Name of Policy: Special Circumstances for Selection of Blood and Blood Components Policy Number: 3364-108-303 Approving Officer: Senior Hospital Administrator Director, Blood Transfusion Service Responsible Agent: Blood Transfusion Service Supervisor Administrative Director, Lab Scope: University of Toledo Medical Center Pathology/Laboratory – Blood Bank	UTOLEDO HEALTH Effective date: ~~03/01/2025~~ Original effective date: 10/1986
Key words: Selection of Blood, Special Requirements, Irradiated, CMV, Washed, Sickle-Cell	

☐	New policy proposal	☒	Minor/technical revision of existing policy
☐	Major revision of existing policy	☐	Reaffirmation of existing policy

(A) ~~(A)~~ Policy Statement

The Blood Transfusion Service has established guidelines for the transfusion of blood and blood components under special circumstances and monitors the appropriate use of special blood and blood components in conjunction with the Blood Utilization Review Committee.

(B) ~~(B)~~ Purpose of Policy

To provide safe and appropriate blood and blood components with a minimum turnaround time for patients with special blood requirements.

(C) ~~(C)~~ Procedure

(1) ~~Section 1:~~ Use of Leukocyte-reduced, Irradiated or CMV negative Red Cell and Platelet Products

(a) Leukocyte-reduced RBC by pre-storage filtration are used universally at UTMC. Platelets, Pheresis Leukocyte reduced by pre-storage filtration are also used universally. Pathogen Reduced Platelets, Pheresis treated by the INTERCEPT system are equivalent to irradiated.

(b) Patients requiring CMV negative blood products shall receive pre-storage Leuko-reduced Red Blood Cells or Platelets, Pheresis. Leuko-reduced blood products are considered CMV-safe.

~~1.~~(c) Orders for irradiated red cells or platelets are initiated by the patient's attending physician.

(i) The following irradiation guidelines for Red blood cells and Platelets have been approved by Lab/Blood Utilization Review Committee. ~~Blood Product Irradiation should be considered for the following patients~~ for the prevention of Transfusion-Associated Graft vs. Host Disease (TA-GVHD):~~.~~

- (a) Patients who have had hematopoietic stem cell transplant (allogeneic or autologous) or are candidates for HSCT, including those with aplastic anemia, thalassemia and certain malignancies
- (b) Patients with known or suspected congenital immunodeficiency syndromes involving T-cell function (e.g. severe combined immunodeficiency, Wiskott-Aldrich syndrome)
- (c) Fetuses receiving intrauterine transfusion and any subsequent tranfusions
- (d) Neonates receiving exchange transfusion
- (e) Premature newborns
- (f) Hematologic malignancies (Acute leukemia, Hodgkin's disease, Non-Hodgkin's lymphoma, etc.)
- (g) Patients with solid tumors
  - i. Neuroblastoma
  - ii. Glioblastoma
- (h) Patients receiving directed donations from blood relatives
- (i) Patients receiving HLA-matched or crossmatched platelets
- (j) Patients undergoing Fludaribine therapy
- (k) Granulocyte concentrates

(ii) Consult the Medical Director of Blood Transfusion Service or O.D. when special orders are received for patients not meeting UTMC guidelines. It is not necessary to specially treat fresh frozen plasma and cryoprecipitate as these components contain rare cellular elements.

~~2.~~(d) ~~Leukocyte-reduced RBC by pre-storage filtration are used universally at UTMC. Platelets, Pheresis Leukocyte reduced by pre-storage filtration are also used universally. Pathogen Reduced Platelets, Pheresis treated by the INTERCEPT system are equivalent to irradiated. Unlicensed non-standard products distributed by ARC as non-leukocyte-reduced must be transfused with a special leukocyte-reduction filter supplied by ARC.~~

~~3. Patients requiring CMV-negative blood products shall receive pre-storage Leuko-reduced Red Blood Cells or Platelets, Pheresis. When pre-storage Leuko-reduced products are not available, RBC and Platelet components must be transfused using a leukocyte reduction filter available through the American Red Cross.~~

~~4.~~(e) IBM washed Red Blood Cells may be used for patients with a documented history of febrile transfusion reactions ~~even to leukocyte-reduced RBC by filtration~~ or patients with documented Immunoglobulin A deficiency. Notify the BTS Medical Director when washed RBC are requested for any patient.

~~5.~~(f) After the initial Special order for transfusion, the Blood Transfusion Service is responsible for special orders on all subsequent transfusions at UTMC unless the order is discontinued, in writing, by the attending physician or by order of the BTS Medical Director. ~~-~~The Patient Records in the BBIS must contain the appropriate special instructions.

