

## Abstract

The main purpose of the study was to examine the critical factors that significantly contribute to supply of safe blood on a sustainable basis at the Kenyatta National Hospital (KNH) Blood Bank Unit (BTU) particularly during emergency situations. The study specifically examined the effectiveness of the existing systems and structures for blood collection and storage at the KNH; the extent of disparity between demand versus supply during both periods of normalcy as well as disasters; and the appropriateness of the strategies in place for ensuring adequate supply of blood at the KNH in the event of a disaster. The study was based on the structuration theory by Anthony Giddens in *The Constitution of Society* to explain and integrate agency and structure. The research used a descriptive research design. The target population included 500 blood donors and medical personnel/officials overseeing blood transfusion services at the KNH. Key informants from the KNH, Kenya Red Cross (KRC) and the Kenya National Blood Transfusion Service (KNBTS) were also interviewed. The research used both primary and secondary data and employed the observation and interview research methods facilitated by use of an observation checklist, questionnaires and an interview guide. The study results indicate that males account for the highest population of blood donors compared to females who are constrained by among others, biological challenges. The youthful population aged 20 – 29 donate most of the blood which is reinforced further by most donors being single. The respective medical personnel are highly educated with 63 percent having attained a bachelors degree or higher. Similarly, most donors are highly educated and account for 52 percent of blood donors. Management and safe storage of blood is constrained by the unavailability of adequate cold storage facilities as well as sufficient space for the BTU. The results showed overreliance on family/friends donors which is not sustainable and has resulted in blood shortage mainly witnessed during disasters. Medical examination, blood testing, processing and overall standard operating procedures and systems are adequate, though could be enhanced by migrating and embracing digitalized or advanced solutions. The results show that there is inadequate awareness and education on blood donation. That awareness on blood donation is created by word of mouth only during situations when donors interact with medical staff and relatives of patients in need of blood. Reasons for not donating blood are varied and could be mitigated through providing correct information. The study concludes that the systems and structures that are in place for blood collection at the KNH are mostly sufficient but are faced with some constraints which if addressed, would transform the BTU into a best practice centre especially during disaster response. The study further concluded that there is insufficient supply of blood at KNH and the demand is not met both on a normal day and during disaster events. Lack of awareness and knowledge on the blood transfusion process has contributed to poor supply of blood which has resulted in low donor turnout and over reliance on family replacement donations. Demand, the study concludes, has also been affected by lack of information on the donation process, motivation to give blood and a high rate of infections such as HIV/AIDS and non-communicable diseases. The study recommends that funding be increased toward providing adequate facilities for storage and management of the BTU; that standard operating procedures and systems though adequate, could be enhanced by migrating and embracing digitalized or advanced solutions. That there is need to identify and resolve training gaps with regard to blood donation in early childhood education and adult targeting through a deliberate effort to disseminate information on the importance of blood donation. The Ministry of Health should establish strategies to reduce reliance on school age children as the biggest donor block by seeking ways to increase the donor pool of those between

18 to 65 years of age and explore policy toward encouraging voluntary non-remunerated donors and providing mechanisms to operationalize the same