<u>Platelet Transfusion: 2025 AABB</u> and ICTMG International Clinical Practice Guidelines

Ryan A. Metcalf, MD, CQA

Section Chief, Transfusion Medicine; Associate Professor, Pathology; U of Utah and ARUP Laboratories

JUNE 2025





Disclosures

- Chair, Association for the Advancement of Blood and Biotherapies (AABB) Clinical Transfusion Medicine Committee
- Scientific advising, Werfen
- Unrestricted education grants: Octapharma, Werfen, Haemonetics, Hemosonics
- Co-inventor, Intelvia data visualization software





What are Platelet Components?

- Apheresis vs. pooled
- <u>Contents</u>: ~300 billion platelets/bag, plasma or plasma + additive solution (PAS)
- <u>Volume</u>: ~300ml (varies)

AR P^{*}LABORATORIES

• <u>Storage</u>: room temp (20-24C), 5–7-day shelf life



https://www.mdpi.com/1422-0067/25/14/7779



Who Gets Platelet Transfusions?

- Hematology/Oncology
- Critical Illness
- Patients undergoing "minor" procedures (LP, CVC, IR, etc)
- Cardiovascular Surgery
- Trauma
- Transplant Surgery
- Neurosurgery
- Obstetrics
- Other specialties: General Surgery, Orthopedic Surgery, Surgical Oncology, Burn Surgery, Urology, and more
- General Internal Medicine
- Neonates





Platelet Use in the United States

	Blood centers	Hospitals	Combined 2023 totals	95% CI	2021 totals ^a	% change 2023–2021
Distributed						
Apheresis platelets	2,458	99	2,557	(2,429– 2,685)	2,422	5.6%
Whole blood-derived PLTs ^b	54	7	61	(24–98)	107	-43.1%
Total platelets	2,511	107	2,618	(2,483– 2,753)	2,528	3.6%
Transfused						
Apheresis platelets		2,160		(1,988– 2,332)	2,091	3.3%
Whole blood-derived PLTs ^b		55		(28-83)	80	-30.6%
Total platelets (includes directed units)		2,220		(2,040– 2,400)	2,175	2.1%

McDavid K, Lien R, Chavez Ortiz J, Bradley T, Luciano A, Griffin I, et al. Have we reached a new baseline for blood collection and transfusion in the United States? National Blood Collection and Utilization Survey,2023. Transfusion. 2025





Benefits and Harms of Platelet Transfusion

- Benefits (presumed)
 - »<u>Rationale</u>: in patients with thrombocytopenia (or platelet dysfunction), transfusion of platelets will increase platelet count and prevent/treat bleeding
- Harms (known)
 - » Transfusion reactions
 - Highest risk of any component
 - » Infectious disease transmission





JAMA | Special Communication

Platelet Transfusion 2025 AABB and ICTMG International Clinical Practice Guidelines

Ryan A. Metcalf, MD; Susan Nahirniak, MD; Gordon Guyatt, MD; Aarti Bathla, MPH; Sandra K. White, MS; Arwa Z. Al-Riyami, MD; Rachel C. Jug, MB, BCh, BAO; Ursula La Rocca, MD; Jeannie L. Callum, MD; Claudia S. Cohn, MD; Abe DeAnda, MD; Robert A. DeSimone, MD; Allan Dubon, MLS; Lise J. Estcourt, MB, BChir; Daniela C. Filipescu, MD; Mark K. Fung, MD; Ruchika Goel, MD; Aaron S. Hess, MD; Heather A. Hume, MD; Richard M. Kaufman, MD; Peter Kranke, MD; Vernon J. Louw, MBChB, MMed, PhD; Morten H. Møller, MD; Michael F. Murphy, MD; Jennifer A. Muszynski, MD; Cian J. O'Kelly, MD; Monica B. Pagano, MD; Gopal K. Patidar, MD; Katerina Pavenski, MD; Jacqueline N. Poston, MD; Nabiha H. Saifee, MD, PhD; Moritz Stolla, MD; Zbigniew M. Szczepiorkowski, MD, PhD; Aaron A.R. Tobian, MD; Raman Uberoi, MD; Jonathan Waters, MD; Brittney Williams, MD; Erica M. Wood, MD; Nicole D. Zantek, MD, PhD; Michelle P. Zeller, MD; Brenda J. Grossman, MD; Simon J. Stanworth, MD, DPhil



