Transfusion-Associated Circulatory Overload (TACO)

FIGURES FROM THE ANNUAL SHOT REPORTS 2016-2024

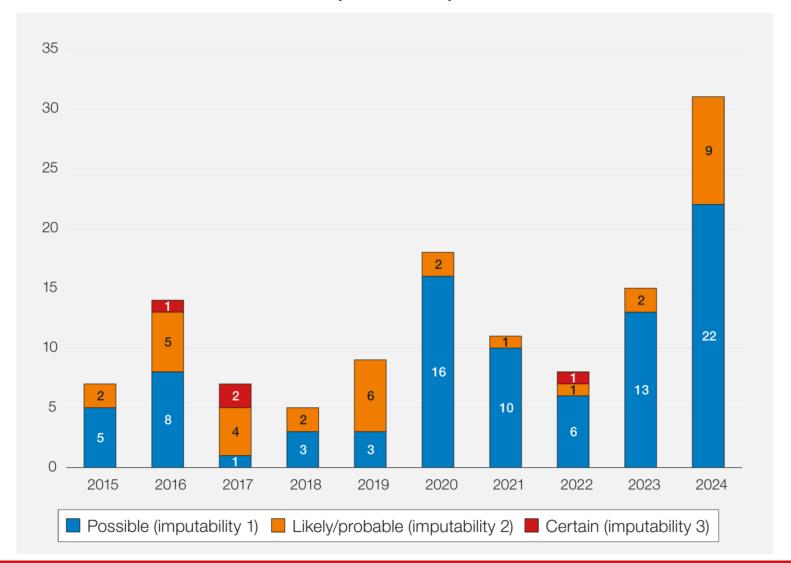
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Updated TACO pre-transfusion risk assessment 2024

TACO Risk Assessment				YES	NO	
<u>/</u>	Does the patient have any of the following?: diagnosis of 'heart failure', congestive cardiac failure (CCF), left ventricular dysfunction, aortic stenosis, or any other heart valve disease					
	Is the patient on a	a regular diuretic?				
	Does the patient	Does the patient have severe anaemia?				
	Is the patient kno	wn to have pulmo	nary oedema?			
	Does the patient	Does the patient have respiratory symptoms of undiagnosed cause?				
	Is the fluid balance	ce clinically signific	cantly positive?			
<u> </u>		eiving intravenous in the previous 24				
	Is there any perip					
	Does the patient	ent have a low serum albumin level?				
	Does the patient	have significant re	nal impairment?			
If risks identifie	If risks identified				YES	NO
Review the need for transfusion (do the benefits outweigh the risks)?						
Can the transfusion be safely deferred until the issue is investigated, treated or resolved?						
If proceeding with	red cell transfusion	n: ensure appropr	iate indication and v	olume is pres	cribed (ad	ults)
ndication code for transfusion Target Hb Dosing advice						
Acute anaemia (R2)	anaemia (R2) Post-transfusion target Hb 70 - 90g/L Body weigh		Body weight d	dosing (max 2 units)		
Acute anaemia (R3: with acute MI/ACS) Post-transfusion targe		get Hb 80 - 100g/L	Body weight dosing (max 2 units)		nits)	
Severe symptomatic chronic anaemia (R7) No target Hb - minimum transfusion Usually single to			unit only			
Regular transfusion programme (R4) Individualised target Hb Body weight do			osing (max 2 u	nits)		
Other measures	to mitigate TACC): ASSIGN ACTIO	ON AS APPROPRIA	TE		TICK
			ON AS APPROPRIATION IN AS APPROPRIATION IN A SECTION IN A			TICK
	n unit (red cells) and revie					TICK
Review patient after each	n unit (red cells) and revie	ew symptoms of anaem	iia. Is further transfusion ne			TICK
Review patient after each	n unit (red cells) and revio e diuretic (where appropria	ew symptoms of anaem	iia. Is further transfusion ne			TICK
Review patient after each Measure the fluid balanc Consider a prophylactic	n unit (red cells) and revio e diuretic (where appropria	ew symptoms of anaem	ia. Is further transfusion ne	ecessary?		
Review patient after each Measure the fluid balance Consider a prophylactic Monitor the vital signs cl	n unit (red cells) and revio e diuretic (where appropria	ew symptoms of anaem ate/not contraindicated aturation	ia. Is further transfusion ne) Due to the diff physiology, babies	ecessary?	ferent risk fo	ital or TACO.



