Reduction in unnecessary transfusions through the effective clinical use of blood\(^1\).

Each of the 4 strategies is efficient in reducing risks of infection during blood transfusion. Indeed, African countries with coordinated systems, collecting blood from voluntary and non-remunerated blood donors, and/or screening TTIs through quality assured techniques have substantially lower prevalences of TTIs in blood donors\(^1\). Such strategies must be based on the five quality system essentials: Organization, structure and infrastructure; Standards (references); Documentation (traceability); Education (teaching and training); Assessment (Monitoring and Evaluation). These essentials and their implementation in the vein-to-vein transfusion chain should be seriously considered before attempting to bridge the gaps with advanced and sophisticated expensive technologies and methodologies.

However, despite the current effort, residual risk of TTIs is still very high as reported by the Francophone Africa Blood transfusion research network\(^2\). Viral detection through nucleic acid testing would certainly be most beneficial but it is still not feasible in most African countries due to financial and technical reasons. In addition, the efficacy of screening is limited by many factors including genetic variations, inappropriate test conditions, absence of quality assurance in many centers, and the inability to detect recently infected subjects. Systematic screening of blood donor for endemic and public health diseases such as malaria is still problematic. Moreover, it is still impossible to know or reliably predict if and when emerging and re-emerging pathogens (Chikungunya Virus, Ebola virus, dengue, etc.) will threaten the safety of the blood supply. Thus it seems logical to assume that any other strategy to eliminate the risk of infection, or reinforce the above recommendations without hampering them should be considered.

For many years, physical and/or chemical treatment of blood products has been only feasible for platelet concentrates and plasma. However, Whole Blood and Red Blood Cells are the main products used by a vast majority of clinicians in sub-Saharan African countries\(^2\). With recent development of new possibilities by some
researchers, ‘Inactivation Efficacy of Current Pathogen Inactivation
Technologies (PIT)’ needs to be considered on whole blood. *Intercept
Technology* is a novel platform technology (2nd generation) that
is based on the addition of the chemical compound, S-303 (0.2
mmol/L) and glutathione (GSH; 20 mmol/L) as a quencher. On
the other hand, Mirasol technology uses the same riboflavin-based
PIT which was successfully evaluated for platelets and plasma.
The toxicology profile and pathogen inactivation efficacy have
already been positively reported for both[3]. These technologies are
also accompanied by not inconsiderable costs. However, the use of
pathogen inactivated Whole Blood and convalescent plasma could
then These technologies are also accompanied by not inconsiderable
costs. highly help in the emergency management of epidemic crisis
such as the current Ebola virus in West-Africa[4].

The use of pathogen reduced Whole Blood and convalescent
plasma could highly help in the emergency management of epidemic
crisis such as the current Ebola virus in West-Africa[9].

However, there is still a need for relevant clinical evaluation and
hemovigilance data in phase III of the evaluation process that will
ensure not only safety but also a reproducible and user-friendly
technology for resource-limited settings. Such technology should be
adapted to current recommended blood safety regulations, affordable
and economically sustainable for blood services.

While the availability of pathogen inactivated Whole Blood
remains a challenge in Africa, nevertheless, the use of pathogen
reduction of Whole Blood and Red Blood Cells is recommendable
to Africa, where Whole Blood is predominantly used. Hence,
there is a dire need for researchers, international organizations and
pharmaceutical companies to concentrate efforts towards developing
this blood safety technology in these resource-limited settings.

**CONFLICT OF INTERESTS**
The authors have no conflicts of interest to declare.

**REFERENCES**

   Department of Essential Health Technologies World Health Orga-
   nization, Geneva, Switzerland.
2. Tapko JB. Status of blood safety in the WHO African region:
   ten years after adoption of the regional strategy. *Africa sanguine
   2013; 16(1): 2-18*
3. Tagny CT, Murphy EL, Lefrère JJ. The Francophone Africa Blood
   *Transfus Med 2013; 23(6): 442-444*
4. Schlenke P. Pathogen Inactivation Technologies for Cellular Blood
   Components: an Update. *Transfus Med Hemother 2014; 41:
   309-325*
5. Wood D on behalf of WHO Ebola Blood and Plasma group. Con-
   valescent plasma in the context of Ebola infection control Briefing
   for the ECBS. World Health Organization, Geneva, Switzerland.

**Peer reviewer:** Rui-tao wang, MD, PhD, Associate Professor,
Department of Geriatrics, the Second Affiliated Hospital, Harbin
Medical University, NO.246 Xuefu ST, Nangang District, Harbin,
150086, China.