Guideline Panel Composition

- Steering Committee
- Patient partners
- Experts

AR P^{*}LABORATORIES

- » Transfusion Medicine
- » Hematology/Oncology
- » Pediatrics
- » Critical Care
- » Anesthesiology
- » Interventional Radiology
- » Cardiovascular Surgery
- » Neurosurgery
- Systematic Review and GRADE Methodologists
- Disclose, mitigate potential conflicts



Platelet Guidelines: Purpose and Scope

- Need for updated recommendations on clinical use of platelets
- <u>Out of scope</u>: component attributes, transfusion refractoriness, immune thrombocytopenias, patients with thrombocytopenia receiving anticoagulation, massive hemorrhage protocols, viscoelastic testing, and alternatives/adjuncts (e.g. antifibrinolytics)

Annals of Internal Medicine

CLINICAL GUIDELINE

Platelet Transfusion: A Clinical Practice Guideline From the AABB

Richard M. Kaufman, MD; Benjamin Djulbegovic, MD, PhD; Terry Gernsheimer, MD; Steven Kleinman, MD; Alan T. Tinmouth, MD; Kelley E. Capocelli, MD; Mark D. Cipolle, MD, PhD; Claudia S. Cohn, MD, PhD; Mark K. Fung, MD, PhD; Brenda J. Grossman, MD, MPH; Paul D. Mintz, MD; Barbara A. O'Malley, MD; Deborah A. Sesok-Pizzini, MD; Aryeh Shander, MD; Gary E. Stack, MD, PhD; Kathryn E. Webert, MD, MSc; Robert Weinstein, M^P `abu G. Welch, MD; Glenn J. Whitman, MD; Edward C. Wong, MD; and Aaron A.R. Tobian, MD, PhD



Original Articles

Guidance on Platelet Transfusion for Patients With Hypoproliferative Thrombocytopenia

See Editorial, pages 1–2

Susan Nahirniak ^{a,*}, Sherrill J. Slichter ^b, Susano Tanael ^c, Paolo Rebulla ^d, Katerina Pavenski ^e, Ralph Vassallo ^f, Mark Fung ^g, Rene Duquesnoy ^h, Chee-Loong Saw ⁱ, Simon Stanworth ^j, Alan Tinmouth ^k, Heather Hume ¹, Arjuna Ponnampalam ^m, Catherine Moltzan ⁿ, Brian Berry ^o,

Nadine Shehata ^p, for the International Collaboration for Transfusion Medicine Guidelines (ICTMG)





Restrictive vs. Liberal Red Blood Cell Transfusion Strategies: Randomized Trials



Figure. Restrictive and Liberal Transfusion Strategies Used Across Randomized Trials



Metcalf RA, Nahirniak S, Guyatt G, et al. Platelet Transfusion: 2025 AABB and ICTMG International Clinical Practice Guidelines. JAMA. 2025. doi:10.1001/jama.2025.7529.



