

## EDITORIAL

**Future nuclear medicine physicians in Pakistan: rare and valuable or extinct and unnoticed?**

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*The trouble with the future is that it usually arrives before we're ready for it . (Arnold H. Glasgow)*

Nuclear medicine (NM) physicians have traditionally been a small community compared to other medical specialties, but young physicians keep choosing nuclear medicine as a specialty, ensuring enough specialists to sustain the population and keep the specialty thriving. In Pakistan we have seen a decline in induction of new nuclear medicine physicians and even more worryingly, a trend towards a change of specialty following initial training in nuclear medicine.

If this trend continues we run the potential risk of future shortage of trained nuclear medicine physicians in the country if we are unable to replenish the population that retires or otherwise gets out of the "active" pool.

Nuclear medicine specialist training in Pakistan began with the MSc course in nuclear medicine in 1988 with 14 graduates in the first course. Since then, a total of about 150 doctors have successfully completed the MSc course and the majority are employed in Pakistan working at the many PAEC nuclear medicine centers with a smaller number working outside the PAEC both in the governmental and private healthcare institutions.

Starting in 1999, the MSc course in NM was supplemented with FCPS in nuclear medicine. About 20 physicians have graduated with FCPS in NM. Most of these have been with a previous MSc degree with fewer opting for FCPS directly.

Despite the number of trained NM doctors in Pakistan there still is a shortage of physicians

in the specialty mainly due to an expansion of nuclear medicine service provision in the country both through new PAEC non-PAEC nuclear medicine service providers.

There are no unemployed nuclear medicine physicians in Pakistan. In fact, several positions are yet unfilled due mainly to an exodus of the trained professionals in the specialty, who are able to find relatively lucrative jobs abroad. And yet there remains an underlying current of professional dissatisfaction.

Change of specialty is the other major cause of the nuclear medicine physician pool attrition. Of the indigenously trained nuclear medicine physician population of about 150, almost 30 have changed their specialty after their post graduation, and it appears that at least half a dozen more, are contemplating opting out of nuclear medicine and moving to other specialties (radiology, radiotherapy, oncology, etc.) looking for greener pastures.

Induction into the MSc nuclear medicine training program has not seen any significant increasing trend with less than five entrants to the last several sessions. The entrée to the FCPS training programme is sparse as well. At the time of writing, there are 14 FCPS nuclear medicine trainees, with five in their final year of training. Of the 13 centers accredited for FCPS training, 7 have no trainees at all with 3 centers with just one trainee each.

In comparison to other niche specialties, nuclear medicine is apparently failing to attract newly qualified doctors. In order to explore and understand the cause of this apparent unattractiveness of NM physicians, a survey

(published in this issue) of professional satisfaction among the nuclear medicine physicians was recently conducted. Those who had 1-10 years of post-MSc experience were targeted because this group has the highest attrition rate. This also included nine physicians who had changed from nuclear medicine to other specialties. Of the 27 physicians spoken with, a full 56% (n=15) said that given the chance, they would not choose nuclear medicine as their future profession again. The global happiness scores were depressing too, with only about a third (32.72%) of all participants, reporting to be happy with their training and future prospects. Those who had left nuclear medicine, quoted insecurity about the future as the commonest reason for changing the specialty, followed by not enough opportunities for financial reward and a feeling of irrelevance in patient management in mainstream medicine. It is very obvious that those involved with NM training and career planning need to take notice and make policy changes that can reverse this frustration.

A number of suggestions have been made to reverse these trends, these suggestions fall into two major categories including: 1) strengthening the training program and 2) making the specialty financially attractive.

The training programme should be strengthened by making it more broad-based, with more emphasis on clinical subjects, more complementary modalities, and more therapy. At the very least, this should be a four year major diploma instead of the current two year programme.

Nuclear Medicine has always been uniquely multidisciplinary with a more than working knowledge of medicine, physics, physiology and pathophysiology, essential to good practice standards. With the advent of hybrid imaging, radiology knowledge has become becoming essential too. In fact, the Canadian Association of Nuclear Medicine in its 2010 position paper ([http://canm.info-tech.ca/admin/Documents/2010Policy\\_CT\\_Training.pdf](http://canm.info-tech.ca/admin/Documents/2010Policy_CT_Training.pdf)) recommends 200 hours of training in CT, involving physics, acquisition, morphology and artifacts, use of contrast material and

interpretation of 500 cases under supervision within 24 months; to put this into perspective, a commercial airline pilot needs, under certain conditions only 180 hours of flying experience. In the UK, from 2012, an MRCP is an entry-level requirement in a NM training programme, and there is talk of extending the training to six years. Iran has recently strengthened its NM training from two to four years, adding a full year of radiology in their programme. Compare this with our own training length, the curriculum and entry-level competence requirements and we can get an idea of how important it is to rethink our training programmes. While we do not see making an FCPS radiology and FCPS medicine an entry-level requirement in our own situation, an extension of the current training to include other imaging techniques and greater exposure to therapeutic aspects of nuclear medicine is certainly needed. The course will need to train physicians enabling them to have adequate radiological skills, and a good understanding of therapy related internal medicine.

The second set of measures are aimed at providing adequate financial incentives and opportunities to make money. There are several reasons why nuclear medicine physicians cannot go into private practice. The most important are restrictions imposed by employers as well as the national radiation licensing authority. Both need to change to a more investment friendly, private enterprise friendly policy. Regardless of the desirability of doctors living frugal lives and devoting all of their energies to patient welfare with little thought to their own, this is not how most doctors feel. They see other similarly qualified colleagues live in modest luxury and want the same for themselves and their families. This desire to achieve material comfort can be the topic of debate but cannot be wished away. This translates usually in order to supplementing their income with private practice. Something that might somehow be regulated, but should definitely not be discouraged.

We reiterate our fears, of not having enough nuclear medicine physicians some years down the road. A deep understanding of what ails

the young Nuclear Medicine Physicians is necessary. This should be translated into policy changes that impact upon the Nuclear Medicine training programme, career paths and departmental rethink into encouraging private enterprise.

We seek to initiate a discussion on ways to improve the nuclear medicine training and service environment, and would welcome suggestions on how to attract and retain talent within the specialty.

*Let us prepare lest the future arrives before  
we are ready for it!*