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## General Information

|   |              |
|---|--------------|
| Office of the President .....                                     | 212.570.3100 |
| Autologous/Directed Donors – Special Collections Department ..... | 800.439.6876 |
| Accounting  |              |
| Customer Inquiries .....  | 516.478.5223 |
| Credit Manager .....  | 516.478.5222 |
| Fax .....   | 516.478.5213 |
| Blood Screening Services .....                                    | 516.478.5570 |
| Chief Medical Officer .....                                       | 212.570.3002 |
| Clinical Services .....   | 800.842.2566 |
| Clinical Apheresis Services .....                                 | 914.784.4545 |
| Stem Cell Laboratory Services .....                               | 212.570.3488 |
| Contract Administration .....                                     | 212.570.3318 |
| Customer Service .....  | 800.411.9851 |
| Donor Counseling Services (Regional Services) .....               | 800.688.0900 |
| Educational Services – Fellowship Program, Continuing Ed. ....    | 212.570.3277 |
| Frozen Blood Laboratory .....                                     | 718.752.4634 |
| Hemophilia Services .....   | 516.478.5046 |
| HLA Testing Laboratory .....                                      | 212.570.3097 |
| Laboratory of Immunohematology – New York Blood Center .....      | 718.752.4771 |
| Long Island Blood Services .....                                  | 516.478.5160 |
| Legal Counsel .....   | 212.570.3009 |
| Lindsey F. Kimball Research Institute .....                       | 212.570.3034 |
| Main Telephone Number .....                                       | 212.570.3000 |
| National Bone Marrow/Stem Cell Donor Program .....                | 800.692.5663 |
| National Cord Blood Program .....                                 | 866.767.6227 |
| Perioperative Autologous Transfusion Services (PAT) .....         | 800.235.5728 |
| Quality Assurance – Vice President .....                          | 646.812.9071 |
| Regulatory Affairs .....  | 212.570.3045 |

|   |  |
|---|--|
| Special Donor Services  | 212.570.3327   |
| Questions About Donation Eligibility and Test Results (Regional Services) | 800.688.0900   |
| Volunteer Blood Donation Appointments                                     | 800.933.2566   |
| Website   | <a href="http://www.nybloodcenter.org">www.nybloodcenter.org</a> |

### Brooklyn / Staten Island Blood Services

|                              |              |
|------------------------------|--------------|
| Administration               | 718.797.7800 |
| Donor Recruitment            | 718.797.7804 |
| Hospital Services Department | 212.468.2100 |
| Medical Affairs              | 718.797.7800 |
| Donor Collections Department | 718.797.7814 |
| Volunteer Information        | 718.797.7800 |

### Hudson Valley Blood Services (Including the Bronx)

|   |                       |
|---|-----------------------|
| Administration  | 914.784.4600          |
| Donor Recruitment   | 800.843.2566          |
| Hospital Services Department  | 914.784.4650          |
| Medical Affairs   | 914.784.4600          |
| Donor Collections Department  | 914.784.4619          |
| Volunteer Information for Bronx, Westchester, and Rockland Counties               | 800.843.2566 ext 4635 |
| Volunteer Information for Putnam, Dutchess, Orange, Sullivan, and Ulster Counties | 800.843.2566 ext 4675 |

### Long Island Blood Services (Including Queens)

|                              |                   |
|------------------------------|-------------------|
| Administration               | 516.478.5000/5008 |
| Donor Recruitment            | 516.478.5100      |
| Hospital Services Department | 516.478.5150      |
| Medical Affairs              | 516.478.5062      |
| Donor Collections Department | 516.478.5118      |
| Volunteer Information        | 516.478.5012      |

### New Jersey Blood Services

|                              |              |
|------------------------------|--------------|
| Administration               | 732.220.7013 |
| Donor Recruitment            | 732.220.7070 |
| Hospital Services Department | 732.220.7080 |
| Medical Affairs              | 732.220.7028 |
| Donor Collections Department | 732.220.7026 |
| Volunteer Information        | 732.220.7004 |

### New York Blood Services

|                              |              |
|------------------------------|--------------|
| Administration               | 646.812.9000 |
| Donor Recruitment            | 646.812.9044 |
| Hospital Services Department | 718.752.4700 |
| Medical Affairs              | 212.570.3199 |
| Donor Collections Department | 646.812.9188 |
| Volunteer Information        | 646.812.9111 |

## Packed Red Blood Cells

Red blood cells, or packed red blood cells, (RBC) are prepared from whole blood collected in one of several approved anticoagulant solutions. The usual 250-300ml unit of red blood cells (RBC) has a hematocrit of 65-80%, with some platelets and/or white cells removed during processing. RBC is the component of choice for patients with a symptomatic deficit of oxygen-carrying capacity. RBC may also be used to help restore cells lost following significant hemorrhage. The removal of plasma reduces the risk of adverse reactions.

| REFERENCE CODE | DESCRIPTION                           | EXPIRATION             |
|----------------|---------------------------------------|------------------------|
| 04050          | CPD Red Blood Cells                   | 21 Days                |
| 04060          | CPDA-1 Red Blood Cells                | 35 Days                |
| 04210          | AS-1 Red Blood Cells                  | 42 Days                |
| 04230          | AS-3 Red Blood Cells                  |                        |
| 04241          | AS-3 Red Blood Cells Pheresis (Bag 1) |                        |
| 04250          | AS-5 Red Blood Cells                  |                        |
| 04261          | AS-3 Red Blood Cells Pheresis (Bag 2) |                        |
| 04271          | AS-3 RBC Pheresis (ACDA) (Bag 1)      |                        |
| 04281          | AS-3 RBC Pheresis (ACDA) (Bag 2)      |                        |
| 04900          | Washed Red Blood Cells                | 24 Hours after washing |
| 04941          | Washed RBC, Pheresis (ACDA) (Bag 1)   |                        |
| 04961          | Washed RBC, Pheresis (ACDA) (Bag 2)   |                        |

## Red Blood Cells, Leukocytes Reduced

Leukocytes reduced red blood cells are cells that have been filtered to remove many of the leukocytes in the unit. Leukocytes are removed using filters to obtain less than  $5.0 \times 10^6$  residual leukocytes per unit. Leukocyte-reduced RBCs are offered in two configurations – single standard bag alone or with two or four pediatric packs attached. This product is used to reduce the risk of nonhemolytic, febrile transfusion reactions for those who have had febrile reactions following transfusion. Its use has also been shown to be effective in reducing platelet alloimmunization and Cytomegalovirus (CMV) transmission. Leukocyte reduced red blood cells can also be used when CMV negative RBCs are unavailable. Pediatric packs are appropriate for use in infants.

| REFERENCE CODE | DESCRIPTION   | EXPIRATION |
|----------------|---|------------|
| 04350          | CPD Red Blood Cells Leukocytes Reduced              | 21 Days    |
| 04380          | CP2D Red Blood Cells, Leukocytes reduced            |            |
| 04360          | CPDA-1 Red Blood Cells, Leukocytes reduced          | 35 Days    |
| 04710          | AS-1 Red Blood Cells, Leukocytes reduced            | 42 Days    |
| 03311          | AS-1 Red Blood Cells Pheresis LR ( Bag 2)           |            |
| 03820          | AS-1 Red Blood Cells Pheresis LR (Bag 1)            |            |
| 04730          | AS-3 Red Blood Cells Leukocytes Reduced             |            |
| 04741          | AS-3 RBC Pheresis Leukocytes Reduced (Bag 1)        |            |
| 04750          | AS-5 Red Blood Cells, Leukocyte Reduced             |            |
| 04761          |   |            |
| 04771          | AS-3 RBC Pheresis (ACDA) Leukocytes reduced (Bag 1) |            |
| 04791          | AS-3 RBC Pheresis (ACDA) Leukocytes reduced (Bag 2) |            |
| 00030          | 2 pediatric packs, attached                         | N/A        |
| 00035          | 4 pediatric packs, attached                         | N/A        |

## Red Blood Cells, Irradiated

Red blood cells are irradiated to inactivate any lymphocytes that are present. Severely immunosuppressed patients who may develop graft-versus-host disease (GVHD) after transfusion of viable immunocompetent lymphocytes should receive irradiated red blood cells. Those at highest risk are those with congenital immunodeficiencies, transplant recipients, premature infants, fetuses receiving intrauterine transfusion, and those with aggressively treated neoplastic disease. Potassium levels may increase at rates higher than seen in non-irradiated red cells. This should be taken into account, depending on clinical circumstances.

| REFERENCE CODE | DESCRIPTION                             | EXPIRATION |
|----------------|---|------------|
| 05050          | CPD Red Blood Cells Irradiated          | 21 Days    |
| 05080          | CP2D Red Blood Cells Irradiated         |            |
| 05210          | AS-1 Red Blood Cells Irradiated         | 42 Days    |
| 05230          | AS-3 Red Blood Cells Irradiated         |            |
| 05241          | AS-3 RBC Pheresis Irradiated (Bag 1)    |            |
| 05250          | AS-5 Red Blood Cells Irradiated         |            |
| 05261          | AS-3 RBC Pheresis Irradiated (Bag 2)    |            |
| 05271          | AS-3 RBC PHER (ACDA) Irradiated (Bag 1) |            |
| 05281          | AS-3 RBC PHER (ACDA) Irradiated (Bag 2) |            |

## Red Blood Cells, Leukocytes Reduced, Irradiated

Previous product descriptions apply.

| REFERENCE CODE | DESCRIPTION   | EXPIRATION             |
|----------------|---|------------------------|
| 05350          | CPD RBC Leukocytes reduced Irradiated (IRR)               | 21 Days                |
| 05380          | CP2D RBC Leukocytes reduced Irradiated                    |                        |
| 05360          | CPDA-1 RBC Leukocytes reduced (IRR)                       | 35 Days                |
| 05710          | AS-1 RBC Leukocytes reduced Irradiated                    | 42 Days                |
| 05730          | AS-3 RBC Leukocytes reduced Irradiated                    |                        |
| 05741          | AS-3 RBC Pheresis Leukocytes reduced Irradiated (Bag 1)   |                        |
| 05750          | AS-5 RBC Leukocytes reduced Irradiated                    |                        |
| 05761          | AS-3 RBC Pheresis Leukocytes reduced Irradiated (Bag 2)   |                        |
| 05771          | AS-3 RBC Pheresis(ACDA) Leukocytes reduced IRR (Bag 1)    |                        |
| 05781          | AS-3 RBC Pheresis (ACDA) Leukocytes reduced IRR (Bag 2)   |                        |
| 05900          | RBC Washed Irradiated                                     |                        |
| 05941          | AS-3 RBC PHR Washed Irradiated (Bag 1)                    | 24 hours after washing |
| 05961          | AS-3 RBC PHR Washed Irradiated (Bag 2)                    |                        |
| 06000          | RBC Washed Leukocytes Reduced                             |                        |
| 06041          | AS-3 RBC PHR Washed Leukocytes reduced (Bag 1)            |                        |
| 06061          | AS-3 RBC PHR Washed Leukocytes reduced (Bag 2)            |                        |
| 06100          | RBC Washed Leukocytes reduced Irradiated                  |                        |
| 06141          | AS-3 RBC PHR Washed Leukocytes reduced Irradiated (Bag 1) |                        |
| 06161          | AS-3 RBC PHR Washed Leukocytes reduced Irradiated Bag 2)  |                        |

## Red Blood Cells, Frozen/Rejuvenated, Deglycerolized

Red blood cells, frozen/rejuvenated, deglycerolized are similar in function to liquid stored red blood cells. A unit contains at least 80% of the original red blood cells following the deglycerolization process. Virtually all plasma, platelets and leukocytes are removed from the unit. The frozen blood inventory is the ideal source for rare blood cells. Frozen blood is also useful for the storage of autologous red cells beyond the time limits of liquid storage. Frozen red blood cells are the preferred component for patients sensitized to IgA. Red Blood Cells, frozen along with leukocyte-reduced products obtained by filtration, are also indicated for patients sensitized to leukocyte and platelet antigens.

| REFERENCE CODE | DESCRIPTION  | EXPIRATION   |
|----------------|--|--|
| 06200          | RBC Frozen   | 10 years but must be transfused within 24 hours of thawing |
| 06211          | RBC Pheresis Frozen (Bag 1)  |  |
| 06251          | RBC Pheresis Frozen (Bag 2)  |  |
| 06300          | RBC Frozen Rejuvenated   |  |
| 06400          | RBC Deglycerolized   |  |
| 06401          | RBC Deglycerolized Divided   |  |
| 06411          | RBC Pheresis Deglycerolized (Bag 1)                                  |  |
| 06451          | RBC Pheresis Deglycerolized (Bag 2)                                  |  |
| 06500          | RBC Rejuvenated Deglycerolized                                       |  |
| 06780          | RBC Leukocyte Reduced Rejuvenated Frozen                             |  |
| 06800          | RBC Leukocyte Reduced Deglycerolized                                 |  |
| 06811          | RBC Pheresis Leukocyte Reduced Deglycerolized (Bag 1)                |  |
| 06861          | RBC Pheresis Leukocyte Reduced Deglycerolized (Bag 2)                |  |
| 06880          | RBC Leukocytes Reduced Rejuvenated Deglycerolized                    |  |
| 07200          | RBC Frozen Irradiated  |  |
| 07211          | RBC Pheresis Frozen Irradiated (Bag 1)                               |  |
| 07251          | RBC Pheresis Frozen Irradiated (Bag 2)                               |  |
| 07300          | RBC Frozen Rejuvenated Irradiated                                    |  |
| 07400          | RBC Deglycerolized Irradiated  |  |
| 07411          | RBC Pheresis Deglycerolized IRR (Bag 1)                              |  |
| 07451          | RBC Pheresis Deglycerolized IRR (Bag 2)                              |  |
| 07500          | RBC Rejuvenated Deglycerolized Irradiated                            |  |
| 07800          | RBC Leukocyte Reduced Deglycerolized Irradiated                      |  |
| 07841          | RBC Pheresis Leukocyte Reduced Deglycerolized Irradiated (Bag 1)     |  |
| 07851          | RBC Pheresis Leukocyte Reduced Deglycerolized Irradiated (Bag 2)     |  |
| 07880          | RBC Pheresis Leukocyte Reduced Rejuvenated Deglycerolized Irradiated |  |

## Red Blood Cells, Washed

Washing a unit of Red Blood Cells with sterile normal saline removes about 99% of plasma proteins, electrolytes and antibodies. Saline washed Red Blood Cells are indicated for patients with or for those who have allergic or febrile reactions to plasma components of the blood product. This product may be used in patients with antibodies to IgA or IgE immunoglobulins or thalassemic patients.

| REFERENCE CODE | DESCRIPTION  | EXPIRATION                                    |
|----------------|--|---|
| 04900          | RBC Washed   | Must be transfused within 24 hours of washing |
| 04941          | RBC Pheresis Washed (Bag 1)                          |   |
| 04961          | RBC Pheresis Washed (Bag 2)                          |   |
| 05900          | RBC Washed Irradiated                                |   |
| 05941          | AS-3 RBC Pheresis Washed Irradiated (Bag 1)          |   |
| 05961          | AS-3 RBC Pheresis Washed Irradiated (Bag 2)          |   |
| 06141          | AS-3 RBC Pheresis Washed Irrad. Leukoreduced (Bag 1) |   |
| 06161          | AS-3 RBC Pheresis Washed Irrad. Leukoreduced (Bag 2) |   |

## Red Blood Cells, CMV Negative

The product is a red blood cell that has been tested for Cytomegalovirus (CMV) and found to be negative. In the US, seropositivity for CMV varies from 40-90%, depending on geographic area. The risk of CMV infection from transfusion is greater in severely immunosuppressed patients who are CMV seronegative. These patients include recipients of bone marrow or solid organ transplants and premature infants whose mothers are CMV seronegative.