B Platelet dose

	Population
Tinmouth et al, ¹⁸ 2004	НРТ
Sensebé et al, ²⁰ 2005	HPT
Heddle et al, ²¹ 2009	HPT
Slichter et al, ²² 2010	HPT



C Platelet transfusion





Early platelet transfusion No early platelet transfusion Platelet transfusion

Guideline Development Process

- Synthesize available evidence
 - » Systematic review*
 - Population, Intervention, Comparison, Outcome (PICO) questions
- GRADE methodology
- Formulate trustworthy clinical practice guidelines with recommendations

*Jug R, La Rocca U, Al-Riyami AZ, et al. The clinical use of platelet transfusions: A systematic literature review and meta-analysis on behalf of the International Collaboration on Transfusion Medicine Guidelines (ICTMG). Transfusion. 2025. doi:10.1111/trf.18277





Overarching PICO Question

• For patients in whom platelet transfusion might reduce bleeding, what is the impact of a restrictive versus a liberal platelet transfusion strategy on mortality and bleeding?





Relative and Absolute Effects of Clinical Interventions

- Relative impact tends to be <u>constant</u> across populations
- Absolute impact <u>varies</u> depending on baseline risk of the outcome
- Patients care about absolute impact (e.g., risk difference in events per 1000)
- <u>Hypothetical example</u>: mortality outcome

 » Risk ratio = 1.1 across populations
 » Baseline risk = 1%, 10%, 50%
 » How does baseline risk impact absolute risk difference? ...

ARTP^{*}



<u>Constant</u> Relative Risk; <u>Varying</u> Absolute Risk Difference

Relative vs Absolute Risks



Relative Risk — Absolute Risk Difference





Restrictive vs. Liberal: Constant Relative Effects?

 <u>Panel</u>: no compelling reason for relative effects to vary by population, but not certain
 » Analyzed overall population
 » Also, analyzed by patient group
 Facilitate making specific, practical recommendations





Analysis of Randomized Trials Across Clinical Populations

Outcome: Mortality







Analysis of Randomized Trials Across Clinical Populations

Total (95% CI) Total events Heterogeneity: Tau ² Test for overall effec Test for subgroup di	257 = 0.00; Chi² = 11.89 t: Z = 0.38 (P = 0.71)	18 (F = 4 (I	70 P = 0 P = 0	.85);).07)	, I² = 6	% Odds rat	tio ¦	0.01 0.1 1 10 avours Restrictive Favours I	
3	2.4 Cardiovascular surge timen 2018 Buttam 2019 Bubtotal (95% CI) Total events Belerogeneity: Tau ² = 0.00; Best for overall effect: Z = 0.4	19 1 20 Chi ² = 0.0		22 1 23 (P = 0.8	61 21 82 (8); I ² =	7.2% 0.5% 7.7% 0%	0.80 [0.38, 1.70] 2018 1.00 [0.06, 17.12] 2019 0.81 [0.39, 1.68]	•		
C	2.3 Spontaneous ICH Scharoglu 2016 Schotal (95% CI) Stal events Scherogeneity: Not applicab		93 93 5)	31 31	97 97	9.8% 9.8%	0.62 [0.33, 1.19] 2016 0.62 [0.33, 1.19]	•		
S	Curley 2019 Currar 2020 Curbotal (95% CI) Total events Curlerogeneity: Tau ² = 0.00; Curl for overall effect: Z = 1.8			48 8 74 (P = 0.8	326 22 653 (7); I ² =	18.4% 2.8% 27.8% 0%	0.64 [0.40, 1.03] 2019 1.21 [0.36, 4.08] 2019 0.69 [0.47, 1.01]	•		
d	 Interrogeneity: Tau² = 0.00; Interrogeneity: Tau² = 0.10; Interrogeneity: The second second	54 (P = 0.1	2)		eonate 78 40		0.68 [0.29, 1.57] 1993 0.30 [0.01, 7.47] 2013 1.03 [0.06, 16.55] 2017			
	Leformon 1978 Heckman 1997 Hebuila 1997 Himberg 2002 Himmouth 2004 Hedrich 2005 Heddle 2009 (SToP) Hichter 2010 (PLADO) Handt 2012 Hanworth 2013 (TOPPS) Hibtotal (95% CI) Hotal events	2 25 18 8 0 1 29 1 9 7 5 105	12 37 135 78 56 48 79 58 417 197 300 1417	3 29 9 5 0 1 28 1 7 5 4 92	81 55 48 87 61 432 194 298 1434	1.1% 4.4% 5.8% 3.0% 0.5% 4.1% 3.0% 2.3% 34.8%	0.93 [0.13, 6.66] 1978 0.86 [0.33, 2.26] 1997 1.90 [0.82, 4.40] 1997 1.74 [0.54, 5.56] 2002 Not estimable 2004 1.00 [0.06, 16.46] 2005 1.22 [0.64, 2.32] 2005 1.05 [0.06, 17.23] 2010 1.34 [0.49, 3.63] 2010 1.39 [0.43, 4.47] 2012 1.25 [0.33, 4.69] 2013 1.31 [0.93, 1.85]			

