

Chest radiographic interpretation – an essential competency for Africa

A chest radiograph is one of the most common investigations in medicine. In the evaluation of patients, a radiograph is often the first test to confirm, or seek additional, clues after a history and clinical examination. Thereafter however, the experience and skill of the doctor in interpretation is paramount to establishing a definitive diagnosis, or a focused investigation, and path to resolution. All too often, in my personal experience, it is at this stage that problems are encountered. There is a failure to make an accurate diagnosis owing to misinterpretation. This can lead to unnecessary and expensive further investigations, treatment, and potentially, dire consequences. These could be in the short- or long-term – where patients are misdiagnosed for months to years – with attendant morbidity and mortality. Competency in radiographic interpretation is especially important in Africa, where the burden and profile of respiratory disease is particularly unique.^[1,2]

There are many reasons for a lack of proficiency in radiographic interpretation. Firstly, to the best of my knowledge, there are no National Standards for competency for doctors who are not radiologists. Secondly, in most, if not all, public facilities in South Africa (SA), a radiologist does not report on basic radiological tests. Thirdly, there are highly variable radiological university programmes in the country, often with doctors having to self-learn in their undergraduate training or on-the-job thereafter. Again, in my personal experience, having engaged with recent graduates from Health Sciences faculties throughout SA, and a host of other doctors throughout the country, some with decades of experience, areas of deficiency are noted. Some common examples encountered are:

- inability to recognise a pneumothorax,
- inability to recognise active tuberculosis (TB) or the inability to appreciate old TB,
- misdiagnosing TB for lung cancer and *vice versa*,
- not recognising lobar collapse (which can be extremely subtle), and
- inability to recognise bronchiectasis.

In this issue of the *AJTCCM*, Dreyer and colleagues^[3] studied chest radiology competence at a SA medical school. They analysed the skills of medical staff interpretation of radiographs, by both years of experience and seniority. In both groups, there were no scores >50%. The diagnostic accuracy per years of experience was: 27% (0 – 5 years), 43% (6 - 10 years) and 48% (>10 years). For the different staff designations, the accuracy of consultants was 50%, registrars 41%, medical officers 36% and interns 20%. The authors further point out that competency is also required in emergency situations (often amongst junior doctors) and that the lack of skills may well endanger patients' lives with possible attendant medico-legal repercussions. They further note that, for physicians, the College of Medicine, to date, has no precise directive for radiology expertise.^[4]

In terms of competency, this finding is not new. It has been reported in many countries for many years.^[5-7]

What are the possible solutions?

The persistence of the problem over decades points to inadequacies in the number of radiologists available to report on radiographs; which is extremely unlikely to be improved. Machine learning systems are yet to be realised in low-resource settings. The responsibility therefore defaults to the trainers - preferably lead by pulmonologists, who could co-opt radiologists - to coordinate the up-skilling of all staff. This should be embedded in medical curricula and expanded to district hospitals and other clinics. The opportunity should also be sought at relevant annual conferences and update meetings to do the same. It is surprising how particular problems are encountered regularly in medicine, yet no systematic process is put in place to rectify the situation; as regards chest radiology interpretation. It is time for the pulmonology committee to change the narrative. It is also hoped that the new initiative of the CMSA on Workplace Based Assessment will be fully embraced and incorporate enhanced radiology expertise. Together with the academic representatives of the various medical schools on the SA Thoracic Society, an attempt could be made to develop the first National Standard for Chest Radiology competency amongst non-radiologists.

All important issues in life need a champion or champions to initiate and sustain awareness and spearhead campaigns to change the situation – this is long overdue for chest radiology competence.

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