REFERENCE CODE: 40

## Red Blood Cells, Hgb S Negative

The product is a red blood cell that has been tested for Hemoglobin S (sickle cell- trait or disease) and found to be negative. About 0.1-0.2% of the African-American population born in the United States have sickle cell anemia and about 9% carry the trait, but have no clinical signs. Indications for transfusion of red blood cells lacking Hemoglobin S include patients with sickle cell disease, fetuses and infants, and patients at risk of developing severe hypoxemia or acidosis.

REFERENCE CODE: 50

## Whole Blood

Whole blood contains approximately 500ml of anticoagulated whole blood. The platelets and granulocytes are non-viable after a few days. Levels of labile clotting factors also decline with storage. Lymphocytes are viable and can cause Graft vs. Host Disease (GVHD). Whole blood provides oxygen-carrying capacity and blood volume expansion. Whole blood may be useful in bleeding patients who have lost in excess of 20% of total blood volume. Patients with chronic anemia who have a normal blood volume should receive red blood cells (packed RBCs).

| REFERENCE CODE | DESCRIPTION        | EXPIRATION |
|----------------|--------------------|------------|
| 00150          | CPD Whole Blood    | 21 Days    |
| 00180          | CP2D Whole Blood   |            |
| 00160          | CPDA-1 Whole Blood | 35 Days    |

## Whole Blood, Irradiated

A unit of Whole Blood is irradiated to inactivate any lymphocytes present. Severely immunosuppressed patients who may develop graft versus host diseases (GVHD) after transfusion of viable immunocompetent lymphocytes should receive irradiated blood. Recipients at highest risk are those with congenital immunodeficiencies, transplant recipients, premature infants, fetuses receiving intrauterine transfusion, and those with aggressively treated neoplastic disease. Potassium levels may increase at rates higher than seen in non-irradiated red cells.

| REFERENCE CODE | DESCRIPTION                   | EXPIRATION |
|----------------|-------------------------------|------------|
| 00250          | CPD Whole Blood Irradiated    | 21 Days    |
| 00280          | CP2D Whole Blood Irradiated   |            |
| 00260          | CPDA-1 Whole Blood Irradiated | 35 Days    |

## Whole Blood, CMV Negative

A unit of Whole Blood is tested for Cytomegalovirus (CMV) to determine its antibody status. In the US, seropositivity for CMV varies from 40-90%, depending on geographic area. The risk of CMV infection from transfusion is limited to severely immunosuppressed patients who are CMV seronegative. These patients include recipients of bone marrow or solid organ transplants, and premature infants whose mothers are CMV seronegative.

REFERENCE CODE: 40

## Whole Blood, Hgb S Negative

A unit of Whole Blood is tested for its antibody status for Hemoglobin S, which demonstrates sickle cell trait or disease. About 0.1-0.2% of African-Americans born in the United States have sickle cell anemia and about 9% carry the trait, but have no clinical signs. Indications for transfusion of whole blood cells lacking Hemoglobin S include patients with sickle cell disease, fetuses and infants, and patients at risk of developing severe hypoxemia or acidosis. Transfusing a patient with HgbS negative blood eliminates potential risk of intravascular sickling of red blood cells.

REFERENCE CODE: 50

## Platelet Concentrate

Platelet concentrate contains at least  $5.5 \times 10^{10}$  platelets in 50-70ml of plasma, and is prepared from individual units of whole blood by centrifugation. Platelet concentrates contain leukocytes which may transmit Cytomegalovirus (CMV), cause Graft vs. Host Disease (GVHD), and lead to alloimmunization and cause febrile transfusion reactions. Platelets are used to treat bleeding caused by thrombocytopenia or functionally abnormal platelets. Prophylactic administration of platelets may be useful in patients with rapidly declining or low platelet counts ( $10,000$  to  $20,000/\text{mm}^3$ ) secondary to cancer or chemotherapy.

| REFERENCE CODE | DESCRIPTION                                  | EXPIRATION   |
|----------------|--|--|
| 12000          | Platelet concentrate (Random Donor Platelet) | 5 days. When stored at 20 to 24 °C, and continuously agitated. |

## Platelets, CMV Negative

Platelet concentrate contains at least  $5.5 \times 10^{10}$  platelets in 50-70ml of plasma, and is obtained from donors found to be Cytomegalovirus (CMV) seronegative. CMV negative platelets are used for the treatment of selected CMV seronegative patients who require platelet transfusion therapy. In the US, CMV seronegativity varies from 40-90%, depending on geographic area.

REFERENCE CODE: 40

## Platelets, Irradiated

Platelet concentrate contains at least  $5.5 \times 10^{10}$  platelets in 50-70ml of plasma, and is prepared from individual units of whole blood. The platelet concentrate has been irradiated to inactivate viable lymphocytes that may be present. Irradiated platelets are used to treat patients at risk of Graft vs. Host Disease (GVHD) who require platelet transfusion therapy. Patients at highest risk for GVHD are those with congenital immunodeficiencies, transplant recipients, premature infants, and those with aggressively treated neoplastic disease.

| REFERENCE CODE | DESCRIPTION   | EXPIRATION   |
|----------------|---|--|
| 12600          | Platelet concentrate (Random Donor Platelet) Irradiated | 5 days. When stored at 20 to 24 °C, and continuously agitated. |

### Platelet Apheresis Leukocytes reduced (Single Donor Platelets)

Apheresis platelets are harvested from one individual donor during an automated collection procedure. A unit should contain more than  $3 \times 10^{11}$  platelets, which is equivalent to 6-8 units of platelet concentrates. The volume of plasma in each unit varies from 200-400ml. Apheresis platelets are used to limit exposure to multiple donors and help prevent alloimmunization in those patients requiring multiple platelet transfusions. In addition, all platelet pheresis products have had bacterial testing performed and are released with a negative test result. A 7 days platelet product is now available through NYBC.

| REFERENCE CODE | DESCRIPTION                                  | EXPIRATION   |
|----------------|--|--|
| 12710          | Platelet Pheresis Leukocytes reduced         | 5 days. When stored at 20 to 24 °C, and continuously agitated. |
| 12750          | Platelet Pheresis Leukocytes reduced (Bag 2) |  |
| 12780          | Platelet Pheresis Leukocytes reduced (Bag 3) |  |

### Platelet Apheresis Leukocytes reduced (Single Donor Platelets), Irradiated

Apheresis platelets are harvested from one individual donor during an automated collection procedure. A unit should contain more than  $3 \times 10^{11}$  platelets, which is equivalent to 6-8 units of platelet concentrate. The volume of plasma in each unit varies from 200-400ml. The platelet product has been irradiated to inactivate viable lymphocytes that may be present. Irradiated platelets are used to treat patients at risk of Graft vs. Host Disease (GVHD) who require platelet transfusion therapy. Patients at highest risk for GVHD are those with congenital immunodeficiencies, transplant recipients, premature infants, and those with aggressively treated neoplastic disease.

| REFERENCE CODE | DESCRIPTION   | EXPIRATION   |
|----------------|---|--|
| 12810          | Platelet Pheresis Leukocytes reduced Irradiated         | 5 days. When stored at 20 to 24 °C, and continuously agitated. |
| 12850          | Platelet Pheresis Leukocytes reduced Irradiated (Bag 2) |  |
| 12880          | Platelet Pheresis Leukocytes reduced Irradiated (Bag 3) |  |

### Platelet Apheresis Leukocytes reduced (Single Donor Platelets), CMV Negative

Apheresis platelets are harvested from one individual donor during an automated collection procedure. A unit should contain more than  $3 \times 10^{11}$  platelets, which equivalent to 6-8 units of platelet concentrate. The volume of plasma in each unit varies from 200-400ml. In the US, Cytomegalovirus (CMV) seronegativity varies from 40-90%, depending on geographic area. CMV Negative reduces the possibility of transmitting CMV to immunosuppressed patients who are CMV seronegative, and to neonates.

REFERENCE CODE: 12710, 40

### Platelet Apheresis Leukocyte reduced, HLA Matched

The Human Leukocyte Antigen (HLA) system consists of a complex array of genes. HLA antigens are found on the surface membranes of all nucleated cells of the body, including solid tissues, lymphocytes, granulocytes, monocytes, and platelets. The antigens of the HLA system are involved in the rejection of transplanted solid organs, bone marrow and the survival of platelet transfusions.

Human Leukocyte Antigen (HLA) matched apheresis platelets are used for patients requiring platelet transfusion who are refractory to platelets from unmatched donors. HLA matched apheresis platelets are collected from a single donor with an HLA type matched to that of the recipient. A unit should contain more than  $3 \times 10^{11}$  platelets, which is equivalent to 6-8 units of platelet concentrate. The volume of plasma in each unit varies from 200-400ml. This additional testing provides compatible platelets to patients who have become refractory to random donor platelets. HLA matched apheresis platelets may decrease transfusion reactions caused by alloimmunization.

REFERENCE CODE: 12710, 5

### Platelet Apheresis Leukocyte reduced (Single Donor Platelets), CMV Negative, Irradiated, HLA Matched

Previous product descriptions apply.

REFERENCE CODE: 12810, 40, 5

### Platelet Apheresis Leukocyte reduced (Single Donor Platelets), Platelet Crossmatched

As an adjunct to HLA matched platelet pheresis, NYBC offers platelet screening and platelet cross matching for single donor platelets. The principal of the test is to supply compatible single donor platelet pheresis to the patient who has become refractory to random donor platelets as well as platelet pheresis. Immune destruction of platelets can occur in patients with selected hematologic disorders (leukemia, systemic lupus erythematosus, and other collagen-vascular diseases). In vitro antibody screening tests are employed to detect the presence of these antibodies in patient (or donor) sera. Screening tests for antibodies to platelets must incorporate a sufficient number of platelets to facilitate the detection of most commonly encountered HLA or platelet specific antibodies.

| REFERENCE CODE | DESCRIPTION                            | EXPIRATION   |
|----------------|--|--|
| RH             | Platelet Antibody Screen               | 5 days. When stored at 20 to 24 °C, and continuously agitated. |
| RK             | Platelet Antibody – Chloroquine Screen |  |
| RI             | Platelets Crossmatched                 |  |

### Platelet Apheresis, Washed

Apheresis Platelets can be washed with normal saline or saline buffered with ACD-A or citrate, using manual or automated methods. Washed platelets will remove the plasma proteins from the unit that may cause a reaction for the recipient. The product must be used within 4 hours of preparation.

| REFERENCE CODE | DESCRIPTION                | EXPIRATION                              |
|----------------|----------------------------|---|
| MLM            | Platelet Apheresis, Washed | Must be used within 4 hours of washing. |

### Platelet Apheresis Leukocyte reduced, Referred Donor

Referred donor apheresis platelets are collected from a single donor, often a family member, designated by the recipient. A unit should contain more than  $3 \times 10^{11}$  platelets, which is equal to 6-8 units of platelet concentrates. The volume of plasma in each unit varies from 200-400ml. Platelet transfusion from family member donors are used for patients who become refractory to random donor platelet transfusions, even when the HLA types of donor and patient are unknown. This product may decrease transfusion reactions caused by alloimmunization.

| REFERENCE CODE | DESCRIPTION    | EXPIRATION   |
|----------------|----------------|--|
| 00015          | Referred Donor | 5 days. When stored at 20 to 24 °C, and continuously agitated. |

### Platelet Apheresis Leukocyte reduced, Referred Donor, Irradiated

Referred donor apheresis platelets are collected from a single donor, often a family member, who is designated by the recipient. The unit has been irradiated to inactivate viable lymphocytes and decrease immunogenicity. A unit should contain more than  $3 \times 10^{11}$  platelets, which is equal to 6-8 units of platelet concentrate. The volume of plasma in each unit varies from 200-400ml. Platelet transfusions from family members are indicated for patients refractory to platelets from random donors even when the HLA type is unknown.

REFERENCE CODE: 00015, 12810

### Platelet Apheresis Leukocyte reduced, Referred Donor, CMV Negative

Referred donor apheresis platelets are collected from a single donor that is Cytomegalovirus(CMV) seronegative, often a family member, who is designated by the recipient. A unit should contain more than  $3 \times 10^{11}$  platelets, which is equal to 6-8 units of platelet concentrate. The volume of plasma in each unit varies from 200-400ml. In the US, CMV seronegativity varies from 40-90%, depending on geographic area. Platelet transfusions from family members are indicated for patients refractory to platelets from random donors even when the HLA type is unknown and who are susceptible to CMV infection.

REFERENCE CODE: 00015, 40

## Granulocytes Apheresis, Irradiated

Granulocyte concentrates are prepared by leukapheresis of a single donor. Apheresis granulocytes normally contain a variable number of other leukocytes, platelets, and red blood cells. Apheresis granulocytes are used for severely granulocytopenic (neutropenic) patients with fever and infection who inadequately respond to antibiotic therapy. Granulocyte therapy may also be used in neonatal bacterial sepsis. The product is time sensitive since they can be stored for only 24 hours.