- Deviations from intended interventions
- lissing outcome data





Summary of Findings: Overall

Table 2. Summary of Findings of Overall Combined Studies and Population	onsa
---	------

		No. of events/No.	of patients (%)				
Outcomes	No. of participants (No. of trials)	Restrictive platelet strategy	Liberal platelet strategy	Risk differences (95% CI)	Odds ratio (95% CI)	Certainty of the evidence (GRADE)	Summary
Overall population							
All-cause mortality	4867 (20 RCTs)	255/2424 (10.5)	268/2443 (11.0)	-0.4% (-2.2% to 1.7%) 22 fewer to 17 more deaths per 1000	0.96 (0.78 to 1.18)	High	Restrictive probably results in little to no difference in all-cause mortality
WHO grades 2-4 bleeding or equivalent	2860 (11 RCTs)	589/1414 (41.7%)	544/1446 (37.6%)	6.8% (0.9% to 12.8%) 9 to 128 more patients per 1000 experiencing grade 2-4 bleeding with restrictive	1.32 (1.04 to 1.68)	Moderate ^b	Restrictive probably results in little or no difference in grade 2-4 bleeding or equivalent
WHO grades 3-4 bleeding or equivalent	3433 (11 RCTs)	148/1705 (8.7%)	146/1728 (8.4%)	0.3% (-1.9% to 3.0%) 19 fewer to 30 more patients per 1000 experiencing grade 3-4 bleeding with restrictive	1.04 (0.76 to 1.41)	Moderate ^b	Restrictive probably results in little or no difference in grade 3-4 bleeding





Lumbar Puncture Hematoma Incidence: Platelet Count <50x10³/µL







${\sf Evidence} \rightarrow {\sf Decision}$

- In the absence of clear benefit with liberal platelet transfusion strategies, favor the <u>unequivocal</u> benefits with restrictive strategies:
 - » Avoiding transfusion-related adverse events
 » Maintaining adequate platelet supply
 » Avoiding unnecessary healthcare expenditures





Population	Recommendation and guidance	Certainty of the evidence ^a	Summary justification
1. Strong recommendations			
1.1: Nonbleeding patients with hypoproliferative thrombocytopenia actively receiving chemotherapy or undergoing allogeneic stem cell transplant (SCT)	Platelet transfusion should be administered when the platelet count is <10 × 10 ³ /µL	Moderate	The data support no benefit with liberal strategies and a platelet count threshold <10 × 10 ³ /µL is practical for implementation
1.2: Preterm neonates without major bleeding	Platelet transfusion should be administered when the platelet count is <25 × 10 ³ /µL	High	The data support no benefits with liberal policies of <50 × 10 ³ /µL and the possibility of harm.
1.3: Patients undergoing lumbar puncture	Platelet transfusion should be administered when the platelet count is <20 × 10 ³ /µL	Moderate	A platelet count threshold <20 × 10 ³ /µL is practical for implementation, and minimizes need for platelet transfusion, while recognizing the extremely low event rate estimate
1.4: Patients with Dengue-related consumptive thrombocytopenia in the absence of major bleeding	No platelet transfusion	Moderate	The data support no benefits with use of platelets as prophylaxis and possibility of harm





