Retrospective data were collected for patients at Volta Regional Hospital who had been transfused between 1st Sept and 30th Nov 2017 from the blood bank, patient folders, and electronic record. Using the guidelines, a checklist to assess appropriateness of each transfusion was devised in collaboration with NBSG. Based on interviews with clinicians, and following a pilot, a questionnaire was devised to assess clinicians' knowledge and perceptions of transfusion.

Data were gathered for 313 transfusions. 82% of transfused units were whole blood, 12% were fresh frozen plasma (FFP), and 6% were packed cells. Platelet concentrate and cryoprecipitate were not available. Obstetrics and gynaecology used the most blood components (38%), followed by medicine (26%), surgery (22%) and paediatrics (13%).

91% of patients had their haemoglobin checked within 5 days prior to transfusion. 162 of 313 transfusions (52%) were appropriate, and 136 were not appropriate (44%). Of the 31 FFP transfusions, 27 (87%) were not appropriate, and 16 (59%) were used for unrecognised indications including nephrotic syndrome and hypoalbuminaemia. 144 of 282 transfusions of whole blood/ packed cells were appropriate (51%), and 126 were not appropriate (45%).

44 questionnaire responses (response rate 88%) were received – 9 from medicine, 10 from surgery, 10 from obstetrics and gynaecology, and 15 from paediatrics. 29 respondents were house officers (69%).

Respondents indicated they felt knowledgeable about the indications and complications of transfusion, and felt confident making transfusion decisions. However, misperceptions of appropriate indications for blood components were identified. 48% of respondents listed incorrect indications for FFP. Of the 8 respondents who gave a threshold for transfusing patients with asymptomatic anaemia, 7 responses (88%) differed from those in NBSG guidelines. Only 2 of 44 (5%) of respondents were familiar with the contents of the NBSG guidelines and only 6 (14%) had received post-graduate transfusion teaching.

11 respondents (25%) had treated patients in the preceding 3 months who suffered adverse consequences due to inadequate blood supply. These included delayed discharge (noted by 8 respondents), delayed surgery (3 respondents), and death (3 respondents).

In conclusion, 44% of transfusions within the described period were not appropriate. Most clinicians were unaware of the national guidelines, and gaps in knowledge relative to the national guidelines were identified. Efforts to optimise appropriate use of blood components should be one component of a national strategy to improve safety and availability of blood transfusion in Ghana. Targeted education to clinicians may have a role in supporting these efforts.**Disclosure of Interest**: None Declared.

Keywords: Africa, appropriate use, blood components, blood transfusion, clinical use of blood, Ghana, guidelines, national guidelines, sub-Saharan Africa, transfusion, use of blood, Volta.

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A web-app for weight-adjusted red cell dosing: post-development implementation and clinical effectiveness

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The empiric nature of red cell dosing in normovolaemic anaemia can lead to under or over-transfusion when aiming to meet a post-transfusion haemoglobin target, especially when the patient's body weight is not accounted for. It is always important to clinically re-evaluate patients after a single unit of red cells regardless of the total number administered. However repeat haemoglobin testing between units has a time and resource impact. This could be avoided if the volume required to meet the target haemoglobin level could be reliably predicted in the context of body weight. A web app was developed, technically validated and CE marked as a class 1 medical device in 2016 by Bolton NHS Foundation Trust, and clinically implemented in 2017. The implementation strategy was supported at organisational executive level and included hosting the App on the Trust intranet, promoting individual desktop access, clinical and laboratory education and awareness, embedding in blood transfusion policy, redesign of the transfusion red cell requesting process, and monthly quality impact assessment audit with staff support and feedback.Nine months' post-implementation data were analysed for the level to which the App was being used in clinical practice, clinical effectiveness of the device was evaluated by auditing post-transfusion haemoglobin outcomes, and the impact on red cell usage was also evaluated.

After the first month of implementation 56% of red cell issues had evidence of the App being used to calculate the dose, rising to 88% by month nine. There were 581 red cell transfusions where patients received the same number of units as calculated by the web app. One hundred and forty five were excluded from the data because there was either no post-transfusion haemoglobin value, were found to be bleeding on retrospective audit, had profound anaemia and would have required more than two units to reach their target haemoglobin, or received fewer units than calculated and issued. Of the remaining 436 cases, 388 (89%) reached their post-transfusion target haemoglobin level. Twenty-four cases (5.5%) did not meet the target, and 24 (5.5%) exceeded the target. At financial month 8 (2017/18), 3016 units had been transfused in total with a prediction that 3348 would be transfused for normovolaemic anaemia by financial year end, representing a projected 16.5% reduction in red cell usage.

The data suggest that use of a web app for weight-adjusted red cell dosing is effective in predicting the volume of red cells required to meet a target post-transfusion haemoglobin level in non-bleeding adult patients with normovolaemic anaemia. It has the advantage of limiting the need for repeat haemoglobin testing while continuing to clinically re-evaluate the patient after each unit, providing a more personalised approach to patient blood management. The data predicts a significant reduction in red cell usage and therefore a useful adjunct to other appropriate use of blood strategies. The app can be successfully implemented with high uptake in a committed organisation with a flexible and well supported approach.

Disclosure of Interest: None Declared.

Keywords: patient blood management, red cell, transfusion.

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Study to investigate ability of clinicians to recognise reportable hazards of transfusion as defined by the definitions of Serious Hazards Of Transfusion reporting categories

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Each year in the UK, data on adverse events and reactions in blood transfusion, (known as serious hazards of transfusion,) are collected by SHOT, the UK's professionally led haemovigilance scheme. Blood safety initiatives come from this data, and continuing data is needed for their ongoing monitoring and evaluation. Although the reporting of serious hazards of transfusion to SHOT is done by transfusion practitioners and haematologists, they in turn may need notification