Imagining a world without avoidable deaths due to blood shortage

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Have you ever imagined your body without blood? Possibly not, because of the number of functions that blood plays which is central to your survival. Globally, millions of lives are lost each year due to chronic blood shortages. The mounting surgical and trauma burden coupled with high prevalence of blood disorders and communicable diseases, has resulted in an increased need and prioritization for effective and well-functioning blood systems across the world.

Given the undeniable importance of blood in our lives, access to adequate blood and safe transfusion of blood should be an integral part of every country's national health policy, regulatory framework, and health infrastructure.

According to a 2015 World Health Organization (WHO) report, 71% of reporting countries, or 123 out of 173, had a national blood policy. Overall, 60% of reporting countries, or 104 out of 173, have specific legislation covering the safety and quality of blood transfusion. In India's context, while we have a National Blood Policy which came into being in 2002, India still does not have any dedicated national blood legislation and it works solely on regulation through the licensing mandate under the Drugs and Cosmetic Act, 1940 and Drugs and Cosmetics Rules, 1945, and the power for licensing is vested with the Drug Controller General of India and the State Drug Controllers.

There are three key pillars that make a country's blood system effective: availability, affordability and safety. In order to address these three pillars and as recommended by WHO, it is crucial for all activities related to blood collection, testing, processing, storage and distribution to be coordinated at a national level

through an efficient organization and integrated blood supply networks across the country.

Globally, countries have adopted various models of blood transfusion systems (BTS) which are governed by a national blood policy and legislative framework. One of the successful models of BTS is the partial centralization or hub-and-spoke model which has worked very well across many developed and developing nations. In this model, different satellite centres are connected to a regional hub that houses advanced technologies and highly trained manpower. Though there are different variations of the model that are adapted to the geographical and demographic context of a particular region, the most basic model calls for centralization of blood collection and processing at the hub and transporting blood and blood components to different geographically dispersed storage centres, supported by efficient demand mapping and inventory management system.

Through a connected and cohesive blood transfusion system such as this, one can not only address the inconsistencies around demand and supply of blood and blood products, but reduce wastage of blood, ensure uniform implementation of standards and consistency in the quality and safety of blood and blood products. Importantly, this would improve overall efficiency and economies of scale in the blood management process. This model will also allow for greater adoption of technology to ensure rational use of blood and blood products, minimize the risks associated with transfusion, and promote safe transfusion practices, including patient blood management.

Adoption of an efficient blood transfusion system is foundational for a strong national health system and a prerequisite to achieve universal health coverage. It has been 200 years since the first successful blood transfusion of human-to-human blood to transfusion was carried out, and yet, many countries across the world including India, still have not managed to create an robust system that addresses the challenges of blood adequacy, safety and sustainability.