TACO-related deaths with imputability, 2015 to 2024 (n=125)



Transfusion management of a non-bleeding adult patient identification of the cause of anaemia 2024

Anaemia in a non-bleeding adult patient: transfusion management

WHAT IS THE CAUSE OF THE ANAEMIA? - CRITICAL STEP

Acute anaemia in a haemodynamically stable patient explained by recent bleeding, surgery or critical illness

R2: Hb <70g/L (Hb target 70-90q/L)

R3: Hb <80g/L with ACS* (Hb target 80-100g/L)

Use weight-adjusted red cell dosing/red cell dosage calculator (maximum 2 units with clinical review between units), or single unit and Hb check and clinical review approach

Chronic anaemia (not on regular transfusion)

Patient may be asymptomatic or minimally symptomatic despite severe anaemia and is haemodynamically stable

Check the red cell indices on the FBC: Microcytic/hypochromic suggesting iron deficiency Macrocytic suggesting B12/folate deficiency

Anaemia of chronic disease is usually normocytic or microcytic/hypochromic

Confirm deficiencies with B12, folate, ferritin and iron profile (serum iron, transferrin saturation) testing

Treat the underlying cause or deficiency

R4: These patients should have an individualised Hb trigger/target

Chronic anaemia on a

regular transfusion

programme

Chronic bone marrow failure - Transfuse to maintain a Hb which prevents symptoms. Hb 80g/L is a suggested initial threshold which can be adjusted if required

Haemoglobinopathy -Transfuse to achieve disease control (under direction of a haemoglobinopathy consultant)

Hb > 70g/L Transfusion unlikely to be required due to physiological compensation

Hb < 70g/L

Consider a single unit for severe symptomatic anaemia or to prevent acute complications of severe anaemia while underlying cause is treated. ACS (see note below*)

TACO risk assessment

Consider any further mitigations if TACO risks are present

*The decision to transfuse further units to achieve a higher Hb target in a patient with ACS/cardiac ischaemia should be balanced against the increased risk of TACO and exacerbation of heart failure



TACO pre-transfusion risk assessment 2023

TACO Risk Assessment			YES	NO
76 .	Does the patient have any of the following: diagnosis of 'heart failure', congestive cardiac failure (CCF), severe aortic stenosis, or moderate to severe left ventricular dysfunction?			
	Is the patient on a regular diuretic?			
	Does the patient have severe and	aemia?		
	Is the patient known to have pulr	monary oedema?		
	Does the patient have respiratory symptoms of undiagnosed cause?			
	Is the fluid balance clinically significantly positive?			
	Is the patient receiving intravenous fluids (or received them in the previous 24 hours)?			
	Is there any peripheral oedema?			
	Does the patient have hypoalbuminaemia?			
	Does the patient have significant renal impairment?			
If Risks Identified			YES	NO
Review the need for transfusion (do the benefits outweigh the risks)?				
Can the transfusion be safely deferred until the issue is investigated, treated or resolved?				
If Proceeding with Transfusion: Assign Actions				TICK
Body weight dosing for red cells				
Transfuse a single unit (red cells) and review symptoms				
Measure fluid balance				
Prophylactic diuretic prescribed (where appropriate/not contraindicated)				
Monitor vital signs closely, including oxygen saturation				
Name (PRINT):				natal
Role: Due to the differences in adult and nee physiology, babies may have a different risk			fferent risk	for TACO.
Date:	Date: Time (24hr): Calculate the dose by weight and ob the notes above.			erve
Signature:				

