



NAC ENDORSEMENT WITH CAVEATS:

ICTMG Guidance on RBC Specifications for Patients with Hemoglobinopathies

A Joint Endorsement with the Canadian Haemoglobinopathy Association (CanHaem)



ENDORSEMENT SUBCOMMITTEE

**Endorsement Subcommittee and
Review Working Group Members:**

Andrew Shih, MD; Chair (NAC)
Jennifer Fesser, MD (NAC)
Charles Musuka, MD (NAC)
Kathryn Webert, MD (NAC)
Susan Nahirniak, MD (NAC)
Douglas Morrison, MD (NAC)
Alan Tinmouth, MD (NAC)
Sarah Patterson MD, (CanHaem)

NAC Chair:

Andrew Shih, MD, FRCPC, DRCPSC, MSc

Provincial Ministry Representative:

Madeleine McKay (NS)

NAC Coordinator:

Kendra Stuart

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Patients with hemoglobinopathies, including sickle cell disease (SCD) and beta-thalassemia often require red blood cell (RBC) transfusion therapy, to treat and prevent life-threatening complications. However, alloimmunization and associated hemolytic transfusion reactions are well-documented challenges with potentially life-threatening consequences. Prophylactically choosing matched RBC units for transfusion prevents alloimmunization and fresher units have been suggested to provide benefit, but international consensus was lacking given the conflicting balance of patient benefit and RBC availability. The International Collaboration for Transfusion Medicine Guidelines (ICTMG) has updated their 2018 guidance through a comprehensive literature review by a multidisciplinary international expert team and published their recommendations in 2025.

NAC originally reviewed and endorsed the 2018 guideline at the request of ICTMG, where the update led to review by NAC. Three members of NAC and one member nominated by the Canadian Hemoglobinopathy Association (CanHaem) independently utilized the AGREEII (Appraisal of Guidelines for Research and Evaluation) tool to assess the methodological rigour and quality in which the guideline was developed. The guideline achieved scores deemed acceptable by NAC membership as per the [*NAC Guideline Endorsement Framework*](#).

NAC endorses the newest ICTMG guidance on RBC specifications for patients with hemoglobinopathies, with caveats. NAC has also engaged the CanHaem Board of Directors, who have provided a joint endorsement. In the updated 2025 ICTMG guideline, the panel was unable to make a recommendation for transfusion of more extensively antigen matched RBCs in patients with SCD or thalassemia who have one or more alloantibodies based on methodological limitations of the evidence and concerns regarding implementation internationally. The previous 2018 guideline recommendations stated that patients (SCD or thalassemia) with alloantibodies should probably receive RBCs with more extensive antigen matching (low quality evidence, weak recommendation). In Canada, many centres currently practice to the standard in the 2018 guideline which is also in line with CanHaem and American Society of Hematology recommendations.

NAC recommends that where possible extended phenotype matching should be provided to alloimmunized hemoglobinopathy patients in Canada, however this should not delay transfusion of RBCs in critical situations. When appropriate, there should be early coordination with the Canadian Blood Services Rare Blood Program in the identification of complex antigen requirements.

Strengths of this review include discussion of alternatives, the continued involvement of patient representatives, and considerations around implementation. A procedure for updating the guideline would improve future versions. As discussed in the ICTMG guideline, NAC and CanHaem endorse systems that allow for antibody history to be shared between transfusion services and jurisdictions (including registries) as well as therapies with curative intent to reduce ongoing transfusion needs.



Guideline Citation: Wolf J, Blais-Normandin I, Bathla A, Keshavarz H, Chou ST, Al-Riyami AZ, Josephson CD, Massey E, Hume H A, Pendergrast J, Denomme G, Grubovic Rastvorceva RM, Trompeter S, Stanworth SJ. Red cell specifications for blood group matching in patients with haemoglobinopathies: An updated systematic review and clinical practice guideline from the International Collaboration for Transfusion Medicine Guidelines. *Br J Haematol.* 2025; 206(1): 94–108.

ICTMG Webpage Link: <https://www.ictmg.org/hemoglobinopathies-1>