To order this product, please contact Special Donor Services at 212.570.3327

| REFERENCE CODE | DESCRIPTION                        | EXPIRATION   |
|----------------|------------------------------------|--|
| 16811          | Granulocytes, Apheresis Irradiated | 24 hours. They should be stored at 20–24 °C without agitation. |

## Cryoprecipitate

Cryoprecipitate is used for the treatment of von Willebrand disease, replacement of fibrinogen and Factor XIII, Factor VIII replacement and platelet functional defect (uremia, storage pool deficiency), when no other option is successful. Each bag of Cryoprecipitate contains an average of 80 or more IU of Factor VIII (FVIII:C) and at least 150mg of fibrinogen in less than 15ml of plasma.

| REFERENCE CODE | DESCRIPTION             | EXPIRATION                    |
|----------------|-------------------------|-------------------------------|
| 10100          | Cryoprecipitate, Frozen | 1 year from day of collection |

## Plasma – Fresh Frozen

Fresh Frozen Plasma (FFP) is separated and frozen within 8 hours of whole blood collection. It contains plasma proteins and all coagulation factors. A unit of FFP contains about 200 units of Factor VIII plus the other labile plasma coagulation factor, Factor V. FFP is used mainly to provide replacement coagulation factors when concentrate is not available or appropriate. FFP provides normal levels of all clotting factors and is used for patients with Thrombotic Thrombocytopenic Purpura (TTP), for antithrombin III deficiency, for immediate hemostasis and reversal of the warfarin effect, and for massive transfusion with coagulopathy.

| REFERENCE CODE | DESCRIPTION                     | EXPIRATION                    |
|----------------|---------------------------------|-------------------------------|
| 18201          | Fresh Frozen Plasma             | 1 year from day of collection |
| 18435          | Plasma, Cryoprecipitate Reduced |                               |

## Plasma – (Frozen Within 24 Hours of Collection)

Plasma (Frozen within 24 hours of collection) is separated and frozen within 24 hours of whole blood collection. It contains all stable plasma proteins found in Fresh Frozen Plasma (FFP). This component contains about 150 units of Factor VIII. There is little difference in the levels of labile coagulation factors between FFP and Plasma. Factor V levels studied are essentially the same in plasma frozen at 8 hours and at 24 hours. On average, the major difference is a 25% reduction of Factor VIII. Indications for use of Plasma include all the uses of FFP except for replacement of labile coagulation factors such as Factor V and VIII.

| REFERENCE CODE | DESCRIPTION                                  | EXPIRATION                    |
|----------------|--|-------------------------------|
| 18101          | Plasma, Frozen Within 24 Hours of Collection | 1 year from day of collection |

### Apheresis Plasma – Fresh Frozen (Plasma Pak)

Fresh frozen plasma collected by apheresis is collected from one donor during an apheresis donation. Plasma Packs contain all plasma proteins and labile factors found in fresh frozen plasma (FFP). Plasma Packs are used mainly to provide replacement coagulation factors when a specific concentrate is not available or appropriate. FFP provides normal levels of all clotting factors and is used for patients with Thrombotic Thrombocytopenic Purpura (TTP), for antithrombin III deficiency, for immediate hemostasis and reversal of the warfarin effect, and coagulopathy due to massive transfusions. This product is available in 200ml, 400ml, 600ml and in a pediatric (eight pack, 70ml each) volumes.

| REFERENCE CODE | DESCRIPTION                                  | EXPIRATION                    |
|----------------|--|-------------------------------|
| 18211          | Plasma Pak, Series 1 (Jumbo) Size: 600ml bag | 1 year from day of collection |
| 48211          | Fresh Frozen Plasma Pheresis Div (Bag 1)     |                               |
| 48212          | Fresh Frozen Plasma Pheresis Div (Bag 2)     |                               |
| 48213          | Fresh Frozen Plasma Pheresis Div (Bag 3)     |                               |
| 48214          | Fresh Frozen Plasma Pheresis Div (Bag 4)     |                               |
| 48215          | Fresh Frozen Plasma Pheresis Div (Bag 5)     |                               |
| 48216          | Fresh Frozen Plasma Pheresis Div (Bag 6)     |                               |
| 48217          | Fresh Frozen Plasma Pheresis Div (Bag 7)     |                               |
| 48218          | Fresh Frozen Plasma Pheresis Div (Bag 8)     |                               |
| 00350          | 350–500ml Plasma Pak, Pheresis               |                               |
| 00500          | > 500ml Plasma Pak, Pheresis                 |                               |
| 84350          | AB Fresh Frozen Plasma of 350–500 ml         |                               |
| 34500          | AB Fresh Frozen Plasma of 500ml              |                               |

### Other Manufactured Products

| REFERENCE CODE | DESCRIPTION             | EXPIRATION               |
|----------------|-------------------------|--------------------------|
| 90227          | AT III Antithrombin III | See individual packaging |
| 90232          | Xigris (5 mg)           |                          |
| 90233          | Xigris (20 mg)          |                          |

## Donor Counseling Services

The Regional Services Department provides donor notification and counseling services for blood donors with reactive test results for HIV and/or HTLV. Regional Services contacts the donors and notifies him or her of the relevant test result. This process involves contact via letter describing the test result and implications and includes Regional Services contact number for questions or additional information. Donors may be seen for in person counseling and follow up testing on a case by case basis.

For donors who confirm positive, notification involves two 'in person' sessions during which the donor receives extensive counseling, health education, risk evaluation, and follow-up medical and psychosocial referrals. Blood is also collected for retesting to confirm the earlier finding.

Regional Services is able to provide this service for hospital's operating donor rooms. In these cases, the hospital supplies identifying data and relevant laboratory results directly to Regional Services.

REFERENCE CODE: MAM

## Hemochromatosis Phlebotomy Program

Hemochromatosis is a genetic disease that causes the body to store too much iron. The disorder is caused by a mutation in a gene that regulates iron absorption. Hemochromatosis is one of the most common hereditary diseases in the US; approximately one in ten individuals inherit the gene mutation that causes Hemochromatosis from one parent (heterozygotes); while one in two hundred individuals inherit the mutation from both parents (homozygotes). Because Hemochromatosis is a recessive hereditary disease, homozygous individuals are most at risk for developing Hemochromatosis. "Iron overload," a result of Hemochromatosis, can lead to serious, even fatal, organ damage. Complications include cirrhosis and liver cancer, heart disease, arthritis and diabetes, among other serious conditions. Fortunately, Hemochromatosis, unlike many genetic diseases, is treatable via therapeutic phlebotomy in which multiple units of iron-rich blood are periodically removed so the body is able to maintain a normal amount of iron (this is called a "de-ironing" procedure.)

The frequency of the phlebotomies for each patient is determined by his/her physician based on the patient's iron levels and medical status. Phlebotomies are performed at selected New York Blood Center donation sites throughout the greater New York/New Jersey metropolitan area. There is no fee charged for this service.

NYBC is also offering, at no charge, testing for the most common gene mutations seen in hereditary Hemochromatosis (C282Y and H63D) to patients and family members

For additional information about our program please contact our Special Donor & Community Health Services Department at 800-688-0900

## Hospital Collection/Support Services

The NYBC offers hospital based donor rooms the opportunity to purchase collection supplies and ancillary materials such as the donor deferral registry and blood screening services to enhance the safety of donor collections.

| REFERENCE CODE        | DESCRIPTION  |
|-----------------------|--|
| www.nybloodcenter.org | Donor criteria information                               |
| 90222                 | Donor Registration forms                                 |
| 90236                 | Lavender top test tubes – 7ml                            |
| 90235                 | Red top test tubes – 7ml                                 |
| SLM                   | Donor Deferral Registry                                  |
| 90251                 | Blood Bag DBL: Pall CP2D 500 ML (#120-92)                |
| 90252                 | Blood Bag Trip: Pall CP2D 500 ML (#121-93)               |
| 90253                 | Blood Bag Quad: Pall CP2D 500 ML (#121-94)               |
| 90254                 | Blood Bag Dbl: Pall RC2D 500 ML (#129-92) In-Line Filter |
| 00030                 | Pediatric Satellite Bags – 2/Unit                        |
| 00035                 | Pediatric Satellite Bags – 4/Unit                        |
| 90180                 | Filters: RCXLI   |
| 90184                 | Filters: PXL8  |

## Blood Screening Services For Hospital Donor Collections

NYBC provides infectious disease testing services on volunteer donor blood samples for hospitals that operate a donor collection facility. Testing options include a complete testing profile. Licensed NAT testing for HIV/HCV can be obtained independently. NYBC also offers bacterial detection testing for your Pheresis collections.

| REFERENCE CODE | DESCRIPTION  |
|----------------|--|
| LCM            | Complete Testing: Type & Screen, ELISA Battery (anti-HBc, HbsAg, anti-HIV 1/2 and O, anti-HTLV-I/II, anti-HCV) Syphilis, CMV, NAT HIV/HCV, West Nile Virus (WNV), and Chagas testing |
| LM/LN          | NAT HIV/HCV Only   |
| DSM            | Anti-HIV 1/2 Confirmation test only  |
| DUM            | Anti-HTLV I/II Confirmation test only  |
| DIM            | Anti-HbsAg Confirmation test only  |
| RQM            | Sickle Cell Testing  |
| LPM            | Bacterial Testing – Single Donor Plateletpheresis (SDP)  |
| MAM            | Donor Counseling Services  |

To access this service, please contact the Director of Customer Service at 800.411.9851

## Criteria for an Acceptable Donation

The Criteria for an Acceptable Donation, as developed by the FDA, ensures that the provision of a donated unit of blood is safe for the donor to undergo and that the blood will be safe for eventual transfusion to the patient.

To access this pdf document, please visit our website at [www.nybloodcenter.org](http://www.nybloodcenter.org)

## Donor Deferral Registry

The Donor Deferral Registry (DDR) is a confidential record of all donors who have been permanently deferred from donating blood. The DDR is a composite file, representing input from NYBC and participating hospitals.

Data in the DDR are provided to hospitals every other month. There is a fee for this service. Customers must sign a formal agreement for the receipt of this confidential document.

| REFERENCE CODE | DESCRIPTION                                    |
|----------------|--|
| SLM            | DDR Microcomputer System–Program Participation |
| SGM            | DDR Microcomputer Discs (Monthly Updates)      |

For further information on this service or to order, please contact the Customer Service Department at 800.411.9851

## Electronic Retrieval for Donor Test Results

The New York Blood Center is pleased to offer a new service to Testing Services Customers. This service is the Electronic Posting/ Retrieval of Test Results. This service will enhance your facility's ability to safely, easily and efficiently retrieve your donor test results from NYBC's server. This will replace the manual method of communication test results via the fax machine. Electronic retrieval, the upload and integration of test results will eliminate the need for staff to manually enter results into the computer system, thus saving time and eliminating the transcription error. NYBC's Client Services department is available to assist you in the process. This service is offered at no additional charge.

NYBC is not responsible for the creation of the facility's interface process or how the supplied results are used.

For further information on electronic interface for donor test results, please contact the Client Services Department at 516.478.5570

## Autologous Blood Donation

Autologous blood donation is a method by which an individual may donate his or her own blood to be stored and used for transfusion at a future date. Evaluation of the patient by his/ her physician is required prior to autologous blood donation. Autologous donations are permitted once a week over a five-week period if the patient is on an iron supplement and hemoglobin levels are adequate.

Freezing autologous blood is available when medically indicated. Consult a NYBC Regional Medical Director for approval.

Autologous blood donations require special handling for which a fee is charged to cover the cost of this service. NYBC requires a physician's order/prescription to receive this service. Five working days are needed to test, process and ship the blood to the patient's hospital.

Arrangements can be made to ship autologous units to another state. NYBC offers shipping insurance.

| REFERENCE CODE | DESCRIPTION                   | EXPIRATION  |
|----------------|-------------------------------|---|
| SFM            | Autologous Donation Surcharge | RBCs can be stored for 21–42 days depending on anticoagulant. Frozen RBCs can be stored for as long as 10 years, but must be transfused within 24 hours of thawing. |
| SMM            | Shipping Insurance            |   |

To access the Autologous Blood Donation service, please contact the Special Collections Department at 800.439.6876

## Directed Blood Donation

Directed blood donation is a method by which blood donors are selected by the patient who is scheduled to receive a transfusion. Directed donors are generally recruited for scheduled surgical procedures, premature infants, infants and other procedures. Directed blood donations can be used for virtually any non-emergency transfusion. There is no evidence that blood from donors selected by patients is safer than blood from the volunteer blood supply.

Directed blood donations require special handling. To cover the cost of this special handling, fees are collected for each unit drawn. NYBC requires a physician's order/prescription to receive this service. Five working days are needed to test, process and ship the blood to the patient's hospital.

Arrangements can be made to ship directed donor units to another state. NYBC provides shipping insurance.

| REFERENCE CODE | DESCRIPTION                         | EXPIRATION  |
|----------------|-------------------------------------|---|
| SEM            | Red Blood Cells, Directed Surcharge | RBCs can be stored for 21–42 days depending on anticoagulant. Frozen RBCs can be stored for as long as 10 years, but must be transfused within 24 hours of thawing. |
| SMM            | Shipping Insurance                  |   |

To access the Directed Blood Donation service, please contact the Special Collection's Department at 800.439.6876

## Hemophilia Services

Hemophilia Services offered by the New York Blood Center are available only through membership in the Hemophilia Services Consortium, Inc., a not-for-profit Cooperative Hospital Services Organization.

The New York Blood Center provides a comprehensive product line that can satisfy all the needs of patients with bleeding disorders in terms of preferred manufacturer, level of purity, type of manufacturing process, and price.

It is understood that physicians and patients often have specific product preferences. The products offered through the New York Blood Center have the flexibility to meet a wide range of demands related to specific disease states. Hemophilia Services relieves hospitals of the need to maintain and manage large inventories, particularly high-priced specialty products

The New York Blood Center operates a pharmacy which provides pharmacy services, home delivery and medical waste handling for those patients who choose to receive their factor through the factor programs of the comprehensive hemophilia treatment centers which contract with the New York Blood Center.

For further information, please contact the Hemophilia Services at 516-478-5045

## Product Choices

| CATEGORY   | MANUFACTURER                  | PURITY LEVEL                   | INDICATIONS                             |
|--|-------------------------------|--------------------------------|---|
| FACTOR VIII  |                               |                                |   |
| Koate-DVI  | Talecris                      | Intermediate Purity            | Hemophilia A                            |
| Alphanate SD-HT  | Grifols Biologicals, Inc.     | High Purity                    | Hemophilia A                            |
| Monoclote P  | CSL-Behring                   | Ultra High Purity <sub>m</sub> | Hemophilia A                            |
| Hemofil M  | Baxter Healthcare Corporation | Ultra High Purity <sub>m</sub> | Hemophilia A                            |
| Kogenate FS  | Bayer Corporation             | Ultra High Purity <sub>r</sub> | Hemophilia A                            |
| Helixate FS  | Bayer Corporation             | Ultra High Purity <sub>r</sub> | Hemophilia A                            |
| Recombinate  | Baxter Healthcare Corporation | Ultra High Purity <sub>r</sub> | Hemophilia A                            |
| Advate   | Baxter Healthcare Corporation | Ultra High Purity <sub>r</sub> | Hemophilia A                            |
| ReFacto  | Wyeth Pharmaceuticals         | Ultra High Purity <sub>r</sub> | Hemophilia A                            |
| Xnytha   | Wyeth Pharmaceuticals         | Ultra High Purity <sub>r</sub> | Hemophilia A                            |
| FACTOR IX  |                               |                                |   |
| Profilnine SD  | Grifols Biologicals, Inc.     | Intermediate Purity            | Hemophilia B                            |
| Bebulin VH   | Baxter Healthcare Corporation | Intermediate Purity            | Hemophilia B                            |
| Alphanine SD-VF  | Grifols Biologicals, Inc.     | High Purity                    | Hemophilia B                            |
| Mononine   | CSL-Behring                   | High Purity <sub>m</sub>       | Hemophilia B                            |
| BeneFIX  | Wyeth Pharmaceuticals         | High Purity <sub>r</sub>       | Hemophilia B                            |
| INHIBITOR BYPASS THERAPY   |                               |                                |   |
| Feiba VH   | Baxter Healthcare Corporation | Intermediate Purity            | By-passing activity vs. F8&F9 Inhibitor |
| NovoSeven RT   | Novo Nordisk Pharmaceuticals  | Ultra High Purity <sub>r</sub> | By-passing activity vs. F8&F9 Inhibitor |
| Humate-P   | CSL Behring                   | Intermediate Purity            | Hemophilia A and von Willebrand's       |
| Desmopressin Acetate Injection   | Ferring AB                    |                                | Hemophilia A von Willebrand's (Type I)  |
| Stimate Nasal Spray  | Ferring Pharmaceuticals       |                                | Hemophilia A von Willebrand's (Type I)  |
| Aminocaproic Acid<br><small>(Generic form of Amicar Tablets &amp; Oral Solution)</small> | Milkart, Inc.                 | Fibrinolytic bleeding          |   |
| <small>m = monoclonal<br/>r = recombinant</small>  |                               |                                |   |