Population	Recommendation and guidance	Certainty of the evidence ^a	Summary justification
1. Strong recommendations			
1.1: Nonbleeding patients with hypoproliferative thrombocytopenia actively receiving chemotherapy or undergoing allogeneic stem cell transplant (SCT)	Platelet transfusion should be administered when the platelet count is <10 × 10 ³ /µL	Moderate	The data support no benefit with liberal strategies and a platelet count threshold <10 × 10 ³ /µL is practical for implementation
1.2: Preterm neonates without major bleeding	Platelet transfusion should be administered when the platelet count is <25 × 10 ³ /µL	High	The data support no benefits with liberal policies of $<50 \times 10^3/\mu$ L and the possibility of harm.
1.3: Patients undergoing lumbar puncture	Platelet transfusion should be administered when the platelet count is <20 × 10 ³ /µL	Moderate	A platelet count threshold <20 × 10 ³ /µL is practical for implementation, and minimizes need for platelet transfusion, while recognizing the extremely low event rate estimate
1.4: Patients with Dengue-related consumptive thrombocytopenia in the absence of major bleeding	No platelet transfusion	Moderate	The data support no benefits with use of platelets as prophylaxis and possibility of harm
		1	





Population	Recommendation and guidance	Certainty of the evidence ^a	Summary justification
1. Strong recommendations			
1.1: Nonbleeding patients with hypoproliferative thrombocytopenia actively receiving chemotherapy or undergoing allogeneic stem cell transplant (SCT)	Platelet transfusion should be administered when the platelet count is <10 × 10 ³ /µL	Moderate	The data support no benefit with liberal strategies and a platelet count threshold $<10 \times 10^3/\mu$ L is practical for implementation
1.2: Preterm neonates without major bleeding	Platelet transfusion should be administered when the platelet count is <25 × 10 ³ /µL	High	The data support no benefits with liberal policies of <50 × 10 ³ /µL and the possibility of harm.
1.3: Patients undergoing lumbar puncture	Platelet transfusion should be administered when the platelet count is <20 × 10 ³ /µL	Moderate	A platelet count threshold <20 × 10 ³ /µL is practical for implementation, and minimizes need for platelet transfusion, while recognizing the extremely low event rate estimate
1.4: Patients with Dengue-related consumptive thrombocytopenia in the absence of major bleeding	No platelet transfusion	Moderate	The data support no benefits with use of platelets as prophylaxis and possibility of harm





Population	Recommendation and guidance	Certainty of the evidence ^a	Summary justification
1. Strong recommendations			
1.1: Nonbleeding patients with hypoproliferative thrombocytopenia actively receiving chemotherapy or undergoing allogeneic stem cell transplant (SCT)	Platelet transfusion should be administered when the platelet count is <10 × 10 ³ /µL	Moderate	The data support no benefit with liberal strategies and a platelet count threshold $<10 \times 10^3/\mu$ L is practical for implementation
1.2: Preterm neonates without major bleeding	Platelet transfusion should be administered when the platelet count is <25 × 10 ³ /µL	High	The data support no benefits with liberal policies of <50 × 10 ³ /µL and the possibility of harm.
1.3: Patients undergoing lumbar puncture	Platelet transfusion should be administered when the platelet count is <20 × 10 ³ /µL	Moderate	A platelet count threshold <20 × 10 ³ /µL is practical for implementation, and minimizes need for platelet transfusion, while recognizin the extremely low event rate estimate
1.4: Patients with Dengue-related consumptive thrombocytopenia in the absence of major bleeding	No platelet transfusion	Moderate	The data support no benefits with use of platelets as prophylaxis and possibility of harm





