Evaluation of quality radiologic devices using RTI evaluation method and comparing the results with international standards

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Abstract

The diagnostic and radiological service, which is rated as a primary service, for the examination of internal diseases and the consequences of Covid-19, played a crucial role in examinations of patients with corona-virus. In this study, we aim to evaluate the important role that diagnostic imaging has played in dealing with the pandemic situation where, by means of X-ray imaging technologies, it has been possible to identify the severity of the disease in patients affected by Covid 19. With support of NASRI, under project "*Development of simulation and forecasting models and integration with the TCIA database of medical images*", we analysed the diagnostic system in several diagnostics centres in Albania. We used Piranha Multi (RTI Group) to verify the accuracy of the voltage (kV), the stability of the repetition of the values of the voltage dependence of the power voltage change, the overall filtering and the exposure time. We have presented a general picture of the situation of diagnostic equipment in Albania compared to OECD and COCIR indicators. The study shows that diagnostic imaging in Albania uses a large variety of equipment, but compared to the OECD standard, the ratio of units per 1 million inhabitants in Albania is below the average number. We found a low level of compliance with the COCIR standards ("Golden Rules") where more than 65% of the basic equipment installed is between six and ten years old, 20% is less than five years old and 15% of the installed equipment is more than ten years old.

References

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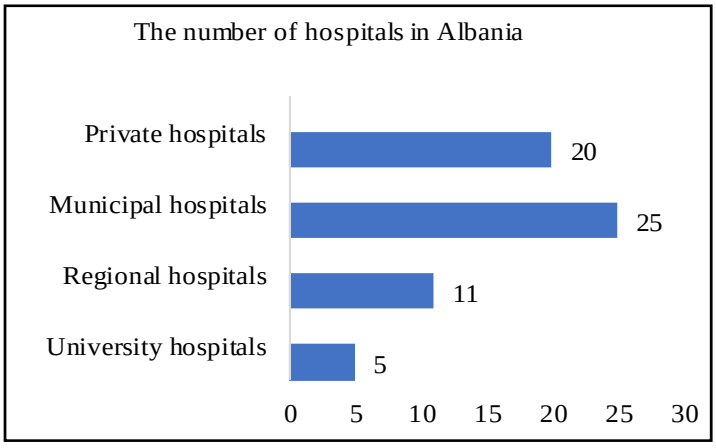
[3] Hyka, N. et al. “How chest CT radiation dose of patients with confirmed COVID-19 will impact the cancer risk in the future. Physica Medica vol. 92 (2021): S230–S231. DOI:10.1016/S1120-1797(22)00497-5

Figures



Figures: In the left: Map of regional hospitals in Albania, Health system in Albania, Ministry of Health
In the right: The number of hospitals according to the number in Albania