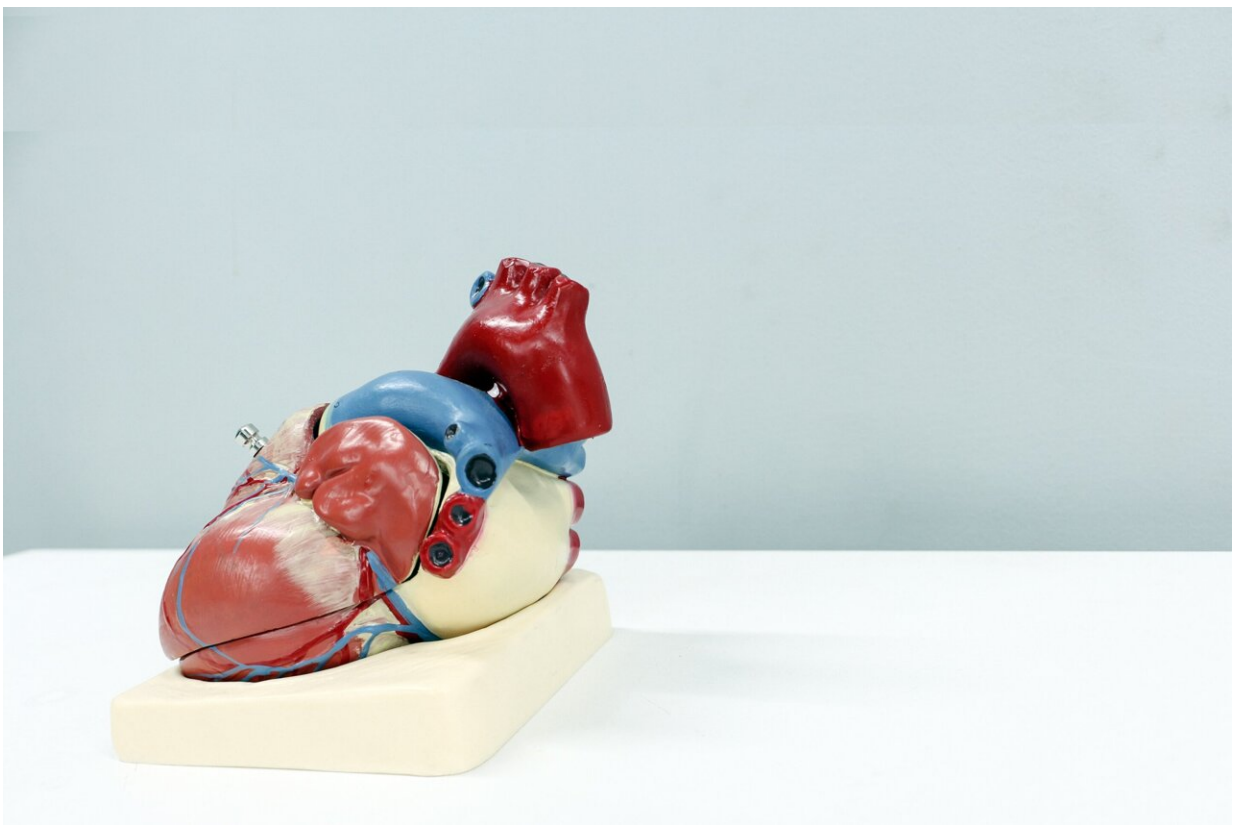


# Human organs for transplant: Five steps Africa must take to improve the supply chain

June 23 2023, by Temidayo Akenroye, Adegboyega Oyedijo, George Zsidisin, Jamal El Baz and Marcia Mkansi

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Medical science has made tremendous advancements over the past 70 years. One of these is the transplant of human organs from one person to

another. The first transplant—a kidney—[was in the US](#) in 1954.

Since then, organ transplants have become an [option](#) in a variety of medical cases. Most donated organs come from people who have already died, but people can still give some organs and tissue while they are alive.