Transfusion management approach in non-bleeding adult patients 2023

Anaemia in a non-bleeding adult patient: transfusion management

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TACO pre-transfusion checklist 2022

TACO Checklist	Patient Risk Assessment	YES	NO	If Risks
	Does the patient have any of the following: diagnosis of 'heart failure', congestive cardiac failure (CCF), severe aortic stenosis, or moderate to severe left ventricular dysfunction?			Review to (do the key Can the until the resolved)
	Is the patient on a regular diuretic?			If Proce
	Does the patient have severe anaemia?			Body we
	Is the patient known to have pulmonary oedema?			Transfus review s
	Does the patient have			Measure
	respiratory symptoms of undiagnosed cause?			Prophyla
	Is the fluid balance clinically significantly positive?			Monitor oxygen :
	Is the patient receiving intravenous fluids (or received them in the previous 24 hours)?			Name (F
	Is there any peripheral oedema?			Role:
	Does the patient have hypoalbuminaemia?			Date:
	Does the patient have significant renal impairment?			Signatu

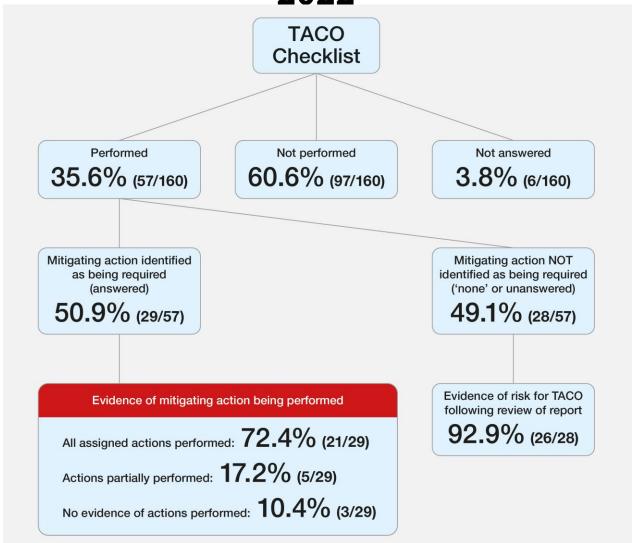
If Risks Identified		YES	NO
Review the need for transful (do the benefits outweigh th	7 100 pp. 10 pp.		
Can the transfusion be safe until the issue is investigated resolved?	•		
If Proceeding with Transfu	sion: Assign Act	ions	тіск
Body weight dosing for red	cells		
Transfuse a single unit (red cells) and review symptoms			
Measure fluid balance			
Prophylactic diuretic prescri	bed		
Monitor vital signs closely, is oxygen saturation	ncluding		
Name (PRINT):			
Role:			

Name (PRINT):		
Role:		
Date:	Time (24hr):	
Signature:	,	

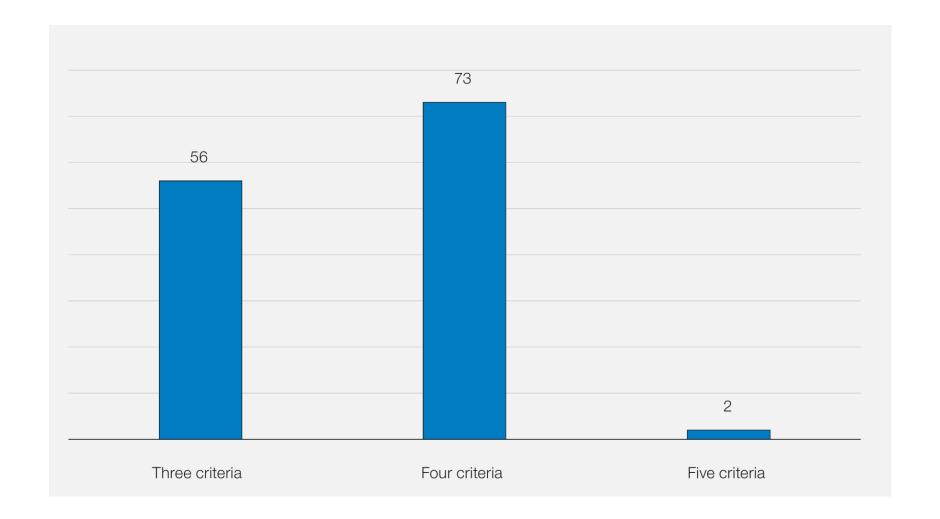
Due to the differences in adult and neonatal physiology, babies may have a different risk for TACO. Calculate the dose by weight and observe the notes above.



