

Improving blood transfusion services in Africa: the launch of T-REC

Sharing experiences between African laboratories and blood banks is at the heart of this new initiative

Evidence used to guide blood transfusion practices in Africa has almost exclusively been generated by wealthy countries in Europe and North America. It is often inappropriate for low-income countries yet research coming from within Africa about blood transfusion is seriously lacking. T-REC is a consortium of researchers and health practitioners who will work over the next 4 years to increase local research capacity to improve blood transfusion services in Ghana and Zimbabwe.

'Blood transfusion is an essential component of modern healthcare which saves millions of lives each year worldwide, including Ghana. Although the need for blood is universal, in Africa and the developing world the pattern of blood usage differs markedly from that of the Western world. It is important we have an evidence base to make sure we get our blood services right in Africa, not using things that have only been tried and tested in the Western world,' said Justina Ansah, Director of the National Blood Service, Ghana.

Blood transfusions carry risks of transmitting infections such as hepatitis B and C, HIV, syphilis, malaria, and other transfusion transmissible infections so they should only be used as a life-saving measure. Blood donations which screen positive for infections should be rejected and in Africa, where infections are common, this means that some donated blood is wasted. Blood bank directors have a difficult balance to strike between ensuring blood is safe and providing enough blood to meet demand. Many unnecessary deaths occur in sub-Saharan Africa because the supply of blood for transfusion is insufficient. For example, 26% of deaths from maternal haemorrhage in Africa are due to non-availability of blood.¹ The inability of Africa's transfusion services to provide enough safe blood has serious clinical and public health consequences in a region where severe anaemia is a major cause of mortality in young children, haemorrhage is responsible for one-third of maternal deaths, and HIV/AIDS is common. Improving the supply of safe blood in sub-Saharan Africa will have a direct positive impact on the likelihood of the region achieving targets for all three health-related Millennium Development Goals.

Despite the fact that blood occupies a significant

This article has been compiled by Alison Dunn on behalf of T-REC. T-REC Principal Investigators are: Imelda Bates, Justina Ansah, David Mvere, Rene Van Hulst, Ib Christian Bygbjerg. T-REC Deputy Principal Investigators are: Oliver Hassall, Shirley Owusu-Ofori, Tonderai Mapako, Maarten Postma, and Henrik Ullum.

place in the symbolism, rituals, and beliefs of many cultures in sub-Saharan Africa,^{2,3} a recent literature review confirms that the quantity and quality of research into barriers to blood donation is very poor.⁴ There has been no detailed analysis of ways of recruiting blood donors in Africa and research into what motivates different types of blood donors in Africa is badly needed and is a priority research area for African transfusion service directors.⁵

Responding to the need for evidence

At a workshop in Mombasa, Kenya in 2008, transfusion service stakeholders from Africa identified and prioritised the research they needed to generate evidence that was specific for the needs of Africa's transfusion services. A disturbing conclusion was that African transfusion services had very little indigenous research capacity at any level and lacked research strategies. They were simply not able to generate the much-needed evidence.

The African transfusion service stakeholders devised strategies to address this major gap in research capacity. They wanted a project that would:

- teach transfusion service staff research skills;
- establish links with local academic institutions for research mentoring;
- generate research abstracts for transfusion meetings;
- encourage interest in transfusion research by hosting projects for students from local universities.

T-REC: building African research capacity

T-REC is a 4-year EU-funded project to build the research capacity of blood transfusion services in Africa. In Accra, Ghana on 5–6 July 2011, the T-REC consortium met for the first time to discuss and plan future activities. The first morning of the event was dedicated to introducing the aims and purpose of T-REC to a range of people, including many health professionals and researchers from within Ghana's medical institutions in Accra and Kumasi.

'Blood transfusion it is a hugely important issue for all health services and it is very expensive so we have to get it right. It is neglected in terms of having evidence-based practice,' said Imelda Bates, Principal Investigator and Project Leader, from the Liverpool School of Tropical Medicine.

A representative from the Ministry of Health Ghana was present and welcomed the team to Ghana. 'The Ministry of Health Ghana is wholly behind T-REC. The Ministry is in the process of developing a whole agency



The Accra blood centre. From left to right: blood bags, blood samples, and a member of the blood transfusion staff

in charge of blood transfusion. The fashion is towards evidence-based medicine and in Ghana we now discourage the extrapolation of evidence which has come from another part of the world,' said Dr Ahmed Zackharia, Director of the National Ambulance service and representative of the Minister of Health, Hon Joseph Yiekeh Chereh.

The partners in T-REC are: the National Blood Service Ghana; National Blood Service Zimbabwe; African Society for Blood Transfusion; Liverpool School of Tropical Medicine, UK; University of Copenhagen, Denmark; and the University of Groningen, Netherlands. The consortium discussed T-REC management and governance structures, and planned the implementation of the project activities. In the afternoon, the team visited the Accra Blood Centre to meet with staff and witness the challenges that the service faces.

What will T-REC do?

T-REC will support transfusion services in Africa to strengthen their own research capacity by providing training and forging research collaborations between researchers, educators, transfusion prescribers, managers, and policy makers using expertise from Africa and the EU. The project has also put measures in place to promote the use of evidence generated by the project to influence policy and practice.

T-REC will work in three main ways:

- Through funding and supervising four Ghanaian and Zimbabwean PhD students to research about blood transfusion services in their countries. PhD projects are likely to focus on clinical and laboratory aspects of blood transfusion and studies for cost-effectiveness.
- T-REC will also provide small bursaries to 60 local undergraduate and postgraduate students in medicine, science, social sciences, and media to focus on blood transfusion as an area of study. Local universities are providing faculty support.
- T-REC will work with 42 local blood transfusion staff to undertake a Professional Diploma in Project Design and Management (DPDM). This means providing training for blood transfusion professionals through a 1-year, in-post research project to improve transfusion services to meet the needs of the local population.

'Research in all fields is very important as it enables evidence-based policies to be in place. It helps policy makers look at their various activities and realign according to the findings of the research projects. In Africa we are lacking that evidence. Clearly a lot is expected from these research projects, so that we are able to develop more evidence for policy decisions,' said David

Mvere, Chief Executive Officer of the National Blood Service Zimbabwe and Secretary General for the African Society for Blood Transfusion (AfsBT). T-REC is supporting AfsBT to promote research about blood transfusion in the African region.

T-REC aims to integrate research into the mainstream activities of blood transfusion organisations. We hope to strengthen research systems, infrastructure and networks within and between blood transfusion services and academic institutions in Africa and internationally. If you would like to get involved in T-REC, we would encourage institutions interested to host students doing transfusion research, provide research supervision, contribute to research teaching research skills or provide additional funding to take the project further.

References

1. Bates I, Chapotera GK, McKew S, van den Broek N. Maternal mortality in sub-Saharan Africa: the contribution of ineffective blood transfusion services. *BJOG* 2008; 115: 1331-9.
2. Mbiti JS. *African Religions and Philosophy*. Oxford: Heinemann, 1990.
3. White L. *Speaking with Vampires: Rumor and History in Colonial Africa*. Berkeley: University of California Press, 2000.
4. Gede T. *Motivations, Barriers, Attitudes and Fears Influencing Voluntary Blood Donation in Sub-Saharan Africa: a Systematic Review*. Oxford: University of Oxford, 2010.
5. Mapako T. Proceedings of blood transfusion research workshop, Mombasa, Kenya: 23-25 September 2008. *Africa Sanguine* 2008; 11: 9-13.

