

# Annual SHOT Report 2014 – Supplementary Information

## Chapter 19: Transfusion-Associated Circulatory Overload (TACO)

DATA SUMMARY							
Total number of cases: n=91							
Implicated components			Mortality/morbidity				
Red cells		67	Deaths <i>definitely</i> due to transfusion		1		
Fresh Frozen Plasma		4	Deaths <i>probably/likely</i> due to transfusion		3		
Platelets		6	Deaths <i>possibly</i> due to transfusion		2		
Cryoprecipitate		0	Major morbidity		36		
Granulocytes		0	Potential for major morbidity ( <i>Anti-D or K only</i> )		0		
Anti-D Ig		0					
Multiple components		14					
Unknown		0					
Gender	Age		Emergency vs. routine and core hours vs. out of core hours	Where transfusion took place			
Male	42	≥ 18 years	87	Emergency	8	Emergency Department	2
Female	49	16 years to <18 years	0	Urgent	24	Theatre	3
Not known	0	1 year to <16 years	3	Routine	59	ITU/NNU/HDU/Recovery	12
		>28 days to <1 year	0	Not known	0	Wards	60
		Birth to ≤28 days	0	In core hours	41	Delivery Ward	2
		Not known	1	Out of core hours	28	Postnatal	0
				Not known/Not applicable	22	Medical Assessment Unit	0
						Community	2
						Outpatient/day unit	10
						Hospice	0
						Antenatal Clinic	0
						Other	0
						Unknown	0

(ITU=Intensive therapy unit; NNU=Neonatal unit; HDU=High dependency unit)

## Transfusion-Associated Circulatory Overload (TACO) - Previous Recommendations

Year first made	Action	Recommendation
2013	<b>The Royal Colleges (of Physicians, Surgeons, Anaesthetists, Obstetricians and Gynaecologists, and Pathologists) in association with the General Medical Council and the Nursing and Midwifery Council</b>	All clinical staff should be receive education and training on measures to avoid transfusion-associated circulatory overload (TACO) and the recognition of TACO, which should be included in the curricula of trainee doctors, nurses and midwives
2013	<b>Hospital Transfusion Committees, Hospital Transfusion Teams</b>	'Don't give two without review': When transfusing adult patients at increased risk of TACO, clinical review should be undertaken after each red cell unit, and single units considered where appropriate, irrespective of whether the individual has a low body weight
2013	<b>Royal College of Physicians, Royal College of General Practitioners</b>	Patients with chronic iron deficiency anaemia, particularly those who are elderly, should receive iron replacement therapy, with the underlying cause of iron deficiency identified and treated
2012	<b>All clinicians</b>	The 2012 British Committee for Standards in Haematology (BCSH) addendum to the blood administration guidelines on measures to reduce the risk of transfusion-associated circulatory overload (TACO) should be followed
2012	<b>All clinicians</b>	Transfer of patients during a transfusion episode is potentially hazardous and should be avoided wherever possible. If unavoidable, clinical handover templates should include information on measures to reduce the risk of TACO and appropriate monitoring in patients identified to be at risk by clinical assessment pre-transfusion

<b>2012</b>	<b>All clinicians</b>	Post-transfusion clinical assessment should be also be undertaken and patients monitored for evidence of TACO during the first 24 hours after transfusion so that appropriate and timely management can be instituted. Transfusions should only take place where there are facilities and trained staff to monitor and manage adverse incidents
<b>2011</b>	<b>General practitioners, Hospital doctors, Medical Schools, Hospital Transfusion Teams (HTT)</b>	Blood transfusion is not an appropriate treatment for iron deficiency. Elderly patients are particularly at risk for transfusion-associated circulatory overload. Iron deficiency must be diagnosed and treated with iron supplements
<b>2011</b>	<b>Transfusion practitioners; Hospital transfusion teams; Hospital Transfusion Teams (HTTs); Hospital Transfusion Committees (HTCs)</b>	All measures must be taken to reduce the risk of transfusion-associated circulatory overload (TACO). These include pre-transfusion clinical assessment to identify patients at increased risk of TACO, in whom particular consideration should be given to the appropriateness of transfusion, the rate of transfusion and diuretic cover. Careful attention to fluid balance is essential and must be documented
<b>2011</b>	<b>HTTs, transfusion laboratory managers</b>	Prothrombin complex concentrate should be used for warfarin reversal in accordance with national guidelines and should be immediately available in all Trusts/Hospitals/Health Boards
<b>2010</b>	<b>BCSH</b>	National guidelines are required on clinical assessment pre transfusion, which should include taking into account concomitant medical conditions that increase the risk of TACO (cardiac failure, renal impairment, hypoalbuminaemia, fluid overload) and measures to reduce the risk of TACO
<b>2010</b>	<b>BCSH</b>	The rate of transfusion also merits review, particularly in patients >70 years and those with concomitant factors that increase the risk of TACO
<b>2009</b>	<b>Consultant Haematologists and SHAs</b>	Patients with TTP should have plasma exchange at presentation (and ideally within 24 hrs of presentation), with plasma infusion alone administered prior to transfer to a unit or hospital that can offer plasma exchange and appropriate management.

<b>2008</b>	<b>HTT</b>	Increased recognition of TACO by clinicians and reporting to SHOT is needed, to raise awareness and increase focus on this important and in many cases potentially avoidable complication of blood transfusion.
<b>2008</b>	<b>NBTC</b>	Education and training aimed at the recognition and avoidance of TACO is required for doctors across all specialties, and nurses at both national and local levels. Education and training of junior doctors, to ensure appropriate decision making as regards transfusion of blood components/products and appropriate prescription, remains a key priority.
<b>2008</b>	<b>HTT, BCSH</b>	Doctors should ensure careful clinical assessment of each patient to whom transfusion of components is being considered, to ensure that the proposed transfusion is appropriate. The minimum volume of blood components required should be prescribed to be transfused at an appropriate rate, in accordance with BCSH guidelines on blood administration.
<b>2008</b>	<b>HTT, BCSH</b>	If it is necessary to transfuse RBC to a patient with chronic anaemia, the risk of precipitating congestive cardiac failure may be minimised by administering a diuretic. The decision to give a diuretic must be based on clinical assessment of the patient.
<b>2008</b>	<b>HTT, BCSH</b>	Nursing staff should record the rate of transfusion and fluid balance in patients receiving blood components and act on signs suggestive of TACO. Transfusions should be administered at times, and in locations, permitting careful observation of patients throughout the transfusion and upon completion. Out-of-hours transfusions should be avoided unless appropriate facilities are available. BCSH guidelines on blood administration in preparation should address these issues.