## HLA-Testing Laboratory

The human leukocyte antigen (HLA) system consists of a complex array of genes. HLA antigens are found on the surface membranes of all nucleated cells of the body, including solid tissues, lymphocytes, granulocytes, monocytes, and platelets. The antigens of the HLA system are involved in the rejection of transplanted solid organs, bone marrow and the survival of platelet transfusions. Many HLA antigens have been identified. The NYBC HLA-testing laboratory does HLA typing of individuals and families for the A, B, C and DR genetic loci, as well as HLA antibody screening of leukocytes and platelets.

| REFERENCE CODES | DESCRIPTION   |
|-----------------|---|
| IA              | HLA Class I (A,B,C) by Serology                                 |
| IB              | HLA Class I HLA-B27 (and controls), by Serology                 |
| IC              | HLA Class I (A,B,C) by DNA (Molecular) SSP Typing               |
| ID              | HLA Class I (A,B,C) @Allele Level, Typing by DNA Sequencing     |
| IH              | HLA Class II (DRB + DQB1) by SSP at Low-Intermediate Resolution |
| IN              | HLA Class II (DRB1) @Allele Level Resolution by DNA Sequencing  |
| IO              | HLA Class II (DQB1) @Allele Level Resolution by DNA Sequencing  |

For access to this service, please contact the HLA Laboratory at 212.570.3230

### Laboratory of Immunohematology Services

The New York Blood Center provides reference laboratory services to assist hospitals in solving patient antibody problems and supplying suitable units of blood. The staff of the Laboratory of Immunohematology test and resolve blood group antibody and antigen problems on referred samples received locally, nationally, and worldwide. The laboratory provides antigen negative Red Blood Cell components for transfusion to patients with red cell antibodies. In addition the Laboratory of Immunohematology provides serological consultation to client hospitals in resolving immunohematological problems. This group of specialized technologists participates in the training of NYBC Fellows, visiting MD's and other technical personnel. Another important service this laboratory provides is to screen donor samples to identify rare donors whose RBCs lack a high prevalence blood group antigen. The laboratory maintains a large collection of rare cell samples and antibody samples.

In addition to the New York Blood Center's Laboratory of Immunohematology in New York City, the blood center has two additional reference laboratories for the convenience of area hospitals. These facilities are located in Long Island Blood Services and Hudson Valley Blood Services. These facilities perform antibody screening and identification on hospital samples and they serve as the Transfusion Services for ambulatory care agencies performing outpatient transfusions of blood products.

| REFERENCE CODES | DESCRIPTION                          | REFERENCE CODES | DESCRIPTION                     |
|-----------------|--------------------------------------|-----------------|---------------------------------|
| RBM             | Direct Antiglobulin Test             | RNM             | Basic Antibody Identification   |
| RCM             | Type and Screen                      | ROM             | Complex Antibody Identification |
| RDM             | Extended Phenotype                   | RPM             | PLA-1 Typing                    |
| RFM             | Antibody Titration                   | RQM             | Sickle Cell Test                |
| RGM             | RH Typing                            | RRM             | Complete Blood Count            |
| RHM             | Platelet Antibody Screen             | RSM             | Ref Lab: Eve W/E Surcharge      |
| RIM             | Platelet Crossmatch                  | 00071-00079     | Antigen Negative Charge         |
| RJM             | Chloroquine Screen                   |                 |                                 |
| RKM             | Platelet Antibody Screen Chloroquine |                 |                                 |
| RLM             | Compatibility Test                   |                 |                                 |

### Antigen Negative Units

The Laboratory of Immunohematology screens blood samples to identify donors whose RBCs lack a high prevalence antigen. Once identified, the donor is assigned the rare donor group identifier, which is known as Code 99.

Pertinent information is entered in the computer and a hard copy of the record is forwarded to Special Donor Services Department who maintains and monitors the future contact of these rare donors. Future RBC donations of these donors are sent directly to a patient in need or to the Frozen Laboratory for preservation until needed by a patient.

These rare types can be unique to each specific ethnic background. Donor samples are tested for special antigens based on their ethnicity. A unit of blood is considered rare when more than 200 donors have to be screened to find 1 suitable donor.

Completely typed antigen-negative units (referred as Code 96) are provided by the Testing Laboratory to the Laboratory of Immunohematology to be issued for patients with red cell antibodies. These donors allow us to provide precisely-matched RBC components to patients who have developed red cell antibodies. These donor units are not only typed for ABO but also typed for the antigens of the following blood group systems: (Rh, Kell, FY, JK,) and S and s antigens. They are categorized according to their Rh phenotype (R<sub>1</sub>R<sub>1</sub>, R<sub>2</sub>R<sub>2</sub>, R<sub>0</sub> and rr.) and lack different combinations of blood group antigens.

For access to this service, please contact your Regional Hospital Services Department or call the Laboratory of Immunohematology at 718.752.4771

## Frozen Blood Reserve Service

Frozen red cells are an excellent resource for patients with extremely rare blood types. They are the preferred component for patients sensitized to immunoglobulin A (IgA). They may also be indicated for patients sensitized to leukocyte and platelet antigen.

New York Blood Center’s (NYBC) Frozen Blood Reserve Service is available to provide autologous blood for patients who have had surgery postponed and for patients with potential need for transfusion beyond the maximum storage time available for liquid blood.

NYBC maintains frozen reserves under FDA standards. Blood can be frozen and stored up to ten years, but must be transfused within 24 hours of thawing. Autologous blood units are kept frozen for up to six months unless the blood is very rare. Autologous units can be shipped anywhere in the United States, subject to prevailing regulations.

## National Cord Blood Program

The New York Blood Center’s National Cord Blood Program (NCBP) is the world’s first and largest public cord blood bank in the world. Testing for the NCBP is performed at the Milstein National Cord Blood Center, also part of the New York Blood Center. This cord blood program makes a frozen, ready-to-use, stem cell product available for children and adult research subjects affected by life-threatening illnesses for which a “stem cell” transplant from an unrelated donor is the necessary treatment.

NYBC’s National Cord Blood Program is a cord blood bank for the general public, unlike private, for-profit cord blood storage companies. NYBC’s Program was the first public cord blood bank in the world to receive NetCord-FACT accreditation. Since 1996, the National Cord Blood Program has operated under an Investigational New Drug (IND) exemption issued by the U.S. Food and Drug Administration (FDA), the first IND issued for cord blood banking.

NYBC’s program has provided cord blood transplants to over 3,200 gravely ill patients (about one-third of all cord blood transplants from unrelated donors worldwide), mostly patients with leukemia, lymphoma, severe aplastic anemia or lethal diseases of the blood or immune system or certain inherited metabolic diseases.

The National Cord Blood Program website provides information about cord blood, donation, patients, transplants and more technical aspects of our Program’s operations. Through the Website’s Transplant Center Log-In feature (registration required), Physicians and Transplant Coordinators can conduct “formal” searches for HLA-matched units for their patients. A Public Cord Blood Search feature (open to everyone) allows anyone an on-line opportunity to get an “informal” preliminary count of potentially matching units in the NCBP inventory – an important option not available to the public anywhere else. Preliminary on-line searches, providing a count of available units in the Program’s inventory that match a patient’s HLA type, are available to physicians and patients at:

[http://www.nationalcordbloodprogram.com/public\\_hla\\_search.html](http://www.nationalcordbloodprogram.com/public_hla_search.html)

| REFERENCE CODES | DESCRIPTION                                  |
|-----------------|--|
| CBM             | Placental Cord Blood/Unit                    |
| BUM             | Placental Cord Blood Processing and Freezing |
| CSM             | Shipping Charges for Placental Cord Blood    |

## Unrelated Bone Marrow/Stem Cell Donor Registry

The National Marrow Donor Program (NMDP) works through an extensive network of US and International organizations to facilitate bone marrow and blood stem cell transplants for patients who need an unrelated donor transplant. The NMDP Network brings together the expertise of leading hospitals, blood centers, laboratories and recruiters to help patients in need. The NMDP maintains a registry of more than 5 million potential donors. The New York Blood Center (NYBC) is one of the largest Donor Centers in the NMDP network with over 200,000 typed volunteer donors.

NYBC Donor Center staff recruit potential bone marrow/blood stem cell donors, inform them about the donation process, and act as donor advocates by looking out for the donor's best interests throughout the recruitment and donation process. When a NMDP volunteer donor consents to be listed in the registry, a blood sample is taken for HLA typing. If the volunteer's blood is a preliminary match with a potential recipient, the donor is contacted for further testing. If the donor and recipient match, the volunteer donor will undergo counseling and a physical exam at a local hospital. If all is satisfactory, a donation may be scheduled.

Bone Marrow and Stem Cell transplants are used in the treatment of leukemia, aplastic anemia and other fatal blood diseases. The NMDP is an extensive registry of HLA typed unrelated, volunteer donors who can match patients in need of a bone marrow/stem cell transplant who do not have a family member who matches their HLA type.

Physicians and patients can access the service by calling 800.526.7809 or visiting the web site at [www.marrow.org](http://www.marrow.org).

Donors can access to this service by contacting the Special Donor Services Department at 800.692.5663

## Therapeutic Phlebotomy

Therapeutic phlebotomy is the collection of blood as a therapeutic measure. The procedure is used to decrease red blood cell volume in many conditions such as hemochromatosis and polycythemia. A physician's prescription is required to receive this service.

Physicians can access this service for their patients by contacting their Regional Medical Director.

## Perioperative Autologous Transfusion (PAT) Services

A patient's own blood (autologous blood) is recognized as the safest transfusion option for patients who need blood transfusions. When patients receive their own blood, they are not exposed to infectious disease and are receiving blood that is perfectly matched for them.

The New York Blood Center offers mobile Perioperative Autologous Transfusion Service on-demand to hospitals 24 hours a day, 365 days a year usually within a few hours. This outsourced service allows hospitals to offer PAT without the burden of maintaining: equipment (NYBC's utilizes state-of-the-art technology and adheres to the most rigorous quality control programs), critical transfusion and performance data, and proficiency of staff. NYBC's PAT specialists undergo extensive training, have considerable field experience and operate under an SOP-directed practice. Their credentials are readily available for your records.

The perioperative autologous transfusion (PAT) procedure or "cell salvage" collects blood that would usually be lost during or after surgery, washes and processes it, and returns it to the patient. PAT recovers blood from the surgical field; anticoagulant is added, and the blood is pumped through a cell salvage machine, centrifuged and washed. The resulting packed red cells are pumped into a transfer bag. The unit of blood can be returned immediately to the patient or can be infused later. PAT can reduce or eliminate the patient's need for allogeneic blood transfusion. It can be an alternative or complimentary to pre-donated autologous blood. Cell salvage is used mostly in major surgeries such as hip and knee replacements, large gynecological surgery, prostate surgery, and vascular surgery. Cell salvage can be used standalone or part of a blood conservation program.

## Platelet Rich Plasma (PRP)

Platelet Rich Plasma (PRP), a standalone or adjunct offering to our cell salvage service, is an autologous blood by-product that is rich in platelets. PRP permits the body to take advantage of the normal healing pathways at a greatly accelerated rate. Intra-operatively, PRP may: hasten hemostasis, accelerate early phase wound and bone healing, provide an antimicrobial effect via a high leukocyte concentration, and promote earlier wound closure. Post-operatively PRP may: decrease blood loss, pain and wound infections, improve tissue regeneration, augment rate of extracellular matrix deposition, facilitate faster and stronger bone regeneration, reduce inflammation, allow earlier functional range of movement in orthopedic cases, decrease narcotic and antibiotic requirements, and reduce scarring. On activation with thrombin/calcium, the platelets form a coagulum immediately releasing platelet-derived growth factors and vasoconstrictors. Platelet Rich Plasma can be prepared conveniently in a physician's office or hospital location. The process takes 12 minutes, uses only 60ccs of whole blood, and provides a product that can be used for eight hours.

### Perioperative Autologous Transfusion Reference Codes

| REFERENCE CODE | DESCRIPTION   |
|----------------|---|
| PAM            | PERIOPERATIVE AUTOLOGOUS TRANSFUSION (PAT) COMPLETE SERVICE (PAT specialist available up to four hours, cell salvage equipment, and one set of disposables) |
| PBM            | PAT: SPECIALIST & DISPOSABLES (PAT specialist available up to four hours and one set of disposables)  |
| PCM            | PAT: SPECIALIST ONLY (PAT Specialist available up to four hours)  |
| PEM            | PAT: COMPLETE SERVICE DAILY RATE (Same as complete service with PAT specialist available up to eight hours)   |
| PFM            | PAT: SPECIALIST & DISPOSABLES DAILY RATE (Same as PAT Specialist & Disposables with PAT specialist available up to eight hours)                             |
| PGM            | PAT: SPECIALIST ONLY DAILY RATE (Same as PAT Specialist with PAT specialist available up to eight hours)  |
| P2M            | PLATELET RICH PLASMA (PRP) (PAT specialist, equipment, and disposables prepares PRP not in conjunction with a cell saver procedure)                         |
| P5M            | PRP: (PAT SPECIALIST/ONLY PRP) (PAT specialist prepares PRP not in conjunction with a cell saver procedure)   |
| P7M            | PRP WITH CELLSAVER (PAT specialist, equipment, and disposables prepares PRP in conjunction with a cell saver procedure)                                     |
| P8M            | PRP MAGELLAN KIT (Additional set of PRP disposables)  |

To access this service, please contact the Clinical Services department at 800-235-5728 or 800-CELLSAVE

## Clinical Apheresis Services

Clinical Apheresis is the removal of abnormal or pathologic substances from a patient’s blood using an automated blood cell separator machine. A replacement fluid such as fresh frozen plasma, human serum albumin or normal saline is often required.

There is no need to transfer patients to other institutions for clinical apheresis services as our mobile service comes to the patient’s facility on demand (24/7). We provide the latest continuous-flow apheresis technology (with strict quality assurance of all equipment) operated by specialized registered nurses trained in apheresis operating under an SOP-directed practice.

NYBC provides unlimited access to NYBC staff physicians who are recognized transfusion medicine specialists and are available to support the course of treatment and answer questions regarding patient management.

NYBC follows the standards and procedures set by the American Association of Blood Banks (AABB) and the American Society for Apheresis (ASFA). A physician’s order/prescription is required to receive this service.