2. Conditional recommendations			
2.1: Nonbleeding adult patients with hypoproliferative thrombocytopenia undergoing autologous SCT or with aplastic anemia	No-prophylaxis strategy	Low to very low	The evidence includes subgroup analyses of bleeding outcomes in trials
2.2: Adult patients with consumptive thrombocytopenia due to critical illness (non-Dengue)	Platelet transfusion should be administered when the platelet count is <10 × 10 ³ /µL	Very low	Lack of direct randomized trial data; a platelet count threshold <10 × 10 ³ /µL is practical for implementation and minimizes requirements for platelet transfusions with attendant risks
2.3: Adult patients undergoing central venous catheter (CVC) placement at anatomic sites amenable to manual compression	Platelet transfusion should be administered when the platelet count is $<10 \times 10^3/\mu L$	Moderate to very low	A platelet count threshold $<10 \times 10^{3}/\mu$ L is practical for implementation and minimized need for platelet transfusion
2.4: Adult patients undergoing interventional radiology procedures	Platelet transfusion should be administered when the platelet count is $<20 \times 10^3/\mu$ L for low-risk procedures and $<50 \times 10^3/\mu$ L for high-risk procedures ⁷	Very low	A platelet count threshold <20 × 10 ³ /µL or <50 × 10 ³ /µl is practical for implementation; recognizes the varying degrees of bleeding risk by procedure

26





2. Conditional recommendations			
2.1: Nonbleeding adult patients with hypoproliferative thrombocytopenia undergoing autologous SCT or with aplastic anemia	No-prophylaxis strategy	Low to very low	The evidence includes subgroup analyses of bleeding outcomes in trials
2.2: Adult patients with consumptive thrombocytopenia due to critical illness (non-Dengue)	Platelet transfusion should be administered when the platelet count is <10 × 10 ³ /µL	Very low	Lack of direct randomized tria data; a platelet count threshold <10 × 10 ³ /µL is practical for implementation and minimizes requirements for platelet transfusions with attendant risks
2.3: Adult patients undergoing central venous catheter (CVC) placement at anatomic sites amenable to manual compression	Platelet transfusion should be administered when the platelet count is $<10 \times 10^3/\mu L$	Moderate to very low	A platelet count threshold $<10 \times 10^{3}/\mu$ L is practical for implementation and minimize need for platelet transfusion
2.4: Adult patients undergoing interventional radiology procedures	Platelet transfusion should be administered when the platelet count is $<20 \times 10^3/\mu$ L for low-risk procedures and $<50 \times 10^3/\mu$ L for high-risk procedures ⁷	Very low	A platelet count threshold <20 × 10 ³ /µL or <50 × 10 ³ /µ is practical for implementation; recognizes the varying degrees of bleeding risk by procedure





2. Conditional recommendations			
2.1: Nonbleeding adult patients with hypoproliferative thrombocytopenia undergoing autologous SCT or with aplastic anemia	No-prophylaxis strategy	Low to very low	The evidence includes subgroup analyses of bleeding outcomes in trials
2.2: Adult patients with consumptive thrombocytopenia due to critical illness (non-Dengue)	Platelet transfusion should be administered when the platelet count is <10 × 10 ³ /µL	Very low	Lack of direct randomized trial data; a platelet count threshold <10 × 10 ³ /µL is practical for implementation and minimizes requirements for platelet transfusions with attendant risks
2.3: Adult patients undergoing central venous catheter (CVC) placement at anatomic sites amenable to manual compression	Platelet transfusion should be administered when the platelet count is <10 × 10 ³ /µL	Moderate to very low	A platelet count threshold <10 × 10 ³ /µL is practical for implementation and minimizes need for platelet transfusion
2.4: Adult patients undergoing interventional radiology procedures	Platelet transfusion should be administered when the platelet count is $<20 \times 10^3/\mu$ L for low-risk procedures and $<50 \times 10^3/\mu$ L for high-risk procedures ⁷	Very low	A platelet count threshold $<20 \times 10^{3}/\mu$ L or $<50 \times 10^{3}/\mu$ L is practical for implementation; recognizes the varying degrees of bleeding risk by procedure