(2) ~~Section 2: -~~Special Circumstances

(a) Sickle-cell Patients~~—~~

(i) It is not required to test for Hemoglobin S in donor blood transfused to Sickle cell patients unless the volume of the individual donor unit constitutes a massive transfusion, as in children less than 20 kg. Orders for phenotype-matched donor blood must be approved by the BTS Medical Director.

(ii) Sickle-Cell Patients requiring an exchange transfusion of four (4) or more units of LRBCs will be provided the freshest possible, sickle cell negative LRBCs.

(D) References

(1) AABB Standards for Blood Banks and Transfusion Services, current edition.

(2) Gresik, MV. "Transfusion-associated graft-versus-host disease". Pediatric pathology and Laboratory Medicine, 16: 137-142, 1996.

(3) Luban, NLC and DePalma, L. "Transfusion-associated graft-versus-host disease in the neonate: Expanding the spectrum of the disease" (editorial). Transfusion 36: 101-103, 1996

(4) Webb, IJ, Anderson, KC, Transfusion-associated Graft vs. Host disease. In Popovsky , MA ed. Transfusion Reactions AABB Press, 1996: 185-204.

(5) Shivdasani, RA, Anderson, KC, Graft vs. Host disease, In Petz, LD et al. Eds. Clinical Practice of Transfusion Medicine, Churchill Livingstone. 1996; 931-946.

(6) Ohto, H, Anderson, KC, Post-transfusion graft vs. host disease in Japanese newborns, Transfusion 36:117-123, 1996

(7) Webb, DK, Irradiation in the prevention of transfusion-associated Graft vs. Host disease (review). Archives of Disease in Childhood, 73(5): 388-389, 1995

(8) Anderson, KC, Goodnough, LT, Sayers, M Pisciotto, PT, Kurtz, SR, et al. Variation in blood component irradiation practice: Implications for prevention of transfusion associated Graft vs host disease. Blood 77(10): 2096-2102, 1991.

(9) Ferrara, JLM, Deeg, HJ, Graft vs. Host disease. NEJM 324(10):667-0673, 1991.

(10) INTERCEPT Blood System for Platelets. (Cerus Corporation, Concord, CA, July 17,2018)

Approved by:	Policies Superseded by This Policy: • *None*
_____ Lauren Stanoszek, M.D. Assistant Professor Director, Blood Transfusion Service	Initial effective date: 10/1986
_____ Date	All Review/Revision Dates: 6/96 1/98 3/99 8/00 1/03 1/05 1/2008 6/9/2008 3/22/2011 3/01/2013 9/01/2013 3/2/2015 3/1/2017 3/1/2019 3/1/2021 3/20/2023 ~~03/01/2025~~
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~~1.~~

~~Approved by:~~	~~Review/Revision Date:~~ ~~6/96~~ ~~6/9/2008~~ ~~1/98~~ ~~3/22/2011~~ ~~3/99~~ ~~3/01/2013~~ ~~8/00~~ ~~9/01/2013~~ ~~1/03~~ ~~3/2/2015~~ ~~1/05~~ ~~3/1/2017~~ ~~1/2008~~ ~~3/1/2019~~ ~~3/1/2021~~ ~~3/20/2023~~
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Policies Superseded by This Policy:

It is the responsibility of the reader to verify with the responsible agent that this is the most current version of the policy.

Reference:

1. AABB Standards for Blood Banks and Transfusion Services, current edition.
2. Gresik, MV. "Transfusion-associated graft-versus-host disease". Pediatric pathology and Laboratory Medicine, 16: 137-142, 1996.
3. Luban, NLC and DePalma, L. "Transfusion-associated graft-versus-host disease in the neonate: Expanding the spectrum of the disease" (editorial). Transfusion 36: 101-103, 1996
4. Webb, IJ, Anderson, KC, Transfusion-associated Graft vs. Host disease. In Popovsky , MA ed. Transfusion Reactions AABB Press, 1996: 185-204.
5. Shivdasani, RA, Anderson, KC, Graft vs. Host disease, In Petz, LD et al. Eds. Clinical Practice of Transfusion Medicine, Churchill Livingstone. 1996; 931-946.
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7. Webb, DK, Irradiation in the prevention of transfusion-associated Graft vs. Host disease (review). Archives of Disease in Childhood, 73(5): 388-389, 1995
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9. Ferrara, JLM, Deeg, HJ, Graft vs. Host disease. NEJM 324(10):667-0673, 1991.
10. INTERCEPT Blood System for Platelets. (Cerus Corporation, Concord, CA, July 17,2018)