



Kidney disease in Venezuela: the impact of a lingering humanitarian crisis

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Venezuela is going through a humanitarian crisis that has severely impacted all programmes of kidney replacement therapy — dialysis coverage has decreased markedly, particularly in small towns and rural areas, and almost all peritoneal dialysis and deceased donor organ procurement for kidney transplantation have been discontinued.

“Inadequacies in dialysis provision are aggravated by ... inequality in dialysis coverage around the country”

In Venezuela, the early 2000s were characterized by governmental interventions aimed at gaining economic control of the country, including the nationalization of industries and private enterprises, improving population access to free health care, and providing subsidies to support the most vulnerable members of the population. However, inefficient governance, uncontrolled inflation and a growing unemployment rate have severely impacted the capacity of the general population to meet basic needs. Thus, the [International Monetary Fund](#) projected that by 2020, Venezuela would have an unemployment rate of 54% and that the contraction in gross domestic product (GDP) would be -25%, with an inflation of 65,000%. These economic adversities and the continued political unrest have led to a severe crisis across all strata of society. Over 5.1 million people have migrated to other countries in the past 4 years¹, including 30,000 physicians², of which ~150 are nephrologists. Consequently, numerous and unexpected health system limitations have arisen in Venezuela and in the countries that have humanely hosted Venezuelan migrants.

Over the past 10 years, the primary health system in Venezuela has been disorganized and inadequate, especially for people affected by socioeconomic inequities and poverty. For example, maternal and infant mortality, and rates of preventable infectious diseases have deteriorated. Alarmingly, between 2015 and 2016, infant deaths increased by 30.1% (63.3% higher than in 2012) and, from 2012 to 2016, maternal deaths increased by more than 50%³. Furthermore, outbreaks of vaccine-preventable diseases such as measles, diphtheria, mumps and pertussis occurred throughout the country, likely as a direct consequence of failings in sanitation and vaccination. Importantly, these outbreaks are expected to have a negative impact in the incidence of kidney disease as many acute infections are associated with the development of acute kidney injury. The secondary and tertiary health services have also been compromised, as evidenced by the marked decrease in the number of hospital beds, the shortage in operational

clinical laboratories and radiology services, and the lack of reliable water and electricity supplies⁴.

This crisis in the Venezuelan health system has severely affected kidney replacement therapy (KRT) programmes. Approximately 3,000,000 Venezuelans (10% of the population) are estimated to have chronic kidney disease and approximately 21,000 patients require KRT. From the 1980s to 2010, evolving policies for kidney failure led to a sustained increase in KRT coverage to a peak of 15,000 patients (501 per million population (pmp))⁵, which was relatively close to the coverage goal of at least 700 pmp suggested by the Latin American Society of Nephrology (SLANH) and the Pan American Health Organization (PAHO). Unfortunately, these gains are being lost. The peritoneal dialysis programme was discontinued in 2017, which generated an unexpected demand for haemodialysis. By 2020, peritoneal dialysis had decreased by 85.6% compared with 2013, and the number of patients on haemodialysis had declined by 40% (303 pmp) over the same time period (C. Márquez, unpublished data). Unofficially, 574 (23%) of a total of 2,476 haemodialysis machines were inoperative by 2019, resulting in a loss of 3,444 haemodialysis allocations (at three sessions per machine, three times per week). Dialysis is free of cost to the patient and an official explanation for the decline in patients with kidney failure under KRT has not been provided. Moreover, kidney disease statistics, including patient mortality and KRT usage in the country, are currently not available. Discrepancies between the real cost of dialysis treatment and the reimbursement provided by Social Security to dialysis centres have probably contributed to the progressive reduction in haemodialysis allocations. Apart from haemodialysis supplies, which are provided to the patient free of charge, the current reimbursement per treatment session is equivalent to only US \$1.00, which is insufficient to cover the costs of keeping a dialysis unit operational.