The global demand for [human organs](#) for [transplant](#) has [grown by 7.2%](#) since 2015. That has surpassed supply. The average wait time for [organ transplants](#) in developed countries like the US is between two and six years. This results in the loss of [over 10,000 lives](#) each year. And in India, every year [500,000 people](#) die because there are not enough organs available.

In sub-Saharan African countries, there has been a [steady rise](#) in the demand for [organ transplantation](#), with no corresponding increase in the number of [organ donors](#).

In South Africa, for example, [only 18%](#) of families gave permission for organ donation after a death (at a hospital) in 2017. This means 82% of families chose not to support organ donation.

Though the [first heart transplant in history](#) was performed in an African country, this region has the fewest transplants of any continent.

The median number of kidney transplant facilities in Africa is [0.15 per million population](#) (against 0.42 globally), and transplant-related services are often scarce. Only South Africa, Nigeria, Kenya, Ghana, Tanzania, Sudan, Seychelles, Namibia, Mauritius, Côte d'Ivoire and Ethiopia perform [transplants](#).

There are a number of reasons for the shortage of donated organs. Religious or cultural beliefs and a lack of [regulatory or policy](#)

[framework](#) are among them. There is also the challenge of a [poor incentives system](#), and inadequate [cold-chain facilities](#).

All these factors have a significant impact on the organ supply chain. They have in turn triggered other serious social problems, such as a flourishing black market for organ sourcing, organ trafficking, and [monetising organ donations](#). For instance, organs, particularly kidneys, are [often sold](#) through the black market by poor people in developing countries.

Based on [our research](#), we provide insights into the challenges confronting Africa's organ transplant supply chain systems.

## **Links in the supply chain**

The organ supply chain is not a simple, linear process. Similar to the blood supply chain, it involves collecting, testing, distributing, and transfusing donated organs to patients at geographically spread transplant centers.

Having to use a cold chain system for perishable products like organs only makes things worse, especially in sub-Saharan Africa with its inadequate logistical and infrastructure capabilities.

To strengthen the organ supply chains in sub-Saharan Africa, there is a need for [collaborative efforts](#) from multiple stakeholders including clinicians, [public health experts](#), supply chain experts, governments, religious bodies, non governmental organizations, academics and the public.

Together, these stakeholders should review and improve current practices of donating and transplanting organs.

As [supply chain](#) experts, we have seen that what works in optimizing supply chains are strong governance frameworks, partnerships, systems, people, and data. We suggest five actions based on [our research](#):

- 1. Develop a robust regulatory model:** Organ donation and transplantation is a well-regulated field. But only a [few countries](#) in sub-Saharan Africa have a [legal framework](#) in place to monitor and control the sourcing and transplantation of human organs, cells and tissues. The framework should include an organ donation register, clear guidelines, best practices and protocols. There should be clear incentives or compensation mechanisms for living organ donors, consistent with the society's moral ideals.
- 2. Create local working groups:** Last-mile access to healthcare in Africa continues to be one of the most [difficult obstacles](#) that governments, donors, and businesses must overcome. Therefore, a decentralized approach is needed to manage the database of patients waiting for a transplant in hospitals at various locations, and for making organ matches swiftly.
- 3. Improve medical cold chain systems:** The safety and quality of human organs will be seriously compromised if temperature monitoring and maintenance logistics systems are insufficient to get them to hospitals in time. The African continent has [suboptimal cold chain capacity](#) to transport blood and components to hospital.

A cold chain process is required for most food and pharmaceuticals before they can be delivered to the customers. This is an area where sub-Saharan Africa [falls short](#). On average, [50%](#) of the food produced in African countries is wasted due to inadequate temperature-controlled storage facilities. This is also [hindering](#) vaccination programs around the

continent.

1. **Create awareness:** The socio-demographic characteristics of populations should be taken into consideration when designing programs to raise awareness about organ donation. Campaigns should be tailored for age, profession, education level, religious affiliation, and cultural sensitivity.
2. **Establish knowledge exchange hubs:** Governments should establish centers of excellence on [organ donation](#), logistics and transport, enabling collaboration among government, industry, civil society and academics. Such a forum could evaluate similarities and differences between country practices.

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