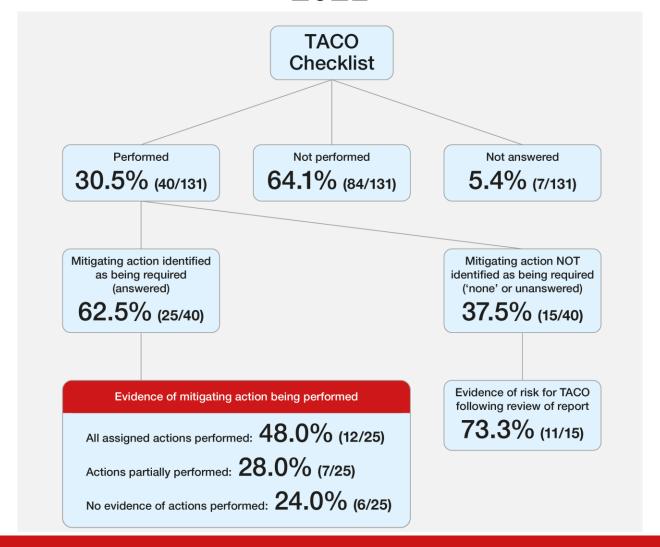
Use of the checklist to identify patients at risk of TACO and implementation of mitigating actions in 2022



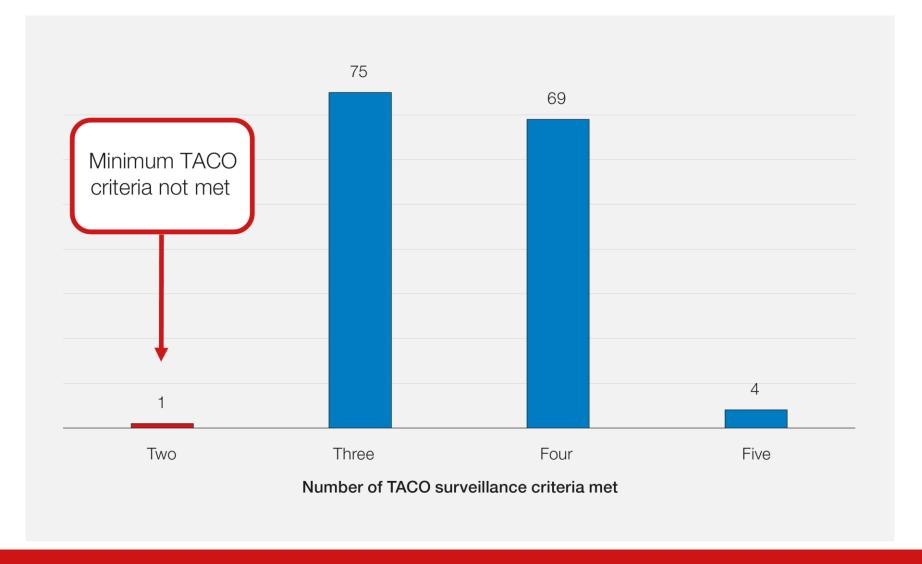
Number of TACO surveillance criteria versus number of accepted TACO cases in 2021



