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Priority needs and wisdom strategy for blood transfusion safety in developing low-resource countries

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ABSTRACT

Objective: To evaluate the implementation of alternative safety measures that reduce therisk of transfusion transmissible infections as an affordable measure in low resource countries. ***Background:*** It is still difficult in developing countries with limited resources to mandatenucleic acid testing due to its high cost. Although NAT reduces the window period of in-fection, the developing countries are still in need of an efficient and effective transfusion programme before implementing the complex high cost NAT.

Study Design and Methods: Two thousand eight hundred eighty sero-negative first-timeand repeat donations from Fayoum University Hospital blood bank were individually analysed by NAT for HIV, HBV and HCV. Only discriminatory-positive NAT were classified compar-ing the non-remunerated and family replacement donations.

Results: Significant discriminatory-positive differences were observed for HBV NAT results,2 remunerated donations compared to 0 non-remunerated sero-negative donations. The discriminatory positive differences were also significant for HCV NAT results, 4 remuner-ated donations compared to 1 non-remunerated sero-negative donation. No sero-negative, discriminatory-positive NAT HIV case was found. Seven out of 8 discriminatory positive cases were from first time donations.

Conclusion: In order to ensure blood safety, the recruitment and retention of voluntary,non-remunerated repeat donors should be a major commitment for low resource coun-tries in which NAT implementation is costly and not feasible.

1. Introduction

Blood transfusion is an essential component of modern health care that saves millions of lives each year, and it will continue to be so for many years to come [1,2]. More than two-thirds of the world does not have access to safe blood [3]. The risk of transmitting pathogens through blood transfusion in developing low resources countries is very high, not only because many blood-borne pathogens are endemic, but also due to insufficient governmental awareness, funding, facili-ties and centralised educational and safety programmes [4].

Nucleic acid testing (NAT) blood screening for transfu-sion transmissible infections (TTIs) was originally intended to complement serological screening for detection of do-nations infectious for those viruses. The main advantage of NAT screening is the prevention of new incident cases during the window period infections. An additional benefit, which was identified as a result of accumulated experience of the use of the NAT, was the identification of occult hepatitis B carrier status, which can potentially be infectious [5].

Most developing countries can neither afford to utilize the latest nucleic acid testing (NAT), nor have the infrastructure and the trained personnel required to im-plement the effective yet costly methods to ensure the safety employed in developed countries [5,6].

Blood-banking services in Egypt are mainly hospital-based, and most hospitals obtain blood from relatives and friends of patients (family replacement donors) who give

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