fulfilling national and institutional needs. As there was no model in the past, AKUH developed the initial defined curriculum in 1986, which comprises largely clinical work that is hands on training with very few didactic lectures related to radiographic positioning and radiation factors and radiation protection.

Analyzing the need with the fast moving technological change, the department realized to make the change and introduced an enhanced training module for the trainee radiographers and first time the course was extended from 12months to 18months in 2006, to reflect this enhanced expectation.

However before the session could see its completion, it was again felt that this duration was not sufficient and the current demand and acceptance in general is minimum of two years and affiliation of our program with any international standards would require this minimum time duration.

Heads were put together again to bring the new curriculum which would incorporates the modules that are taught internationally[3] and guidance was sought from internationally practiced curricula. This change has been found very useful in improving the training standards so far.

Objectives

This curriculum was designed to :

- Encourage students to achieve their full potential.
- Produce Radiographers who are competent (experts)
- Produce Radiographers who are compassionate (patient's advocate)
- Develop Radiographers leadership skills
- Produce Radiographers who are able to work effectively in teams
- Develop critical, analytic and reflective skills
- Enable life long self directed learning
- Make them research oriented radiographers

New Curriculum Online

The topics and subjects covered in it include:

1. Fundamentals of Radiologic Science and Health Care
2. Ethics and Law in the Radiologic Sciences
3. Ethical and professional development in health care
4. Medical Terminology
5. Basic Mathematics and Statistics
6. Anatomy and Physiology
7. Radiographic Photography / Radiographic Physics
8. Radiographic Positioning and Procedures
9. Radiographic Critique / Image Analysis
10. Radiation Production and Characteristics
11. Radiation Protection
12. Radiation Biology
13. Introduction & Orientation of Different Modalities
14. Radiographic Pathology
15. Computers in Radiologic Sciences
16. Developmental Psychology
17. Behavioral Psychology
18. Introduction to Epidemiology
19. Pharmacology (contrast media), I.V cannulation and (BLS)

Apart from the generalized development, the curriculum also focuses on their professional development, and therefore there is a special focus on:

- Development of communication, Presentation and interpersonal skills
- Training sessions on Safety & Security, Infection control and Radiation safety

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To bring about these above mention development and changes, we had to focus on improvements in our system of delivery of curriculum, therefore:

- Curriculum now has 50% didactic and 50% practical component
- Rotations in all modalities for better understanding of procedures and their processes
- Involvement of medical physicist in teaching process for physics and Quality assurance
- Behavioral and Development Psychology sessions in collaboration with Aga Khan
- University School of Nursing (AKU-SON) Structured evaluation and assessment process

Outcomes

The first batch practicing the new curriculum is already showing significant improved performances in the practices, and now trainee radiographers show:

- Better patient care & patient handling
- Better Infection control practices
- Better understanding of Radiographic exposure factors in correlation with new Computed
- Radiography (CR) system
- Improved practices of Radiation protection and
- Better Quality control and quality assurance Interest and enthusiasm in research oriented activities and evidence based radiography

On the other hand they also have been showing marked improvement in the knowledge base and now have better understanding in usage of Medical terminologies, and relating anatomy & Physiology for better patient care. Increased efficiency while using Radiographic equipment and their controls and thus utilize effectively the Radiographic techniques, Positioning & Radiographic Critique, making conscious effort in applying the Radiation Biology philosophy and Radiation protection practices, It can be said with proud, they have better understanding to Radiographic Pathology then other earlier trained Radiographers.

Conclusion

This all had not been possible without the buy in of the leadership and management. INSHALLAH (By the Grace of Allah) the efforts put in by all will generate fruitful results and the journey after change has just begun and we hope it will go a long way, and will touch the life of many who will become the part of this new Radiography training program.

References

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