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## Challenges associated with the effective management of major haemorrhage in developing countries

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ajor haemorrhage is defined as the replacement of a patient's blood volume or transfusion of >10 units of packed red cells within a 24 hours period. It can also be defined as the loss of 50% of blood volume within a 3 hours period or a loss of 150 ml per minute. Haemorrhage is a leading cause of early death in most settings in Africa following traumatic injury, intra and post - surgical and ante and post - partum. It is the cause of morbidity in 44% of maternal death in developing countries. More than 536,000 women die every year from pregnancy -related complications including ante and post partum haemorrhage. Haemorrhage accounts for 40% of deaths from trauma and is the most common cause of preventatable mortality in developing countries. The challenges associated with the effective management of haemorrhage particularly in developing countries include; chronic blood shortages, high prevalence of TTI's, reliance on whole blood transfusion, lack of other component required to manage coagulopathy, absence of a functional fit for purpose national blood transfusion service, poor inventory control of blood and blood products, suboptimal use of indication coding tool, poor management of coagulopathy, educational, cultural and awareness-related issues associated with donation and transfusion, absence of specially selected products to meet the special needs of certain patients groups, lack of infrastructure (uninterrupted power supply and challenge of cold chain management of blood product), absence of O Rhesus Negative blood for emergency use, challenge of a diminishing blood supply, challenge associated with the recruitment and retention of voluntary non -remunerated donors, reliance on family replacement and commercial blood donors, inadequate use of pharmacologic and non - pharmacologic alternatives to allogeneic blood. The aim of blood volume replacement with concentrated red cells and other plasma products following massive haemorrhage includes; to rapidly and effectively restore adequate blood volume, prevent hypovolemic shock, allow for adequate haemostasis, oxygen carrying capacity and blood biochemistry, to allow for an early and aggressive correction of coagulopathy, allow for optimal resuscitation, and to reduce potentially preventable deaths. Blood components that can play a role in the management of coagulopathy include; red cell concentrate, fresh frozen plasma, cryoprecipitate and platelet concentrate. Pharmacologic agent that can play a role in the management of coagulopathy and major haemorrhage include; anti-fibrinolytic (aprotinin and tranexamic acid), vitamin K, prothrombin complex concentrate (PCC) and Novo-7. Non-blood components and non-pharmacologic measures to manage major haemorrhage include; direct pressure /tourniquet if appropriate, stabilization of fractures, surgical interventions (damage control surgery, interventional radiology, use of endoscopic and obstetrics techniques and thromboelastometry. Evidenced based management of major haemorrhage require a coordinated approach by all stake holders involved in the management of major haemorrhage; from the managing clinician to the transfusion laboratory scientist to the porters to ensure that the management of haemorrhaging patients is timely and optimal.

## Biography

Erhabor Osaro completed his PhD in Immuno-hematology at Rivers State University of Science and Technology at Rivers State, Nigeria. He is a fellow of the Institute of Biomedical Science London. He has many scientific awards including the British Blood Transfusion Society and Margaret Kenwright- young scientist's awards. He has written more than 140 articles, 4 books and 5 book chapters. He is reviewer and editor of several scientific journals from around the World.

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