



Letter to Editor

Distribution of Diagnostic Radiological Imaging Facilities in Public Hospitals in the Central Province of Sri Lanka

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Radiology is one of the leading medical disciplines that aid imaging to diagnose and treat particular diseases using ionizing radiation. At present, numerous imaging modalities, such as plain radiography (PR), fluoroscopy (FC), computed tomography (CT), mammography (MG), dental radiography (DL), and magnetic resonance imaging (MRI), are available to fulfill this task (1). Three different PR examinations can be identified based on the type of image receptor, referred to as conventional radiography, computed radiography (CR), and digital radiography (DR) (2–5). Over the last few decades, medical imaging has advanced rapidly in countries worldwide, including Sri Lanka. This improvement is a good indicator of quality public health service delivery. However, the uneven distribution of health facilities across the country is a predominant factor that reduces the quality of health service delivery (6). Therefore, this research aims to assess diagnostic radiological imaging facilities in public hospitals in the Central Province of Sri Lanka to evaluate the strengths and weaknesses of the general diagnostic radiological imaging facilities. This study was approved by the Ethics Review Committee (ERC) of the FAHS, University of Peradeniya (AHS/ERC/2021/081). Permission was obtained from the Provincial Director of Health Services in Central Province (PDHS) and Directors of public hospitals to collect the data. Hence, written consent was obtained from the chief/in-charge radiographers of the hospitals. A descriptive cross-sectional study was conducted from 12th October 2021 to 26th November 2021. A self-administrated questionnaire was distributed among the chief/in-charge radiographers of thirteen public hospitals that provided diagnostic imaging facilities.

All thirteen questionnaires were received by giving a 100% response rate. (In the Central province, there were 22 plain radiography units, five computed tomography units, three fluoroscopy units, six C-arm modalities, nine mobile radiography modalities, two mammography units, one magnetic resonance imaging unit, and seven dental radiography units (Table 1). Two image processing techniques, analog and digital, were utilized to obtain plain radiography images in the Central province. Although the country has technically developed a lot, two hospitals still use the manual image processing technique. In addition, National Hospital, Kandy has completely converted all plain radiography services to the digital image processing technique. The distribution of plain radiography image processing methods is displayed in Table 2. There were 87 radiographers (male = 56, female = 31), including 70 in the Kandy, 9 in the Matale, and 8 in the Nuwara-Eliya districts.

The utilization of radiological imaging modalities in medicine has increased with the advantages of the technology. Assessment of the distribution of such facilities is critical to identify the lapses of a healthcare facility in a particular area (3,7). Plain radiography is the initially performed imaging modality

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to identify various pathological diseases, fractures and dislocations in trauma (8). The study found that it is available in all the hospitals included in this study. It was found that five CT modalities were distributed among the three districts, three in Kandy, one in Matale, and another one in Nuwara Eliya. The incidence of breast cancer has been increasing over the past years, and approximately 3,000 new cases are diagnosed in Sri Lanka each year (9). However, the MG imaging facilities are available only in Kandy districts. The women in the rest of the districts in the Central province should come to the Teaching hospital, Peradeniya, or National Hospital, Kandy to obtain this service. MRI scan is also one of the essential and beneficial imaging modalities in the health sector and assists in identifying different types of diseases (10,11). However, National Hospital, Kandy has the only MRI machine available in the Central province. According to the result, it was revealed that National Hospital, Kandy performs almost all imaging modalities.

Table 1. Imaging modalities in the Central province

Imaging modalities in the Central province							
PR	CT	FC	C-arm	MR ¹	MG	DL	MRI
22	5	3	6	9	2	7	1

¹MR: Mobile Radiography

Since radiographers play one of the leading roles in the Radiology department, the distribution of radiographers is an important fact that should be discussed (12,13). Furthermore, it is an essential fact that human resources in the radiology department should be impartially distributed to get the benefits of their service and make the health service efficient.

Table 2. Types of acquisition methods utilized by hospitals

Types of acquisition methods utilized by hospitals					
Manual	Automat		CR	DR	
2	6		8	5	
Manual+Automat	Manual+CR	Manual+DR	Automat+CR	Automat+DR	CR+DR
0	1	0	2	2	1
Manual+Automat+CR	Manual+Automat+DR	Manual+CR+DR		Automat+CR+DR	
0	0	0		1	

¹CR: Computed Radiography, ²DR: Digital Radiography

The basic diagnostic radiological imaging facilities are available across the province in a balanced manner. However, mammography and magnetic resonance imaging facilities are only confined to the Kandy district, which is a significant indicator of the uneven distribution of medical imaging facilities. In addition, some hospitals continue to use manual and automatic image-processing methods in their daily clinical practice. Therefore, the advancement of imaging processing methods in diagnostic imaging facilities could be beneficial in improving the effectiveness of delivering health services.

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