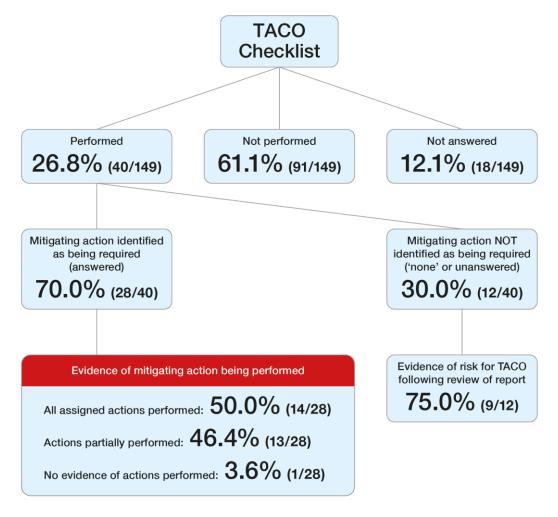
Use of the checklist to identify patients at risk of TACO and implementation of mitigating actions in 2021



Number of TACO surveillance criteria versus number of accepted TACO cases in 2020



Use of the checklist to identify patients at risk of TACO and implementation of mitigations in 2020

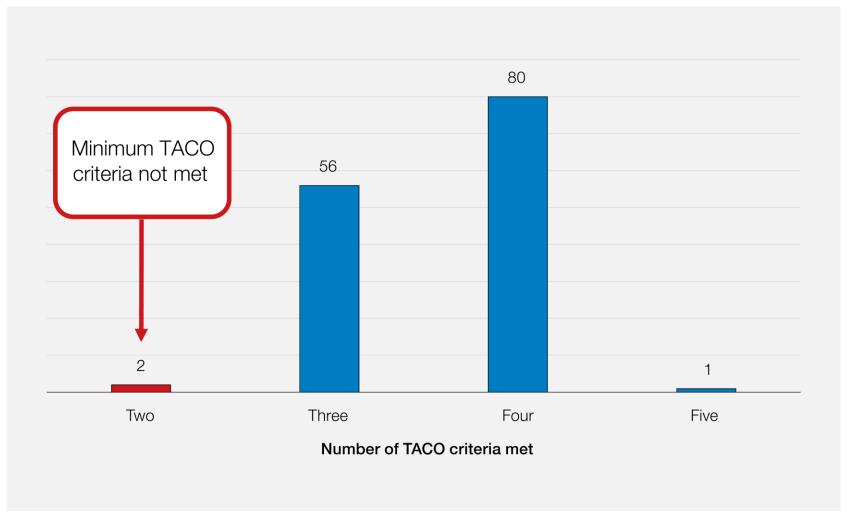


TACO pre-transfusion checklist 2019

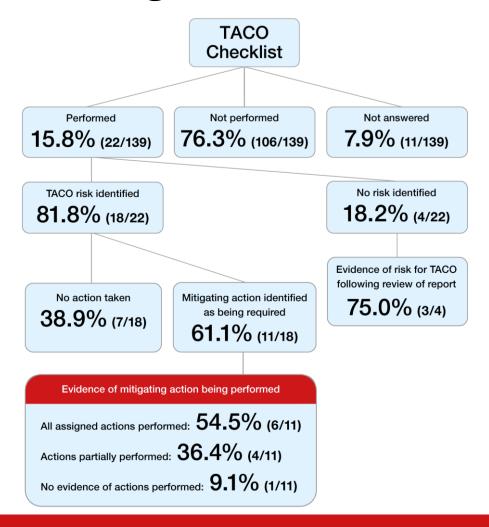
Red cell transfusion **TACO Checklist** If 'yes' to any of these questions for non-bleeding patients Does the patient have a diagnosis of 'heart failure' congestive cardiac failure (CCF), • Review the need for transfusion (do severe aortic stenosis, or moderate to severe left ventricular dysfunction? the benefits outweigh the risks)? Is the patient on a regular diuretic? Does the patient have severe anaemia? Can the transfusion be safely deferred until the issue can be Is the patient known to have pulmonary investigated, treated or resolved? oedema? Does the patient have respiratory Consider body weight dosing for red symptoms of undiagnosed cause? cells (especially if low body weight) • Transfuse one unit (red cells) and Is the fluid balance clinically significantly review symptoms of anaemia positive? Measure the fluid balance Is the patient on concomitant fluids (or has · Consider giving a prophylactic been in the past 24 hours)? diuretic Is there any peripheral oedema? Monitor the vital signs closely, Does the patient have hypoalbuminaemia? including oxygen saturation Does the patient have significant renal impairment?