2. Conditional recommendations			
2.1: Nonbleeding adult patients with hypoproliferative thrombocytopenia undergoing autologous SCT or with aplastic anemia	No-prophylaxis strategy	Low to very low	The evidence includes subgroup analyses of bleeding outcomes in trials
2.2: Adult patients with consumptive thrombocytopenia due to critical illness (non-Dengue)	Platelet transfusion should be administered when the platelet count is <10 × 10 ³ /µL	Very low	Lack of direct randomized trial data; a platelet count threshold <10 × 10 ³ /µL is practical for implementation and minimizes requirements for platelet transfusions with attendant risks
2.3: Adult patients undergoing central venous catheter (CVC) placement at anatomic sites amenable to manual compression	Platelet transfusion should be administered when the platelet count is <10 × 10 ³ /µL	Moderate to very low	A platelet count threshold $<10 \times 10^3/\mu$ L is practical for implementation and minimizes need for platelet transfusion
2.4: Adult patients undergoing interventional radiology procedures	Platelet transfusion should be administered when the platelet count is $<20 \times 10^3/\mu$ L for low-risk procedures and $<50 \times 10^3/\mu$ L for high-risk procedures ⁷	Very low	A platelet count threshold <20 × 10 ³ /µL or <50 × 10 ³ /µL is practical for implementation; recognizes the varying degrees of bleeding risk by procedure





Conditional Recommendations (Continued)

2.5: Adult patients undergoing major nonneuraxial surgery	Platelet transfusion should be administered when the platelet count is <50 × 10 ³ /µL	Very low	A platelet count threshold <50 × 10 ³ /µL is practical for implementation; recognizes the degree of potential risk of severe bleeding for these procedures
2.6: Nonthrombocytopenic patients undergoing cardiovascular surgery in the absence of major hemorrhage, including those receiving cardiopulmonary bypass	No platelet transfusion	Very low	The limited data available support no benefit with use of platelets
2.7: Adult patients with spontaneous or traumatic, nonoperative intracranial hemorrhage with platelet counts >100 × $10^3/\mu$ L, including those receiving antiplatelet agents	No platelet transfusion	Low to very low	The limited data available support no benefit with use of platelets and the possibility of harm





Conditional Recommendations (Continued)

2.5: Adult patients undergoing major nonneuraxial surgery	Platelet transfusion should be administered when the platelet count is $<50 \times 10^3/\mu L$	Very low	A platelet count threshold <50 × 10 ³ /µL is practical for implementation; recognizes the degree of potential risk of severe bleeding for these procedures
2.6: Nonthrombocytopenic patients undergoing cardiovascular surgery in the absence of major hemorrhage, including those receiving cardiopulmonary bypass	No platelet transfusion	Very low	The limited data available support no benefit with use of platelets
2.7: Adult patients with spontaneous or traumatic, nonoperative intracranial hemorrhage with platelet counts >100 × 10 ³ /µL, including those receiving antiplatelet agents	No platelet transfusion	Low to very low	The limited data available support no benefit with use of platelets and the possibility of harm

31





Conditional Recommendations (Continued)

2.5: Adult patients undergoing major nonneuraxial surgery	Platelet transfusion should be administered when the platelet count is $<50 \times 10^3/\mu L$	Very low	A platelet count threshold <50 × 10 ³ /µL is practical for implementation; recognizes the degree of potential risk of severe bleeding for these procedures
2.6: Nonthrombocytopenic patients undergoing cardiovascular surgery in the absence of major hemorrhage, including those receiving cardiopulmonary bypass	No platelet transfusion	Very low	The limited data available support no benefit with use of platelets
2.7: Adult patients with spontaneous or traumatic, nonoperative intracranial hemorrhage with platelet counts >100 × 10 ³ /µL, including those receiving antiplatelet agents	No platelet transfusion	Low to very low	The limited data available support no benefit with use of platelets and the possibility of harm





Good Practice Statement

- The panel considered it good clinical practice to also consider symptoms, signs, other laboratory parameters, bleeding history, medications, patients' values and preferences, alternative therapies, and overall clinical context when decided to perform a platelet transfusion on a particular patient.
- It is possible that this guideline, although not intended for legal proceedings but rather as a guide for patient care, may reassure clinicians contemplating not administering unnecessary platelet transfusions whose behavior may be influenced by worries about litigation.