### DIFFERENT TYPES AND USES OF CLINICAL APHERESIS

| TYPE OF APHERESIS                     | USES  | CPT CODE |
|---------------------------------------|---|----------|
| Plasmapheresis                        | Therapeutic plasma exchange                     | 36514    |
| Leukapheresis                         | Therapeutic white cell depletion                | 36511    |
| Erythrocytapheresis                   | Therapeutic red cell removal and exchange       | 36912    |
| Plateletpheresis                      | Platelet depletion                              | 36513    |
| Photopheresis, extracorporeal         | Treatment of cutaneous T-cell lymphoma (CTCL)   | 36522    |
| Peripheral Blood Stem Cell Collection | Source of stem cells for future transplantation | 38205    |

### Photopheresis, extracorporeal

Extracorporeal photopheresis has been used clinically for 20 years as a approved therapy for the palliative treatment of cutaneous T-cell lymphoma (CTCL). The therapy is an apheresis-based process whereby approximately  $5 \times 10^9$  autologous leukocytes are treated with a photoactivatable compound, 8-methoxypsoralen, followed by exposure to  $\sim 1.5\text{J}/\text{cm}^2$  of Ultraviolet A light and reinfused where they ultimately undergo apoptosis. As a result of photopheresis’s demonstrated efficacy and safety profile in CTCL, physicians have applied photopheresis to a wide variety of diseases that respond to immunosuppression.

### MD PROFESSIONAL SERVICES REIMBURSEMENT RATES FOR APHERESIS PROCEDURES (HOSPITAL INPATIENT AND OUTPATIENT PROCEDURES)

| CPT Code | NEW YORK             |  |          |  |                    | NEW JERSEY  |                    |
|----------|----------------------|--|----------|--|--------------------|---|--------------------|
|          | New York (Manhattan) | Bronx, Kings, Nassau, Richmond, Rockland, Suffolk, Westchester | Queens   | Columbia, Delaware, Dutchess, Greene, Orange, Putnam, Sullivan, Ulster | All Other Counties | Bergen, Essex, Hudson, Hunterdon, Middlesex, Morris, Passaic, Somerset, Sussex, Union, Warren | All Other Counties |
| 36511    | \$112.35             | \$110.35   | \$108.08 | \$96.52  | \$93.73            | \$106.12  | \$102.12           |
| 36512    | \$112.84             | \$110.82   | \$108.53 | \$100.46   | \$94.08            | \$106.57  | \$102.54           |
| 36513    | \$117.98             | \$116.91   | \$114.38 | \$104.45   | \$96.39            | \$109.90  | \$105.86           |
| 36514    | \$111.35             | \$109.39   | \$107.15 | \$99.25  | \$93.03            | \$105.20  | \$101.28           |
| 36515    | \$108.83             | \$106.98   | \$104.81 | \$97.20  | \$91.26            | \$102.91  | \$99.16            |
| 36522    | \$123.87             | \$121.94   | \$119.24 | \$108.94   | \$100.46           | \$115.67  | \$110.93           |

## Peripheral Blood Stem Cell Collection

Peripheral blood stem cells can be used as a source of stem cells for both autologous and allogeneic bone marrow transplants. Peripheral blood stem cell collection involves the collection of a concentrated preparation of circulating leukocytes by apheresis. These preparations contain stem cells that have the ability to restore blood cell production and represent an alternative source of stem cells for patients undergoing bone marrow transplantation (BMT). Stem cells, mononuclear cells, and lymphocytes can be collected. A physician's order/prescription is required to receive these services.

| REFERENCE CODE | DESCRIPTION   |
|----------------|---|
| TAM            | Therapeutic Apheresis                                 |
| TBM            | Therapeutic Apheresis Operator Only                   |
| TCM            | Immunoadsorption Column (Prosorba) <sup>®</sup>       |
| TDM            | Peripheral Blood Stem Cell Collection (Apheresis)     |
| TEM            | Peripheral Blood Stem Cell Collection – Operator Only |

To access this service, please contact the Clinical Apheresis Services Department at 800.842.2566

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## Hematopoietic Stem Cell Laboratory Services

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The New York Blood Center (NYBC) Hematopoietic Stem Cell Service provides comprehensive support for bone marrow and stem cell transplant patients at hospitals throughout the tri-state area. Our program provides mobile peripheral blood stem cell apheresis collections, complete processing and cryopreservation laboratory services, and access to medical expertise in the mobilization protocols essential to a successful outcome.

The Stem Cell Service has processed and cryopreserved over 1000 bone marrow harvests and 7000 peripheral blood stem cell collections. This represents products used by more than 2000 transplant procedures.

Bone marrow or peripheral blood hematopoietic stem cells are collected for patients scheduled to undergo stem cell (bone marrow) transplantation. For autologous transplants, the patient donates his or her own cells. For allogeneic transplants, a healthy donor provides cells for a patient. Collected cells (harvested by aspiration from the marrow or by therapeutic apheresis from the blood) are processed to concentrate the stem cells. Stem cells may be further processed in a variety of ways, depending upon the source and volume of stem cells and the diagnosis of the recipient. In selected cases, the concentrated stem cell preparation is processed to concentrate or eliminate cells found in the collection. A cryoprotectant chemical mixture is added to protect cells during freezing, and they are frozen and stored at temperatures below  $-80^{\circ}\text{C}$  until thawed for infusion into the patient. Stem cell transplantation is used to replace diseased bone marrow, as in leukemia, or as an adjunctive measure for patients undergoing high-dose chemotherapy and/or radiotherapy. For some diagnoses, stem cell transplantation procedures are experimental.

## Hematopoietic Peripheral Blood Stem Cell Processing (Cryopreservation)

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The New York Blood Center processes, cryopreserves, and stores hematopoietic stem/progenitor cell products for any collection facility. NYBC's extensive experience, equipment and quality control safeguard handling and storage of cells indefinitely. NYBC's storage facility utilizes liquid nitrogen freezers that are monitored continuously by a remote alarm system. There is an annual storage fee for product held over one year.

## Hematopoietic Stem Cell Analyses

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### CD 34+ cell enumeration

CD 34 is a cell surface antigen found on hematopoietic stem and progenitor cells. The number of CD 34+ cells in the stem cell collection can be determined by flow cytometry. The number of CD 34+ cells is an indicator of the adequacy of the stem cell collection for bone marrow transplantation.

### Colony Forming Unit (CFU) Assays

Hematopoietic stem cells divide and differentiate into hematopoietic progenitor cells. Hematopoietic progenitor cells are intermediate between stem cells and mature blood cells. Hematopoietic progenitor cells can be grown in semi-solid culture media. In culture, the progenitor cells form colonies of daughter cells which can be indicative of the type and number of stem cells in the stem cell collection. CFU assays can be performed for quality control and/or research purposes. This procedure is used as a surrogate marker for the viability of a stem cell preparation and as such can be used to judge the adequacy of stem cell preparations for transplantations.

## Hematopoietic Stem Cell Laboratory Additional Services

### Progenitor Cell Analyses:

CD34+ cell enumeration by flow cytometry and CFU assays

### Cells for Clinical Trials:

Concentrated mononuclear cells, dendritic cells and other ex vivo expansions

### Cell Processing:

CD34+ cell enrichment, other monoclonal antibody-based enrichment, donor lymphocytes, T-cell depletion, and red cell depletion

### Tissue Banking

Throughout collection, processing and storage and delivery, NYBC tracks each phase of laboratory intervention and product status. Our extensive oversight allows you to embark on long-term projects with confidence that your products are secure and available on a moment's notice.

## Peripheral Blood Stem Cell Collection

See Clinical Apheresis Services

## Hematopoietic Stem Cell Laboratory Services

| REFERENCE CODE | DESCRIPTION  |
|----------------|--|
| BA             | Bone marrow (hematopoietic stem cells) processing & freezing |
| BB             | Peripheral blood stem cell processing & freezing             |
| BC             | Bone marrow thawing per bag                                  |
| BD             | Storage beyond one year                                      |
| BE             | Washing red blood cells                                      |
| BF             | Transportation – Stem Cell                                   |
| BG             | Stem Cell Assay CFU  |
| BH             | Standard T cell depletion                                    |
| BI             | T cell depletion Add. RNC                                    |
| BJ             | Standard B Cell Depletion                                    |
| BK             | B Cell depletion Add. RND                                    |
| BL             | Stndr. Myeloid (CD33) Depletion                              |
| BM             | Myeloid (CD33) Depletion Add. RN                             |
| BN             | Standard CD10 depletion                                      |
| BO             | CD 10 Depletion Addtn. RND                                   |
| BP             | CD34 Selection   |
| BR             | Diagnostic immunophenotyping                                 |
| BS             | Molecular Diagnostics  |
| BT             | CD34 Enumeration   |

To access this service, please contact the Hematopoietic Stem Cell Laboratory at 800.842.2566

# Transfusion Services

## Transfusion Management Services

The New York Blood Center (NYBC) brings additional value to local hospitals through its management of hospital blood banks and transfusion services. In addition to operating Transfusion Services, activities offered by NYBC include (a) pre-transfusion testing and cross-matching for outpatient transfusions and (b) provision of medical oversight for transfusion services.

The benefits for hospitals outsourcing transfusion management services to NYBC:

- Cost savings realized through consolidation and NYBC's economies of scale
- Reduced utilization of blood products
- Standardization of transfusion medicine practices
- Access to state of the art technology and information systems
- Access to transfusion medicine expertise
- Regulatory oversight provided by NYBC's Quality Assurance Department and Regulatory Affairs Department.

| REFERENCE CODES | DESCRIPTION                     |
|-----------------|---------------------------------|
| RB              | Direct Antiglobulin Test        |
| RC              | Type and Screen                 |
| RF              | Antibody Titration              |
| RG              | RH Typing                       |
| RL              | Compatibility Test              |
| RN              | Basic Antibody Identification   |
| RO              | Complex Antibody Identification |
| 00071-00079     | Antigen Negative Charge         |
| RS              | Ref Lab: Eve W/E Surcharge      |

## Limited Transfusion Services

Ambulatory Surgical Care Centers have the opportunity to access the limited transfusion services from the New York Blood Center. In this situation, the Blood Center becomes the transfusion service for the ambulatory care agency. The blood center performs blood types, antibody screening and crossmatching for an outpatient and supplies the blood product while the ambulatory care agency performs the actual transfusion of the blood/blood product. The facility is required to participate in transfusion committee meetings which are held quarterly with the Regional Medical Director.

For further information, please contact the Director of Customer Service at 800.411.9851

**Education Programs**

In addition to life-saving blood products and clinical services, NYBC offers educational services to our hospitals and to visitors from around the world. Physicians, laboratory technologists and other healthcare professionals rely on a range of programs to help them stay current with the rapidly growing field of transfusion medicine. The program offerings include:

- Transfusion Medicine Fellowship
- Courses for physicians and laboratory technologists in training
- Continuing education events
  - Alexander S. Wiener Memorial Lecture
  - Audio-conferences

The Transfusion Medicine Fellowship is a one-year program that prepares physicians to work as medical directors of hospital transfusion services and blood donor centers. This fellowship has been in existence for 30 years and trained 100 physicians, most of whom are board certified in transfusion medicine.

NYBC provides programs to support professionals in training at area hospitals.

- Twice a year NYBC offers a course in transfusion medicine for physicians, which supports their training and helps residents prepare for board certification exams.
- We also provide classroom course for clinical laboratory technologists to supplement hospital training efforts.

NYBC offers continuing education events for transfusion medicine professionals in our community. The annual Alexander S. Wiener Memorial lecture has been presented by a distinguished scientist each year since 1977. The Norman Selby Healthcare Leadership series held its inaugural lecture in 2005, and is offered annually. We also host audio-conferences, which are broadcast nationally by the American Association of Blood Banks and the American Society for Clinical Pathology. NYBC partners with professional groups to co-sponsor programs such as the annual symposia presented by the Council of Hospital Blood Bank directors and the Hospital Blood Bank Supervisors Association.

| REFERENCE CODES | DESCRIPTION                 |
|-----------------|-----------------------------|
| EAM             | AABB Teleconferences        |
| EBM             | AABB Teleconf 1 Year Subs   |
| ECM             | AABB Teleconferences – Hvbs |
| EDM             | Dry Workshop Single Sessn   |
| EEM             | Dry Workshop One Sessn Rm   |
| EFM             | Competency Assesment Wshp   |
| EGM             | AABB Teleconf Single Sess   |
| EHM             | Transfusion Technology 1    |
| EIM             | Transfusion Technology MS   |

For further information, please contact our Education Department at 212.570.3277

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# Research Services

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## Lindsley F. Kimball Research Institute (LFKRI)

New York Blood Center is home to the prestigious Lindsley F. Kimball Research Institute (LFKRI) one of the world's leading centers for basic and applied research in hematology and transfusion medicine. The institute, with 17 research laboratories, is dedicated to the study of blood and the prevention, treatment and cure of blood-borne and blood-related diseases. Its investigators have made major contributions toward understanding and combating a wide range of diseases, such as AIDS, hepatitis, malaria and leukemia – making it possible for thousands of people to live healthier lives. The mission of LFKRI is to use biomedical research to benefit people worldwide.

### Laboratories at LINDSLEY F. KIMBALL RESEARCH INSTITUTE

|                                  |                                   |
|----------------------------------|-----------------------------------|
| Cell Signaling                   | Biochemistry & Molecular Genetics |
| Developmental Biology            | Myeloproliferative Disorders      |
| Platelet Biology                 | Erythropoiesis                    |
| Complement Biology               | Immunogenetics                    |
| Immunochemistry                  | Red Cell Physiology               |
| Infectious Disease Prevention    | Molecular Parasitology            |
| Molecular Modeling & Drug Design | Viral Immunology                  |

Since its inception in 1964, cutting-edge research and scientific innovations have distinguished NYBC from other blood banking facilities. The centers' research arm is located at 310 East 67th Street. Research at NYBC engages over 120 scientists and technical staff in the labs you see listed above. In addition to these labs, research at NYBC is supported by specialized core laboratories and other functions including, Central Facilities, MicroChemistry lab, Flow cytometry and Cell Sorting Lab, Electron Microscopy Lab, Office of Research Administration, Patents and Licensing.

If you are interested in further information on our research activity or wish to collaborate with the New York Blood Center, please contact our Research Administration at 212.570.3045

## Patents and Licensing

The mission of the Office of Patents and Licensing at the New York Blood Center (NYBC) is to facilitate commercialization of NYBC research discoveries for the benefit of the public and, as a result, generate funds to promote continuing innovation in blood safety and other technologies directed against various infectious diseases.

The Office of Patents and Licensing (OPL) thrives to develop a greater awareness of NYBC's research programs and to cultivate research collaborations between NYBC and other commercial and non-commercial entities. The office evaluates new technologies for commercial potential and protects the intellectual property through patents, copyrights and other legal and contractual arrangements. OPL markets and licenses NYBC's technologies to maximize their commercial value and accrue funding to support further research and development at NYBC. The office's responsibilities include managing and enforcing existing license agreements and other contracts, receiving, reporting and distributing of royalty income according to the NYBC patent policy. OPL helps NYBC senior management to evaluate new business opportunities through market research and financial analysis.

Some of the contract arrangements the Office of Patent & Licensing at NYBC manages are:

1. Material transfer agreements – for exchange of research biological materials.
2. Confidentiality agreements – for exchange of confidential information.
3. Inter-Institutional agreements – for jointly owned intellectual properties.
4. Service agreements for arrangement of "paid services."
5. Exclusive or non-exclusive license agreements – for granting the right to a third party on NYBC intellectual property.
6. Sponsored research agreements – for research projects with financial support from industry.
7. Research collaboration agreements – for research collaborations between NYBC and other entities.
8. Option agreements – for granting an option to a third party to obtain the rights on NYBC intellectual property.

