Diagnosing Radiology Services in the midst of a Pandemic

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Guest editors

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With regard to the contingency that is being experienced worldwide and the recommendations issued by the different scientific societies and groups of world experts, it is important to get closer to the local reality (1).

The great effort made by the Asociación Colombiana de Radiología (ACR) in gathering a group of national experts in thoracic imaging is highlighted, which allowed the issuance of the document "ACR Recommendations for the transport, performance of studies, equipment isolation, personnel safety measures and interpretation of diagnostic images during the pandemic in accordance with the consensus of the Asociación Colombiana de Infectología for the care, diagnosis and management of SARS-CoV-2/COVID-19 infection" (2, 3). This allowed the country's radiology services to be quickly informed about how to prepare for care during a pandemic.

To assess the local reality and the context in which we find ourselves, it is considered important to know the population data and the availability of radiology services. According to the 2018 Census, conducted by the Departamento Administrativo Nacional de Estadística (DANE), Colombia had at that time a population of 48,258,494 people, of which 15.8% resided in rural areas and 7.1% in population centers, the rest in urban areas. According to the estimates of the same entity, by February 2020, the threshold of 50,000,000 Colombians would be crossed (4).

Additionally, the availability of diagnostic aid services that can guide health personnel in decision making should be considered. By the cut-off date of February 29, 2020, with the last update on March 18, 2020, the Radiology and Diagnostic Imaging subgroup (5) has 1,965 registered health care providers, without discriminating what diagnostic aids are available in each of the health care provider institutions (Instituciones Prestadoras de Salud - IPS). In particular, the providers that provide the computerized axial tomography (CT) service are not described and, therefore, they cannot be mapped in the geographic viewer of the Integrated Social Protection Information System (Sistema Integrado de Información de la Protección Social - SISPRO) (6).

To achieve an approximation to the knowledge of the providers of diagnostic aids with this type of service, a consultation was made in the CUBO (SISPRO tool that allows the generation of statistics) and in the individual records of health services provision (Registros Individuales de Prestación de Servicios de salud - RIPS) of the procedures related to unique codification of procedures (Codificación Única de Procedimientos - CUPS) that included tomographies (excluding odontological and ophthalmological studies). This resulted in providers reporting such care during 2019. This consultation makes evident how the most remote regions of the country have a shortage of resources; thus, in departments such as Guainía, no tomography was reported during 2019, since it only has conventional X-rays in its capital, Puerto Inírida. In Vichada and Vaupés there was only one provider with the availability of tomographies. In the San Andrés and Providencia Archipelago only two institutions were reported to provide such services; in Amazonas and Guaviare, three, and in Chocó, six (Table 1).

Table 1. Number of tomography services during 2019 (Based on CUBO/SISPRO)

Zone	Departament	Number	Subtotal
Amazonía	Amazonas	3	28
	Vaupés	1	
	Guainía	0	
	Guaviare	3	
	Caquetá	8	
	Putumayo	13	
Orinoquía	Meta	33	67
	Vichada	1	
	Arauca	10	
	Casanare	23	
Pacífico	Chocó	6	215
	Valle del cauca	140	
	Cauca	27	
	Nariño	42	

Source: Own elaboration.

These results correlate with the estimate of sites offering CAT service in Colombia by department 2013-2014, figure 11 of the document "Atlas of geographical variations in health in Colombia" (7).

It is striking that there is no census of human talent in each of the country's regions, so the number of radiologists available in each department is not known with certainty, but it is estimated that, as in the number of services available, there is inequality between regions.

In situations such as this, the inequalities that exist in the different regions of the country are visualized in many aspects, including access to health services, and the Colombian health system is put in check. It is evident that there is a deficit of human talent, especially in some remote areas of the country, and that the installed capacity of both technology and beds, especially those in intensive care units, is insufficient to serve our population. Thus, in departmental capital cities, such as Leticia, where numerous positive cases of COVID-19 have been reported, there are no intensive care units available to care for patients complicated by this pandemic or by other pathologies.

The challenge for the Government and for health entities increases if we take into account the demographic and population megatrends: the demand for health services has been influenced by several factors: migrations, the growth of cities and changes in life expectancy, among others. Some studies indicate that in the next few decades Latin America will experience a reduction in its population under 15 years of age and an increase in the population over 64 years of age (8), which will change the health risk profiles and, therefore, the dynamics of the health programs defined by the government and the Ministry of Health.

On the other hand, intermediate cities will tend to grow in much higher percentages than the main cities, due, among other causes, to the migration of foreign citizens. These tendencies demand planning and organizing health systems taking into account these changes in the population.

It should be noted that, according to figures published by Migration Colombia as of February 29, 2020, more than 1,825,000 Venezuelans would be living in Colombia (9), which generates an increase in the demand for health services.

These population changes demand, in order to counteract the impact on the health system, an adequate administration of the available resources, almost always scarce, in the narrow state health budgets, for the development of programs that conveniently attend to the needs of the entire population. In this way, as far as possible and as far as health is concerned, it should be ensured that no citizen is a victim of inequality and that they can make use of health services safely, efficiently and effectively, as provided for in statutory law 1751 of 2015.

The current model of the General Social Security System (Sistema General de Seguridad Social) in Colombia is based on the balance that must exist in the volumes of care provided by institutions with different levels of care complexity. The aim is that most events are attended by low complexity entities and that a minimum percentage of these are referred to higher complexity levels; such balance has not been achieved, since most health care is provided by medium and high complexity institutions. This is due to the lack of resolution capacity, poorly qualified personnel and deficient infrastructure in low-complexity health care institutions. A new approach to the model is needed, one that energizes and strengthens the capacity of low-complexity institutions and frees institutions at other levels of health care from the collapse in which they find themselves (10).

For all the above reasons, it is necessary to know in detail the infrastructure, technical and human resources in health in the different regions of the country, to make the necessary adjustments according to the population, supply and demand, and not to rely only on estimates or approximations to continue working for the timely diagnosis of the different pathologies of the inhabitants of our country.

As far as the area of radiology and diagnostic images in health care during this contingency is concerned, the door is even more open to the use of resources such as telemedicine and telediagnosis to attend the most vulnerable population and guide health personnel in remote places of our geography. However, this requires attracting resources and investing in technology installed in these remote regions.

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