Overall Message of the Guideline

- Advocates for restrictive platelet transfusion strategies with practical recommendations for implementation
- Pattern of evidence across populations
- No clear evidence of harm using restrictive strategies
- Benefits of restrictive strategies:
 - » Minimizing transfusion-related adverse events
 - » Maintaining adequate platelet supply for situations more likely to yield important benefit (e.g., major bleeding)
 - » Reducing healthcare expenditures





Next Steps: Implementation

- Effective implementation expected to reduce unnecessary platelet transfusions
- Meet with key stakeholder groups
- Updated local guidelines
- Dissemination, education underway
- Updated order set design ightarrow
- Prospectively review orders (as possible)
- Clinical Decision Support

telet Product Re	quest: 1 Units	✓ <u>A</u> ccept	X <u>C</u> ancel	Link Order	- Rer
Priority:	Routine STAT				
Prepare Platelets:	1 Units	1 Units 2 Units	3 Units		
Reference Links:	Clinical Guidelines fo	r Blood Transfusion	in Adults		
Transfusion Ind	ications: Non-bleeding patient ac transplant: platelet coun		notherapy or	allogeneic ste	em cell
	Consumptive thrombocytopenia without major bleeding: platelet count <10.000/ul				
	Central venous catheter placement (internal jugular or femoral vein): platelet count <10,000/ul				
	Undergoing lumbar pund	cture: platelet count	<20,000/ul		
	Interventional radiology	(low-risk procedure)): platelet cou	nt <20,000/ul	
	Major surgery or interventional radiology (high-risk procedure): platelet count <50,000/ul				
	Neurosurgical intervention or active intracranial hemorrhage: platelet count <100,000/ul				
	Active major bleeding	Other (comment red	quired)		
Date Needed:					
Location to be t	ransfused:				
	Inpatient Transfusion	Huntsman Infusion	South Jorda	n Infusion	
	Farmington Infusion S	ugarhouse Infusion	Non-U of U	Infusion Cen	ter
	Operating Room U of	U Other			
Continuous Infu	sion 1/2 platelet q4hr. Cal Yes No	I Blood Bank for ap	proval		
Comments:	€ 🕹 🛃 🖓	2 🔸 Insert Sm	artText 📑	⇔ → ∕ ₄	-
	100% 👻	I L		1	I





Thank You Platelet Guideline Panel

AABB, ICTMG, and other partner organizations

Steering Committee:

- Ryan Metcalf
- Susan Nahirniak
- Gordon Guyatt
- Aarti Bathla
- Brenda Grossman
- Simon Stanworth

Patient Partners:

• Allan Dubon

• Manjusha Pawagi

Panel Members:

- Sandra White
- Arwa Al Riyami
- Rachel Jug
- Ursula La Rocca
- Claudia Cohn
- Abe DeAnda
- Robert DeSimone
- Lise Estcourt
- Daniela Filipescu
- Ruchika Goel
- Aaron Hess
- Heather Hume
- Nabiha Saifee
- Richard Kaufman
- Peter Kranke
- Vernon Louw

- Morten Moeller
- Michael Murphy
- Cian O'Kelly
- Monica Pagano
- Gopal Patidar
- Katerina Pavenski
- Jacqueline Poston
- Moritz Stolla
- Ziggy Szczepiorkowski
- Aaron Tobian
- Raman Uberoi
- Jonathan Waters
- Brittney Williams
- Erica Wood
- Nicole Zantek

