

Cardiology and Sustainable Development

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“Be the change you wish to see in the world”

Mahatma Gandhi

Brazil is one of the major economies of the planet, with a territory of continental extension (fifth greatest) and a population over 200 million inhabitants. Nevertheless, Brazil has a huge social inequality, evidenced by its health indicators. Ribeiro et al. have reported that cardiovascular diseases account for 31% of all deaths, most of which resulting from ischemic heart disease and cerebrovascular disease.¹

The United Nations (UN) implemented the “2030 Agenda for Sustainable Development” that includes the 17 Sustainable Development Goals (SDG), aimed at eradicating poverty as well as fighting inequalities and climate change. One of the most challenging objectives of that agenda is to ensure healthy lives and promote well-being for all at all ages. A reduction in the relative risk of early death secondary to cardiovascular diseases is top priority for the year 2030.² By achieving the SDG, we will be able to prevent 10 million of the 20 million deaths of individuals aged 0 to 49 years expected by 2030. Brazil plays an important role among the nations that successfully fight cardiovascular death, with a 30% to 40% reduction in 20 years, which is comparable to that observed in the United States of America.³

There are several actions to prevent cardiovascular mortality, such as avoiding the development of cardiovascular diseases and their complications by adopting a healthy diet, reducing smoking, practicing

regular physical activity, controlling blood pressure, blood lipids and blood sugar, fighting obesity and reducing environmental pollution. Magalhães has recently emphasized the importance of the initiative of the national societies of cardiology to attain the SDG, showing the need for adopting more aggressive actions to reduce serum lipid levels in patients at cardiovascular risk,⁴ which has been consolidated in the last version of the Brazilian Society of Cardiology Guidelines for Dyslipidemia and Atherosclerosis Prevention.⁵

Another important measure to prevent mortality is the correct detection of cardiovascular diseases or their management, if already present. The clinical assessment accuracy added to the arsenal of complementary tests available is essential to detect several conditions that lead to premature deaths. Myocardial perfusion scintigraphy is the most often used non-invasive imaging technique to assess coronary artery disease, providing information that allows the diagnosis and risk stratification of cardiovascular adverse events. Most importantly, data derived from that technique contribute to the therapeutic decision making, allowing high-risk patients to undergo revascularization and avoiding wastage with invasive procedures in patients at low risk for adverse events. The proper use of myocardial perfusion scintigraphy contributes to improve cardiovascular disease management, which requires coordinated efforts. The review article by Dondi et al.,⁶ published in this issue of the *International Journal of Cardiovascular Sciences*, shows how the International Atomic Energy Agency (IAEA), which is part of the family of the UN agencies, is contributing to improve the peaceful use of nuclear energy, especially in the health area. The IAEA collaborates with the SDG in the medical area, especially in nuclear medicine, through a large repertoire of actions, such as trainings and presentational courses, online learning tools, coordinated nuclear research, apps for

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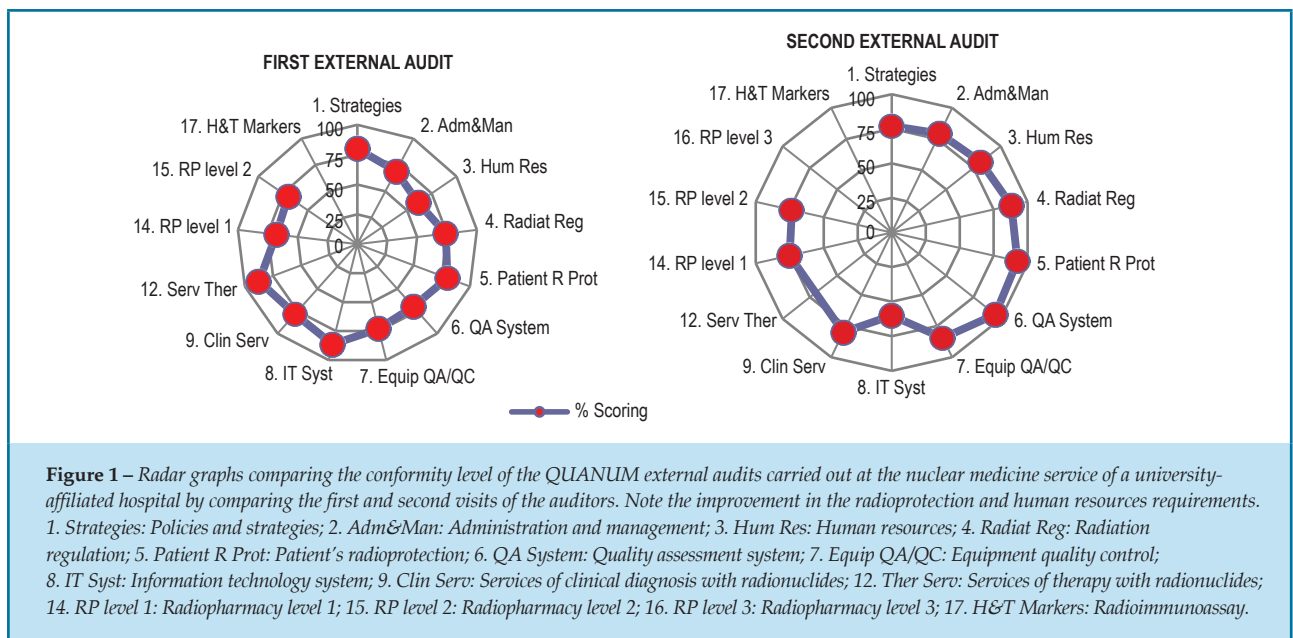
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the use of adequacy criteria to request complementary tests, and quality improvement tools, such as the Quality Management Audits in Nuclear Medicine (QUANUM).⁷ The QUANUM are part of a process of internal and external assessment of nuclear medicine practices, deemed essential to disseminate the culture of quality and safety, as well as to implement quality tools in nuclear medicine services, which perform several diagnostic tests in patients with cardiovascular diseases, being able to contribute to reduce mortality.

An example of the impact of QUANUM on a nuclear medicine service is shown in Figure 1, which illustrates the results of the conformity levels achieved at the Antônio Pedro Hospital of the Fluminense Federal University. After the initial audit visit in 2013, several recommendations were made to improve the procedures and facility at the institution, which could be assessed in the 2017 audit follow-up. Of the recommendations met, we highlight the improvement in the radioprotection and internal management protocols of the sector. Of the expected results from that improvement, we observed an increase in the number of tests performed and a reduction in the time to deliver the reports to the patients.

A significant factor in health sustainability is the wastage of resources. Effort has been made in several areas, such as using protocols to properly indicate tests. In nuclear medicine, an initiative by Santos et al.,⁸ from the Brazilian National Institute of Cardiology, to assess the economic impact of the inappropriate request of myocardial scintigraphy has shown the importance of undertaking effort in the area. Analyzing the requests of myocardial scintigraphy at that institute, those authors found 12% of inappropriate requests, corresponding to 18.6% of the nuclear medicine sector budget. Avoiding inappropriate tests reduces wastage of resources, prevents unnecessary radiation exposure and increases the availability of the tests for patients with proper indications, strongly contributing to attaining the IAEA objectives to reach the SDG.

Finally, the study by Dondi et al.⁶ shows the path several agencies and specialty societies have coordinately taken to provide the population with more equality in health. Disseminating the precepts of the SDG and stimulating the leaders in cardiology to take on their role in conducting those initiatives are paramount to achieve the desired sustainable development.



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