If you are interested in licensing NYBC technologies or have questions, please contact the Office of Patents and Licensing at 212.570.3215

## Research Products

Selected blood and blood products may be obtained from the New York Blood Center for research use. Some of the products available include in dated as well as expired red blood cells, white blood cells collected from a unit of whole blood (buffy coat) and cord blood units. Written documentation states that products will only be used "in vitro" for research, teaching, or manufacture of diagnostics. Written approval for research products is obtained through the Regional Medical Director.

For further information, please contact your Regional Medical Director.

| CODE   | DESCRIPTION   |
|--------|---|
| 000150 | CPD Whole Blood   |
| 000160 | CPDA-1 Whole Blood  |
| 000250 | CPD Whole Blood Irradiated  |
| 000260 | CPDA-1 Whole Blood Irradiated                                       |
| 003311 | AS-1 Red Blood Cells Pheresis Leukocytes Reduced (Bag 2)            |
| 003320 | AS-1 Red Blood Cells Pheresis,Leukocytes Reduced,Irradiated (Bag 1) |
| 000330 | AS-1 Red Blood Cells Pheresis,Leukocytes Reduced,Irradiated (Bag 2) |
| 003820 | AS-1 Red Blood Cells Pheresis Lr (Bag 1)                            |
| 004050 | CPD Red Blood Cells   |
| 004060 | CPDA-1 Red Blood Cells  |
| 004080 | CP2D Red Blood Cells  |
| 004210 | AS-1 Red Blood Cells  |
| 004230 | AS-3 Red Blood Cells  |
| 004241 | AS-3 Red Blood Cells Pheresis (Bag 1)                               |
| 004250 | AS-5 Red Blood Cells  |
| 004261 | AS-3 Red Blood Cells Pheresis (Bag 2)                               |
| 004271 | AS-3 RBC Pheresis (ACDA) (Bag 1)                                    |
| 004281 | AS-3 RBC Pheresis (ACDA) (Bag 2)                                    |
| 004350 | CPD Red Blood Cells Leukocytes Reduced                              |
| 004360 | CPDA-1 RBC Leukocytes Reduced                                       |
| 004710 | AS-1 Red Blood Cells Leukocytes Reduced                             |
| 004730 | AS-3 Red Blood Cells Leukocytes Reduced                             |
| 004741 | AS-3 RBC Pheresis Leukocytes Reduced (Bag 1)                        |
| 004750 | AS-5 Red Blood Cells, Leukocytes Reduced                            |
| 004761 | AS-3 RBC Pheresis Leukocytes Reduced (Bag 2)                        |
| 004771 | AS-3 RBC Pheresis (ACDA) Leukocytes Reduced (Bag1)                  |
| 004791 | AS-3 RBC Pheresis (ACDA) Leukocyte Reduced (Bag2)                   |
| 004900 | RBC Washed  |
| 004941 | RBC Pheresis Washed (Bag 1)   |
| 004961 | RBC Pheresis Washed (Bag 2)   |
| 005050 | CPD Red Blood Cells Irradiated                                      |
| 005060 | CPDA-1 Red Blood Cells Irradiated                                   |
| 005210 | AS-1 Red Blood Cells Irradiated                                     |
| 005230 | AS-3 Red Blood Cells Irradiated                                     |
| 005241 | AS-3 RBC Pheresis Irradiated (Bag 1)                                |
| 005250 | AS-5 Red Blood Cells Irradiated                                     |
| 005261 | AS-3 RBC Pheresis Irradiated (Bag 2)                                |
| 005271 | AS-3 RBC Pheresis (ACDA) Irradiated (Bag 1)                         |
| 005281 | AS-3 RBC Pheresis (ACDA) Irradiated (Bag 2)                         |
| 005350 | CPD RBC Leukocytes Reduced Irradiated                               |
| 005360 | CPDA-1 RBC Leukocytes Reduced Irradiated                            |
| 005710 | AS-1 RBC Leukocytes Reduced Irradiated                              |
| 005730 | AS-3 RBC Leukocytes Reduced Irradiated                              |
| 005741 | AS-3 RBC Pheresis Leukocytes Reduced Irradiated (Bag 1)             |
| 005750 | AS-5 RBC Leukocytes Reduced Irradiated                              |
| 005761 | AS-3 RBC Pheresis Leukocytes Reduced Irradiated (Bag 2)             |
| 005771 | AS-3 RBC Pheresis (ACDA) Leukocytes Reduced Irradiated (Bag1)       |
| 005781 | AS-3 RBC Pheresis (ACDA) Leukocytes Reduced Irradiated (Bag2)       |
| 005900 | RBC Washed Irradiated   |

| CODE   | DESCRIPTION  |
|--------|--|
| 005941 | AS-3 RBC Pheresis Washed Irradiated (Bag 1)                      |
| 005961 | AS-3 RBC Pheresis Washed Irradiated (Bag 2)                      |
| 006141 | AS-3 RBC Pheresis Washed Leukocytes Reduced Irradiated (Bag 1)   |
| 006161 | AS-3 RBC Pheresis Washed Leukocytes Reduced Irradiated (Bag 2)   |
| 006200 | RBC Frozen   |
| 006211 | RBC Pheresis Frozen (Bag 1)                                      |
| 006251 | RBC Pheresis Frozen (Bag 2)                                      |
| 006270 | RBC Leukocytes Reduced Frozen (06270)                            |
| 006300 | RBC Frozen Rejuvenated   |
| 006400 | RBC Deglycerolized   |
| 006401 | RBC Deglycerolized Divided                                       |
| 006411 | RBC Pheresis Deglycerolized (Bag 1)                              |
| 006451 | RBC Pheresis Deglycerolized (Bag 2)                              |
| 006500 | RBC Rejuvenated Deglycerolized                                   |
| 006700 | RBC Leukocytes Reduced Frozen                                    |
| 006711 | RBC Pheresis Leukocytes Reduced Frozen (Bag1)                    |
| 006761 | RBC Pheresis Leukocytes Reduced Frozen (Bag2)                    |
| 006780 | RBC Leukocytes Reduced Rejuvenated Frozen                        |
| 006800 | RBC Leukocytes Reduced Deglycerolized                            |
| 006811 | RBC Pheresis Leukocytes Reduced Deglycerolized (Bag1)            |
| 006861 | RBC Pheresis Leukocytes Reduced Deglycerolized (Bag2)            |
| 006880 | RBC Leukocytes Reduced Rejuvenated Deglycerolized                |
| 007200 | RBC Frozen Irradiated  |
| 007211 | RBC Pheresis Frozen Irradiated (Bag 1)                           |
| 007251 | RBC Pheresis Frozen Irradiated (Bag 2)                           |
| 007300 | RBC Frozen Rejuvenated Irradiated                                |
| 007400 | RBC Deglycerolized Irradiated                                    |
| 007411 | RBC Pheresis Deglycerolized Irradiated (Bag 1)                   |
| 007451 | RBC Pheresis Deglycerolized Irradiated (Bag 2)                   |
| 007500 | RBC Rejuvenated Deglycerolized Irradiated                        |
| 007800 | RBC Leukocytes Reduced Deglycerolized Irradiated                 |
| 007841 | RBC Pheresis Leukocytes Reduced Deglycerolized Irradiated (Bag1) |
| 007851 | RBC Pheresis Leukocytes Reduced Deglycerolized Irradiated (Bag2) |
| 007880 | RBC Leukocytes Reduced Rejuvenated Deglycerolized Irradiated     |
| 010100 | Cryoprecipitated AHF   |
| 012000 | Platelets  |
| 012070 | Platelets – Leukocytes Reduced (CP2D)                            |
| 012600 | Platelets Irradiated   |
| 012710 | Platelets Pheresis Leukocytes Reduced                            |
| 012711 | Platelets Pheresis Leukocytes Reduced Variable Content           |
| 012750 | Platelets Pheresis Leukocytes Reduced (Bag 2)                    |
| 012751 | Platelet Pheresis Leukocytes Reduced Variable Content (Bag 2)    |
| 012780 | Platelets Pheresis Leukocytes Reduced (Bag 3)                    |
| 012781 | Platelet Pheresis Leukocytes Reduced Variable Content (Bag 3)    |
| 012810 | Platelets Pheresis Leukocytes Reduced Irradiated                 |
| 012811 | Platelet Pheresis Leukocytes Reduced Irradiated Variable Content |
| 012850 | Platelets Pheresis Leukocytes Reduced Irradiated (Bag2)          |
| 012880 | Platelets Pheresis Leukocytes Reduced Irradiated (Bag 3)         |
| 016811 | Granulocytes, Pheresis Irradiated                                |
| 018101 | Plasma, Frozen Within 24 Hours Of Collection                     |
| 018201 | Fresh Frozen Plasma  |

| CODE   | DESCRIPTION  |
|--------|--|
| 018211 | Fresh Frozen Plasma Pheresis                             |
| 018251 | Fresh Frozen Plasma                                      |
| 018435 | Plasma Cryoprecipitate Reduced                           |
| 048211 | Fresh Frozen Plasma Pheresis Divided (Bag 1)             |
| 048212 | Fresh Frozen Plasma Pheresis Div (Bag 2)                 |
| 048213 | Fresh Frozen Plasma Pheresis Div (Bag 3)                 |
| 048214 | Fresh Frozen Plasma Pheresis Div (Bag 4)                 |
| 048215 | Fresh Frozen Plasma Pheresis Div (Bag 5)                 |
| 048216 | Fresh Frozen Plasma Pheresis Div (Bag 6)                 |
| 048217 | Fresh Frozen Plasma Pheresis Div (Bag 7)                 |
| 048218 | Fresh Frozen Plasma Pheresis Div (Bag 8)                 |
| 090180 | Filter, Pall RCXL1 Pall H.Ef. 1u Blood                   |
| 090184 | Filter, Pall PXL8 H.Ef. 8u Platelet                      |
| 090251 | Blood Bag DBL: Pall CP2D 500 ML (#120-92)                |
| 090252 | Blood Bag Trip: Pall CP2D 500 ML (#121-93)               |
| 090253 | Blood Bag Quad: Pall CP2D 500 ML (#121-94)               |
| 090254 | Blood Bag Dbl: Pall RC2D 500 ML (#129-92) In-Line Filter |
| 92000  | Koate DVI  |
| 92004  | Hemofil M  |
| 92005  | Monoclate P  |
| 92009  | Recombinat   |
| 92010  | Bebulin V  |
| 92011  | Profilnine SD  |
| 92013  | Alphanine  |
| 92014  | Mononine   |
| 92015  | Benefix  |
| 92017  | Feiba VH   |
| 92019  | Humate P   |
| 92021  | DDAVP  |
| 92022  | DDAVP (Stimate)  |
| 92023  | Amicar Tablets 500mg                                     |
| 92024  | Amicar Syrup 1.25gm/5ml                                  |
| 92027  | Aminocaproic Acid Syr                                    |
| 92028  | Helixate FS  |
| 92029  | Kogenate FS  |
| 92030  | ReFacto  |
| 92031  | Aminocaproic Acid Tabs                                   |
| 92033  | Advate   |
| 92034  | Benefix UHP (2000 size)                                  |
| 92035  | Kogenate FS w/BioSet                                     |
| 92036  | Alphanate AHF-VWF Complex                                |
| 92037  | Refacto UHP  |

| CODE  | DESCRIPTION            |
|-------|------------------------|
| 92038 | NovoSeven RT 1.0mg     |
| 92039 | NovoSeven RT 2.0mg     |
| 92040 | NovoSeven RT 5.0mg     |
| 92041 | Xyntha                 |
| 90248 | BaxJect II             |
| 90249 | Mix2Vial               |
| 90250 | NovoSeven Infusion Kit |
| 90227 | Thrombate III          |
| 90232 | Xigris 5mg             |
| 90233 | Xigris 20mg            |

| CODE  | DESCRIPTION                            |
|-------|--|
| 00005 | HLA Matched Pheresis                   |
| 00008 | PLA1 Negative Platelets Pheresis       |
| 00010 | Leukocytes Reduced: RBC                |
| 00011 | Leukocytes Reduced: Platelets Pheresis |
| 00015 | Referred Donor Pheresis                |
| 00020 | Irradiated                             |
| 00030 | 2 Bag Pedi-pack                        |
| 00035 | 4 Bag Pedi-pack                        |
| 00036 | 4 Bag Pedi-pack: Leuko Reduced RBC     |
| 00040 | CMV Negative                           |
| 00045 | CMV Negative Pheresis                  |
| 00050 | HGBS Negative                          |
| 00071 | Antigen: 1 Antigen Negative Charge     |
| 00072 | Antigen: 2 Antigen Negative Charges    |
| 00073 | Antigen: 3 Antigen Negative Charges    |
| 00074 | Antigen: 4 Antigen Negative Charges    |
| 00075 | Antigen: 5 Antigen Negative Charges    |
| 00076 | Antigen: 6 Antigen Negative Charges    |
| 00077 | Antigen: 7 Antigen Negative Charges    |
| 00078 | Antigen: 8 Antigen Negative Charges    |
| 00079 | Antigen: 9 Antigen Negative Charges    |
| 00090 | Autologous CRYO Adjustment             |
| 00100 | Whole Blood (<48 hrs) Adjustment       |
| 00110 | CPD Red Blood Cells                    |
| 00130 | Frozen Red Blood Cells                 |
| 00140 | Deglycerolized Red Blood Cells         |
| 00150 | Washed Red Blood Cells                 |
| 00161 | FB: 1 Antigen Negative Charge          |
| 00162 | FB: 2 Antigen Negative Charges         |
| 00163 | FB: 3 Antigen Negative Charges         |
| 00164 | FB: 4 Antigen Negative Charges         |
| 00165 | FB: 5 Antigen Negative Charges         |
| 00166 | FB: 6 Antigen Negative Charges         |
| 00167 | FB: 7 Antigen Negative Charges         |
| 00168 | FB: 8 Antigen Negative Charges         |
| 00169 | FB: 9 Antigen Negative Charges         |
| 00350 | 350–500ml Plasma Pheresis              |
| 00500 | >500ml Plasma Pheresis                 |
| 84350 | AB FFP of 350–500ml                    |
| 84500 | AB FFP of 500ml                        |