These inadequacies in dialysis provision are aggravated by the substantial inequality in dialysis coverage around the country. Coverage in large cities averages 495 pmp

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<https://doi.org/10.1038/s41581-021-00403-9>

“ interruptions in water and electricity supply ... force haemodialysis sessions to be shortened or cancelled ”

but is only 139 pmp or absent in small towns and rural areas⁶. Moreover, in many haemodialysis units, the provision is often inadequate owing to interruptions in water and electricity supply, which can last for hours or days, and force haemodialysis sessions to be shortened or cancelled. Nationwide, shortages in gasoline have further limited the access of patients to dialysis centres, which might also be contributing to the observed reduction in the number of patients on haemodialysis.

Kidney transplantation services in Venezuela expanded progressively between 1997 and 2014, reaching an average of 220 transplants per year in 2014 (56% from deceased donors). However, between 2015 and 2018, the number of transplants diminished to 102 per year^{5,6}. In 2017, the Ministry of Health national programme for deceased donor organ procurement was discontinued, mainly owing to an insufficient supply of immunosuppressive drugs by Social Security, deficits in infrastructure and human resources, and reduced operational capacity of the public health system. At present, only a few living-related donor transplants are performed per year (E. Alonzo, unpublished data). The increasing number of nephrologist and specialist nurses that are leaving the country owing to the social, economic and political crises has further compromised transplantation provision. In 2017 and 2018, the Venezuelan Society of Nephrology (SVN), SLANH and the International Society of Nephrology expressed open concern for the growing crisis affecting patients with kidney disease and urged the Venezuelan government to promptly re-establish all kidney health-care programmes. The response to all these requests has been, at most, insufficient and unsystematic.

The coronavirus disease 2019 (COVID-19) pandemic has created new challenges for the country, as demands on the health system continue to increase. Official data show that COVID-19 cases in Venezuela increased progressively⁷ (from 176 in June 2020 to 1,213 in September, trending down to 354 in November 2020 and rising again to 604 in January 2021), with a total of 126,927 cases (419 per 100,000 inhabitants) and 1,189 deaths (39.3 per 1,000,000 inhabitants) by the end of January 2021. Of note, these numbers are thought to represent a gross underestimation owing to the low testing rate in the country. According to the non-governmental organization Médicos Unidos de Venezuela, by November 2020, 254 health personnel, of which 190 were physicians, had died from COVID-19 related complications⁸. Limited availability of personal protection equipment (PPE) and safety issues within health-care centres have likely contributed to these deaths. Preliminary results of a national survey conducted by the SVN in August 2020, which comprised 56 outpatient haemodialysis units (4,673 patients), showed that only 17.5% of the units had an isolation area available for patients with COVID-19 (C. Márquez, unpublished data). Symptoms associated with COVID-19 were observed in 1.7% of patients, 66.6% of whom were hospitalized with 10.7% mortality. Within these dialysis units, the implementation of preventive measures to

reduce the spread of infection, such as symptom tracking and the use of PPE, were relatively scarce. Prevention and risk reduction plans must therefore be urgently devised and implemented in all dialysis centres and nephrology services to mitigate the impact of the COVID-19 pandemic among patients and staff.

In 2016, the Venezuelan National Assembly declared a humanitarian crisis and requested international aid — by June 2020 the monthly minimum salary was US \$1.95 and an average family would need 103 minimum salaries to cover monthly food expenses. In 2019, the United Nations requested, through the Office for the Coordination of Humanitarian Affairs (OCHA), that the international community raise US \$223 million to meet Venezuela's urgent needs for health, water, sanitation and hygiene, food security, nutrition and housing for 7 million people⁹.

The ongoing political and economic crises in Venezuela have had severe consequences in health-care provision and have created a humanitarian emergency, which is further magnified by the economic embargo, but the world seems to be gradually ignoring this baneful decline. We hope that the international community will not disremember, and will continue to collaborate with the Venezuelan community to guarantee that global strategies aimed at reducing inequities include actions to support these vulnerable populations, so that no one is left behind.

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Acknowledgements

The authors would like to recognize the Venezuelan Society of Nephrology, especially T. Barake for providing valuable information about the national survey of COVID-19 in haemodialysis centres in Venezuela, and E. Alonzo from the Organización Nacional de Trasplante de Venezuela (ONTV) for providing information about the current status of kidney transplantation in Venezuela.

Competing interests

The authors declare no competing interests.

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