Due to the differences in adult and neonatal physiology, babies may have a different risk for TACO. Calculate the dose by weight and observe the notes above.

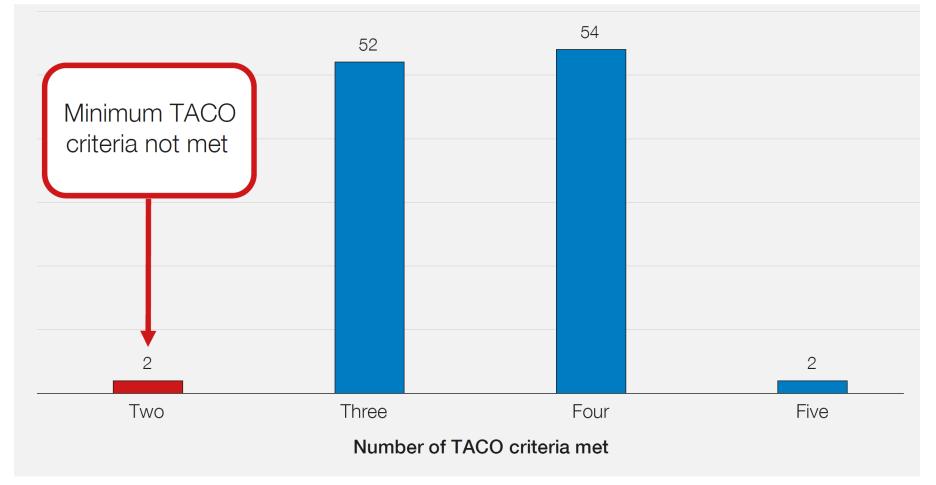
Number of surveillance criteria versus number of accepted TACO cases in 2019



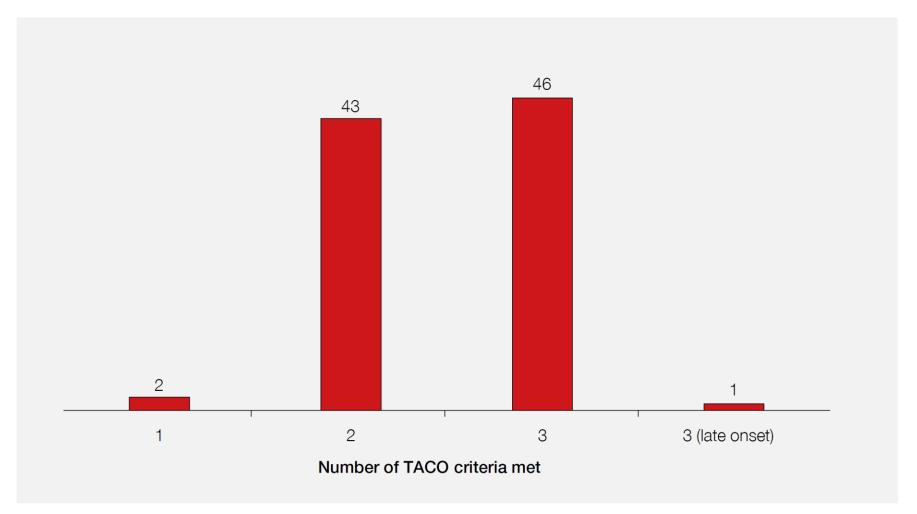
Use of the TACO checklist to identify patients at risk of TACO and implementation of mitigations - 2019



Analysis of reports by the revised surveillance diagnosis criteria (number of criteria versus number of accepted cases) - 2018



Analysis of reports by the revised surveillance diagnosis criteria - 2017





TACO assessment by three sets of reporting criteria - 2016