| CODE | DESCRIPTION                            |
|------|--|
| BAM  | Bone Marrow Process & Freeze           |
| BBM  | PBSC Process & Freeze                  |
| BCM  | BM/PBSC Thawing Per Bag                |
| BDM  | Storage Beyond 1 Year                  |
| BEM  | Washing Red Blood Cells                |
| BFM  | Transportation-(Stem Cell)             |
| BGM  | Stem Cell Assay CFU                    |
| BHM  | Standard T Cell Depletion              |
| BIM  | T Cell Depletion Add. Rnd              |
| BJM  | Standard B Cell Depletion              |
| BKM  | B Cell Depletion Addt.Rnd              |
| BLM  | Stndr. Myeloid (CD33) Deplt            |
| BMM  | Myeloid (CD33) Deplt.Add.Rn            |
| BNM  | Standard CD10 Depletion                |
| BOM  | CD 10 Depletion Addtn.Rnd              |
| BPM  | CD 34 Selection                        |
| BQM  | Procedures Begin After 5pm             |
| BRM  | Diagnostic Immunophenotyping           |
| BSM  | Molecular Diagnostics                  |
| BTM  | CD 34 Enumeration                      |
| BUM  | Cord Blood Proces&Freez                |
| BVM  | Transfer Cryoprsrvd Stemc              |
| CBM  | Placntl Cord Blood/Unit                |
| CSM  | Shpng Chrgs Fr Plac Blood              |
| FAM  | Lab Surch Wknd Hldy Frozn              |
| I1   | Family ABC Serology & DRB1 Sequence    |
| I2   | Family ABC SSP & DRB1/DBQ1 SSP         |
| I3   | Family ABC SSP & DRB1 SEQ              |
| I4   | Family A,B Sequencing                  |
| I5   | Family ABC Sequences                   |
| I6   | Family AB and DRB1 Sequencing          |
| I7   | ABC and DRB1 Sequencing                |
| IA   | A,B,C Serology                         |
| IB   | A,B,C, Low Resolution SSP              |
| IC   | DRB1/DQB1 Low Resolution SSP           |
| ID   | DRB1 / DQB1 / DRB 3 /4 /5 LR SSP       |
| IE   | A,B,C Serology and DRB1 / DQB1 SSP     |
| IF   | A,B,C Serology DRB1 O DQB1 SSP         |
| IG   | A,B,C SSP & DRB1 / DQB1 SSP            |
| IH   | A,B,C, SSP & DRB1 O DQB1 SSP           |
| II   | A High Resolution Sequencing           |
| IJ   | B High Resolution Sequencing           |
| IK   | C High Resolution Sequencing           |
| IL   | A,B/A,C/B.C High Resolution Sequencing |
| IM   | ABC High Resolution Sequencing         |
| IN   | DRB1 High Resolution Sequencing        |
| IO   | DQB1 High Resolution Sequencing        |
| IP   | ABC & DRB1/DQB1 Sequencing             |
| IQ   | ABC & DRB1 O DQB1 Sequencing           |
| IR   | ABC Serology & DRB1/DQB1 Sequencing    |
| IS   | ABC Serology & DRB1 O DQB1 Sequencing  |

| CODE | DESCRIPTION                                  |
|------|--|
| IT   | A,BA,CB,C & DRB1/DQB1 Sequencing             |
| IU   | A,BA,CB,C & DRB10DQB1 Sequencing             |
| IV   | A O B O C & DRB1/DQB1 Sequencing             |
| IW   | A O B O C DRB1 O DQB1 Sequencing             |
| IX   | ABC SSP & DRB1/DQB1 Sequencing               |
| IY   | ABC SSP & DRB1 O DQB1 Sequencing             |
| IZ   | Family ABC Serology & DRB1/DQBSSP            |
| LCM  | Profile 3 Complete Test + CMV                |
| LKM  | Blood Irradiation                            |
| LMM  | NAT Test NHCV                                |
| LNM  | NAT Test NHIV                                |
| LOM  | NAT Test WNV                                 |
| LPM  | Bacterial Detection SDP                      |
| MAM  | Donor Counseling Service                     |
| MLM  | Washed Platelet                              |
| MRM  | Hosp Blood Bank Supervisors Association – NY |

| CODE | DESCRIPTION   |
|------|---|
| P2M  | Platelet Rich Plasma  |
| P5M  | Prp (Pat Op/Only Prp)   |
| P7M  | Prp W/ Cell Saver   |
| P8M  | Prp Magellan Kit  |
| PAM  | Pat-Full Service  |
| PBM  | Pat Operator & Disposbl   |
| PCM  | Pat Operator Only   |
| PEM  | Pat-Full Srvce Daily Rate                                       |
| PFM  | Pat Oper&Disp Daily Rate  |
| PGM  | Pat Oper Only Daily Rate  |
| RAM  | Ref Lab: Evening W/E Surc                                       |
| RBM  | Direct Antiglobulin Test  |
| RCM  | Type And Screen   |
| RDM  | Extended Phenotype  |
| RFM  | Antibody Titration  |
| RGM  | RH Typing   |
| RHM  | Platelet Antibody Screen  |
| RIM  | Platelet Crossmatch   |
| RJM  | Chloroquine Screen  |
| RKM  | Plt Ab Screen Chloroquine                                       |
| RLM  | Compatibility Test  |
| RNM  | Basic Antibody Identification                                   |
| ROM  | Complex Antibody Identification                                 |
| RPM  | Pla-1 Typing  |
| RRM  | Complete Blood Count  |
| RSM  | Reference Lab: Weekend Surcharge                                |
| SAM  | Therapeutic Phlebotomy  |
| SBM  | 4 Bag Pedi-Pack   |
| SCM  | 2 Bag Pedi-Pack   |
| SEM  | Directed Donation Surcharge                                     |
| SFM  | Autologous Donation Surcharge                                   |
| SGM  | DDR Microcomputer Discs   |
| SHM  | Ship & Handling Supplemental Charge                             |
| SIM  | Ship & Handling Emergency Charge                                |
| SJM  | Handling Charge Supplemental Pick-Up                            |
| SKM  | Handling Charge Emergency Pick-Up                               |
| SLM  | Donor Refer Registry Program (DDR)                              |
| SQM  | Granulocytes, Weekend, Holiday Surcharge                        |
| SSM  | Night Surcharge (5pm—7am) Primary, Secondary And List Customers |
| TAM  | Therapeutic Apheresis   |
| TBM  | Therapeutic Apheresis Operator Only                             |
| TCM  | Prosorba Column Apheresis                                       |
| TDM  | Apheresis Collection-Stem Cell                                  |
| TEM  | Stem Cell Collection-Operator Only                              |
| TFM  | Therapeutic Phlebotomy  |

Source: American Medical Association

| HCPCS/CPT | APC  | DESCRIPTION   |
|-----------|------|---|
| P9051     | 1010 | Blood, leukoreduced CMV-negative, each unit   |
| P9053     | 1020 | Platelet, pheresis, leukoreduced, CMV-Negative, irradiated, each unit                         |
| P9052     | 1011 | Platelet, HLA-matched leukoreduced, apheresis/pheresis, each unit                             |
| P9054     | 1016 | Blood, leukoreduced, frozen, deglycerolized/washed, each unit                                 |
| P9055     | 1017 | Platelets, leukoreduced, CMV-negative, apheresis/pheresis, each unit                          |
| P9056     | 1018 | Whole blood, leukoreduced, irradiated, each unit  |
| P9057     | 1021 | Red blood cell, frozen/deglycerolized/washed, leukocyte-reduced, irradiated, each unit        |
| P9058     | 1022 | Red blood cell, leukocyte-reduced, CMV negative. irradiated, each unit                        |
| P9059     | 0955 | Plasma, frozen within 24 hours of collection, each unit                                       |
| P9060     | 9503 | Fresh frozen plasma, donor retested, each unit  |
| P9050     | 9506 | Granulocytes, pheresis, each unit   |
| J2790     | 0884 | Injection, Rho (D) immune globulin, human, one dose package                                   |
| J2792     | 1609 | Injection, Rho D immune globulin, intravenous, human, solvent detergent, 100 IU               |
| J7187     | 0636 | Injection, von Willebrand Factor complex, human, ristocetin cofactor, per IU VWF:RCO          |
| J7189     | 0636 | Factor VIIa (antihemophilic factor, recombinant), per 1mcg (NovoSeven)                        |
| J7190     | 0925 | Factor VIII (antihemophilic factor, human) per IU   |
| J7191     | 0926 | Factor VIII (antihemophilic factor, porcine) per IU   |
| J7192     | 0927 | Factor VIII (antihemophilic factor, recombinant) per IU                                       |
| J7193     | 0636 | Factor IX (antihemophilic factor, purified, non-recombinant), per IU (Alphanine SD, Mononine) |
| J7194     | 0928 | Factor IX, complex, per IU  |
| J7195     | 0636 | Factor IX, (antihemophilic factor, recombinant), per IU (Benefix, Konyne 80, Proplex T)       |
| J7197     | 0930 | Antithrombin III (human) per IU   |
| J7198     | 0636 | Antiinhibitor, per IU (Autoplex T, FEIBA IMMUNO/VH AICC)                                      |
| J7199     | 0636 | Hemophilia clotting factor, not otherwise classified  |
| P9010     | 0950 | Blood (whole), for transfusion, per unit  |
| P9011     | 0967 | Blood (split unit) specify amount   |
| P9012     | 0952 | Cryoprecipitate, each unit  |
| P9016     | 0954 | Red blood cells, leukocytes reduced, each unit  |
| P9017     | 0908 | Fresh frozen plasma (single donor), each unit   |
| P9019     | 0957 | Platelets, each unit  |
| P9020     | 0958 | Platelet rich plasma, each unit   |
| P9021     | 0959 | Red blood cells, each unit  |
| P9022     | 0960 | Red blood cells, washed, each unit  |
| P9023     | 0949 | Plasma, pooled multiple donor, solvent/detergent treated, frozen, each unit                   |
| P9031     | 1013 | Platelets, leukocytes reduced, each unit  |
| P9032     | 9500 | Platelets, irradiated, each unit  |
| P9033     | 0968 | Platelets, leukocytes reduced, irradiated, each unit  |
| P9034     | 9507 | Platelets, pheresis, each unit  |
| P9035     | 9501 | Platelets, pheresis, leukocytes reduced, each unit  |
| P9036     | 9502 | Platelets, pheresis, irradiated, each unit  |
| P9037     | 1019 | Platelets, pheresis, leukocytes reduced, irradiated, each unit                                |

Source: American Medical Association

| HCPCS/CPT | APC  | DESCRIPTION   |
|-----------|------|---|
| P9038     | 9505 | Red blood cells, irradiated, each unit                              |
| P9039     | 9504 | Red blood cells, deglycerolized, each unit                          |
| P9040     | 0969 | Red blood cells, leukocytes reduced, irradiated, each unit          |
| P9041     | 0961 | Infusion, albumin (human), 5%, 50ml                                 |
| P9042     | 0962 | Infusion, albumin (human), 25%, 10ml                                |
| P9043     | 0956 | Infusion, plasma protein fraction (human), 5%, 50ml                 |
| P9044     | 1009 | Plasma, cryoprecipitate reduced, each unit                          |
| P9045     | 0963 | Infusion, albumin (human), 5%, 250ml                                |
| P9048     | 0966 | Infusion, plasma protein fraction (human) 5%, 250ml                 |
| Q0160     | 0931 | Factor IX (antihemophilic factor, purified, non-recombinant) per IU |
| Q0161     | 0932 | Factor IX (antihemophilic factor, recombinant) per IU               |
| Q0187     | 1409 | Factor VIIa (antihemophilic factor, recombinant) per 1.2mg          |

Source: American Medical Association

| CODE  | DESCRIPTION   |
|-------|---|
| 86850 | Antibody screen, RBC, each serum technique  |
| 86860 | Antibody elution (RBC), each elution  |
| 86870 | Antibody identification, RBC antibodies, each panel for each serum technique  |
| 86880 | Antihuman globulin test (Coombs test); direct, each antiserum   |
| 86885 | indirect, qualitative, each antiserum   |
| 86886 | indirect, titer, each antiserum   |
| 86890 | Autologous blood or component, collection processing and storage; predeposited  |
| 86891 | intra- or postoperative salvage   |
| 86900 | Blood typing; ABO   |
| 86901 | Blood typing; RH (D)  |
| 86903 | Blood typing; antigen screening for compatible blood unit using reagent serum, per unit screened  |
| 86904 | Blood typing; antigen screening for compatible blood unit using patient serum, per unit screened  |
| 86905 | Blood typing; RBC antigens other than ABO or RH(D), each  |
| 86906 | Blood typing; RH phenotyping, complete  |
| 86910 | Blood typing, for paternity testing, per individual; ABO, Rh and MN   |
| 86911 | Blood typing, for paternity testing, per individual, each additional antigen system   |
| 86920 | Compatibility test each unit; immediate spin technique  |
| 86921 | Compatibility test each unit; incubation technique  |
| 86922 | Compatibility test each unit; antiglobulin technique  |
| 86923 | Compatibility test each unit; electronic  |
| 86927 | Fresh frozen plasma, thawing, each unit   |
| 86930 | Frozen blood, each unit; freezing (includes preparation)  |
| 86931 | Frozen blood, each unit; thawing  |
| 86932 | Frozen blood, each unit; freezing (includes preparation) and thawing  |
| 86940 | Hemolysins and agglutinins; auto, screen, each  |
| 86941 | Hemolysins and agglutinins; incubated   |
| 86945 | Irradiation of blood products, each unit  |
| 86950 | Leukocyte transfusion   |
| 86965 | Pooling of platelets or other blood products  |
| 86970 | Pretreatment of RBCs for use in RBC antibody detection, identification, and/or compatibility testing; incubation with chemical agents or drugs, each            |
| 86971 | Pretreatment of RBCs for use in RBC antibody detection, identification, and/or compatibility testing; incubation with enzymes, each                             |
| 86972 | Pretreatment of RBCs for use in RBC antibody detection, identification, and/or compatibility testing; by density gradient separation, each                      |
| 86975 | Pretreatment of serum for use in RBC antibody identification; incubation with drugs, each   |
| 86976 | Pretreatment of serum for use in RBC antibody identification; by dilution   |
| 86977 | Pretreatment of serum for use in RBC antibody identification incubation with inhibitors, each   |
| 86978 | Pretreatment of serum for use in RBC antibody identification by differential red cell absorption using patient RBCs or RBCs of known phenotype, each absorption |
| 86985 | Splitting of blood or blood products, each unit   |
| 86999 | Unlisted transfusion medicine procedure   |
| 90384 | Rho(D) immune globulin human full dose, for intramuscular use   |

Source: American Medical Association

| HCPCS/CPT | APC  | APC DESCRIPTION              | CPT DESCRIPTION  |
|-----------|------|------------------------------|--|
| 99195     | 0372 | Therapeutic Phlebotomy       | Phlebotomy, therapeutic (separate Procedure)   |
| 36430     | 0110 | Transfusion                  | Transfusion, blood or blood components   |
| 36440     | 0110 | Transfusion                  | Push transfusion, blood, 2 years or under  |
| 36450     | 0110 | Transfusion                  | Exchange transfusion, blood; newborn   |
| 36455     | 0110 | Transfusion                  | Other than newborn   |
| 36460     | 0110 | Transfusion                  | Transfusion, intrauterine, fetal   |
| 36511     | 0111 | -                            | Therapeutic apheresis, White Blood Cells   |
| 36512     | 0111 | -                            | Therapeutic apheresis, Red Blood Cells   |
| 36513     | 0111 | -                            | Therapeutic apheresis, Platelets   |
| 36514     | 0111 | -                            | Therapeutic apheresis, Plasma Exchange   |
| 36515     | 0112 | -                            | Therapeutic apheresis, Adsorption with extracorporeal immunoadsorption and plasma reinfusion                             |
| 36516     | 0112 | -                            | Therapeutic apheresis, Adsorption with extracorporeal selective adsorption or selective filtration and plasma reinfusion |
| 36522     | 0112 | Extracorporeal Photopheresis | Photopheresis, extracorporeal  |
| 38205     | -    |                              | Blood derived hematopoietic progenitor cell harvesting for transplantation, per collection, allogeneic                   |
| 38206     | -    | -                            | Blood derived hematopoietic progenitor cell harvesting for transplantation, per collection, autologous                   |
| 38207     | -    | -                            | Transplant preparation of hematopoietic progenitor cells; cryopreservation and storage                                   |
| 38208     | -    | -                            | Transplant preparation of hematopoietic progenitor cells; thawing of previously frozen harvest, without washing          |
| 38209     | -    | -                            | Transplant preparation of hematopoietic progenitor cells; thawing of previously frozen harvest, with washing             |
| 38210     | -    | -                            | Transplant preparation of hematopoietic progenitor cells; specific cell depletion within harvest, T-cell depletion       |
| 38211     | -    | -                            | Transplant preparation of hematopoietic progenitor cells; tumor cell depletion   |
| 38212     | -    | -                            | Transplant preparation of hematopoietic progenitor cells; red blood cell removal   |
| 38213     | -    | -                            | Transplant preparation of hematopoietic progenitor cells; platelet depletion   |
| 38214     | -    | -                            | Transplant preparation of hematopoietic progenitor cells; plasma (volume) depletion                                      |
| 38215     | -    | -                            | Transplant preparation of hematopoietic progenitor cells; cell concentration in plasma, mononuclear, or buffy coat layer |

Source: American Medical Association

| HCPCS/CPT | APC  | APC DESCRIPTION   | CPT DESCRIPTION   |
|-----------|------|---|---|
| 38230     | 0123 | Bone Marrow Harvesting and Bone Marrow/Stem Cell Transplant | Bone marrow harvesting for transplantation  |
| 38240     | 0123 | Bone Marrow Harvesting and Bone Marrow/Stem Cell Transplant | Bone marrow or blood-derived peripheral stem cell transplantation; allogeneic                           |
| 38241     | 0123 | Bone Marrow Harvesting and Bone Marrow/Stem Cell Transplant | Bone marrow or blood-derived peripheral stem cell transplantation; autologous                           |
| 38242     |      | Bone Marrow Harvesting and Bone Marrow/Stem Cell Transplant | Bone marrow or blood-derived peripheral stem cell transplantation; allogeneic donor lymphocyte infusion |

| ISBT EQUIVALENT | CODABAR EQUIVALENT | TEXT NAME (NOT LABEL TEXT)               | MNEMONIC   |
|-----------------|--------------------|--|------------|
| D8101100        | 28101              | PLASMA PHERESIS FROZEN WITHIN 24HRS AUTO | FPPH<24AUT |
| D8101V00        | 28101              | PLASMA PHERESIS FROZEN WITHIN 24 HOURS   | FPPH<24    |
| D8101VA0        | 28111              | PLS PHER FRZ WITHIN 24 HRS DIV (BAG 1)   | FPPH<24DV1 |
| D8101VB0        | 28112              | PLS PHER FRZ WITHIN 24 HRS DIV (BAG 2)   | FPPH<24DV2 |
| D8101VC0        | 28113              | PLS PHER FRZ WITHIN 24 HRS DIV (BAG 3)   | FPPH<24DV3 |
| D8101VD0        | 28114              | PLS PHER FRZ WITHIN 24 HRS DIV (BAG 4)   | FPPH<24DV4 |
| D8101VE0        | 28115              | PLS PHER FRZ WITHIN 24 HRS DIV (BAG 5)   | FPPH<24DV5 |
| D8101VF0        | 28116              | PLS PHER FRZ WITHIN 24 HRS DIV (BAG 6)   | FPPH<24DV6 |
| D8101VG0        | 28117              | PLS PHER FRZ WITHIN 24 HRS DIV (BAG 7)   | FPPH<24DV7 |
| D8101VH0        | 28118              | PLS PHER FRZ WITHIN 24 HRS DIV (BAG 8)   | FPPH<24DV8 |
| D8101X00        | 28101              | PLASMA PHERESIS FRZ WITHIN 24HRS AUTOBIO | FPPH<24AUB |
| E0023100        | 00150              | CPD WHOLE BLOOD AUTO                     | CPDWBAUTO  |
| E0023V00        | 00150              | CPD WHOLE BLOOD                          | CPDWB      |
| E0023X00        | 00150              | CPD WHOLE BLOOD AUTO BIO                 | CPDWBAUTO  |
| E0031V00        | 00250              | CPD WHOLE BLOOD IRRADIATED               | CPDWBIRR   |
| E0052100        | 00151              | CPD WHOLE BLOOD LOW VOLUME AUTO          | CPDWBVAUT  |
| E0052V00        | 00151              | CPD WHOLE BLOOD LOW VOLUME               | CPDWBV     |
| E0052X00        | 00151              | CPD WHOLE BLOOD LOW VOLUME AUTO BIO      | CPDWBVAUT  |
| E0068100        | 00160              | CPDA-1 WHOLE BLOOD AUTO                  | CPDA1WBAUT |
| E0068V00        | 00160              | CPDA-1 WHOLE BLOOD                       | CPDA1WB    |
| E0068X00        | 00160              | CPDA-1 WHOLE BLOOD AUTO BIO              | CPDA1WBAUT |
| E0076V00        | 00260              | CPDA-1 WHOLE BLOOD IRRADIATED            | CPDA1WBIRR |
| E0097100        | 00161              | CPDA-1 WHOLE BLOOD LOW VOLUME AUTO       | CPDA1WLVAU |
| E0097V00        | 00161              | CPDA-1 WHOLE BLOOD LOW VOLUME            | CPDA1WBLV  |
| E0097X00        | 00161              | CPDA-1 WHOLE BLOOD LOW VOLUME AUTO BIO   | CPDA1WLVAU |
| E0112V00        | 00180              | CP2D WHOLE BLOOD                         | CP2DWB     |
| E0120V00        | 00280              | CP2D WHOLE BLOOD IRRADIATED              | CP2DWBIRR  |
| E0130V00        | 00181              | CP2D WHOLE BLOOD LOW VOLUME              | CP2DWBV    |
| E0167100        | 04050              | CPD RED BLOOD CELLS AUTO                 | CPDRBCAUTO |
| E0167V00        | 04050              | CPD RED BLOOD CELLS                      | CPDRBC     |
| E0167X00        | 04050              | CPD RED BLOOD CELLS AUTO BIO             | CPDRBCAUTO |
| E0168V00        | 25001              | CPD RBC FOR MANUFACTURING USE ONLY       | RBCMANCPD  |
| E0178V00        | 05050              | CPD RED BLOOD CELLS IRRADIATED           | CPDRBCIRR  |
| E0179V00        | 05350              | CPD RBC LEUKOCYTES REDUCED IRRADIATED    | CPDLEUKOIR |
| E0181100        | 04350              | CPD RED BLOOD CELLS LEUKO RED AUTO       | CPDRBCLRAU |
| E0181V00        | 04350              | CPD RED BLOOD CELLS LEUKOCYTES REDUCED   | CPDRBCLR   |
| E0181X00        | 04350              | CPD RED BLOOD CELLS LEUKO RED AUTO BIO   | CPDRBCLRAU |
| E0195V00        | 04060              | CPDA-1 RED BLOOD CELLS (FROM 450 ML WB)  | CPDA1450   |
| E0206V00        | 05060              | CPDA-1 RBC IRRADIATED (FROM 450 ML WB)   | CPDAIRR450 |
| E0212100        | 04060              | CPDA-1 RED BLOOD CELLS AUTO              | CPDA1RBCAU |
| E0212V00        | 04060              | CPDA-1 RED BLOOD CELLS                   | CPDA1RBC   |
| E0212X00        | 04060              | CPDA-1 RED BLOOD CELLS AUTO BIO          | CPDA1RBCAU |
| E0223V00        | 05060              | CPDA-1 RED BLOOD CELLS IRRADIATED        | CPDA1IRR   |
| E0224V00        | 05360              | CPDA-1 RBC LEUKOCYTES REDUCED IRRADIATED | CPDA1LRIRR |
| E0226V00        | 04360              | CPDA-1 RBC LEUKOCYTES REDUCED            | CPDA1RBCLR |
| E0229V00        | 04065              | CPDA-1 RED BLOOD CELLS (FROM 250 ML WB)  | CPDA1250   |
| E0237V00        | 05065              | CPDA-1 RBC IRRADIATED (FROM 250 ML WB)   | CPDAIRR250 |

| ISBT EQUIVALENT | CODABAR EQUIVALENT | TEXT NAME (NOT LABEL TEXT)                | MNEMONIC   |
|-----------------|--------------------|---|------------|
| E0238V00        | 05365              | CPDA-1 RBC LEUKO REDUCED IRR (250 ML WB)  | CPDA1R250  |
| E0239V00        | 04365              | CPDA-1 RBC LEUKO REDUCED (250 ML WB)      | CPDA1LR250 |
| E0244100        | 04061              | CPDA-1 RED BLOOD CELLS LOW VOLUME AUTO    | CPDA1RCLAU |
| E0244V00        | 04061              | CPDA-1 RED BLOOD CELLS LOW VOLUME         | CPDA1RBCLV |
| E0244X00        | 04061              | CPDA-1 RBC LOW VOLUME AUTO BIO            | CPDA1RCLAU |
| E0262100        | 04080              | CP2D RED BLOOD CELLS AUTO                 | CP2DRBCAUT |
| E0262V00        | 04080              | CP2D RED BLOOD CELLS                      | CP2DRBC    |
| E0262X00        | 04080              | CP2D RED BLOOD CELLS AUTO BIO             | CP2DRBCAUT |
| E0263V00        | 25001              | CP2D RBC FOR MANUFACTURING USE ONLY       | RBCMANCP2D |
| E0273V00        | 05080              | CP2D RED BLOOD CELLS IRRADIATED           | CP2DRBCIRR |
| E0274V00        | 05380              | CP2D RBC LEUKOCYTES REDUCED IRRADIATED    | CP2DLEUKIR |
| E0276100        | 04380              | CP2D RED BLOOD CELLS LEUKO RED AUTO       | CP2DRBCLRA |
| E0276V00        | 04380              | CP2D RED BLOOD CELLS LEUKOCYTES REDUCED   | CP2DRBCLR  |
| E0276X00        | 04380              | CP2D RED BLOOD CELLS LEUKO RED AUTO BIO   | CP2DRBCLRA |
| E0283100        | 04081              | CP2D RED BLOOD CELLS LOW VOLUME AUTO      | CPRDRBCLVA |
| E0283V00        | 04081              | CP2D RED BLOOD CELLS LOW VOLUME           | CP2DRBCLV  |
| E0283X00        | 04081              | CP2D RED BLOOD CELLS LOW VOLUME AUTO BIO  | CP2DRBCLVA |
| E0316100        | 04210              | AS-1 RED BLOOD CELLS AUTO                 | AS1RBCAUTO |
| E0316V00        | 04210              | AS-1 RED BLOOD CELLS                      | AS1RBC     |
| E0316X00        | 04210              | AS-1 RED BLOOD CELLS AUTO BIO             | AS1RBCAUTO |
| E0317V00        | 25001              | AS-1 RBC FOR MANUFACTURING USE ONLY       | RBCMANAS1  |
| E0331V00        | 05210              | AS-1 RED BLOOD CELLS IRRADIATED           | AS1RBCIRR  |
| E0332V00        | 05710              | AS-1 RBC LEUKOCYTES REDUCED IRRADIATED    | AS1LRIRR   |
| E0336100        | 04710              | AS-1 RED BLOOD CELLS LEUKO RED AUTO       | AS1RBCLRAU |
| E0336V00        | 04710              | AS-1 RED BLOOD CELLS LEUKOCYTES REDUCED   | AS1RBCLR   |
| E0336X00        | 04710              | AS-1 RED BLOOD CELLS LEUKO RED AUTO BIO   | AS1RBCLRAU |
| E0341V00        | 04230              | AS-3 RED BLOOD CELLS (from 450 mL WB)     | AS3RBC450  |
| E0356V00        | 05230              | AS-3 RED BLOOD CELLS IRR(from 450 mL WB)  | AS3RBC450I |
| E0366100        | 04230              | AS-3 RED BLOOD CELLS AUTO                 | AS3RBCAUTO |
| E0366V00        | 04230              | AS-3 RED BLOOD CELLS                      | AS3RBC     |
| E0366X00        | 04230              | AS-3 RED BLOOD CELLS AUTO BIO             | AS3RBCAUTO |
| E0367V00        | 25001              | AS-3 RBC FOR MANUFACTURING USE ONLY       | RBCMANAS3  |
| E0378V00        | 05230              | AS-3 RED BLOOD CELLS IRRADIATED           | AS3RBCIRR  |
| E0379V00        | 05730              | AS-3 RBC LEUKOCYTES REDUCED IRRADIATED    | AS3LRIRR   |
| E0382100        | 04730              | AS-3 RED BLOOD CELLS LEUKO RED AUTO       | AS3RBCLRAU |
| E0382V00        | 04730              | AS-3 RED BLOOD CELLS LEUKOCYTES REDUCED   | AS3RBCLR   |
| E0382X00        | 04730              | AS-3 RED BLOOD CELLS LEUKO RED AUTO BIO   | AS3RBCLRAU |
| E0385V00        | 04250              | AS-5 RED BLOOD CELLS (FROM 450 ML WB)     | AS5RBC450  |
| E0397V00        | 05250              | AS-5 RBC IRRADIATED (FROM 450 ML WB)      | AS5IRR450  |
| E0398V00        | 05750              | "AS-5 RBC LR, IRRADIATED (450mL)"         | AS5LRIR450 |
| E0401V00        | 04750              | "AS-5 RED BLOOD CELLS, LR (450mL)"        | AS5LR450   |
| E0404V00        | 04250              | AS-5 RED BLOOD CELLS                      | AS5RBC     |
| E0419V00        | 05250              | AS-5 RED BLOOD CELLS IRRADIATED           | AS5RBCIRR  |
| E0420V00        | 05750              | AS-5 RBC LEUKOCYTES REDUCED IRRADIATED    | AS5LEUKOIR |
| E0424V00        | 04750              | "AS-5 RED BLOOD CELLS, LEUKOCYTE REDUCED" | AS5RBCLR   |
| E0463100        | 04211              | AS-1 RED BLOOD CELLS LOW VOLUME AUTO      | AS1RBCLVAU |
| E0463V00        | 04211              | AS-1 RED BLOOD CELLS LOW VOLUME           | AS1RBCLV   |

| ISBT EQUIVALENT | CODABAR EQUIVALENT | TEXT NAME (NOT LABEL TEXT)               | MNEMONIC   |
|-----------------|--------------------|--|------------|
| E0463X00        | 04211              | AS-1 RED BLOOD CELLS LOW VOLUME AUTO BIO | AS1RBCLVAU |
| E0465100        | 04231              | AS-3 RED BLOOD CELLS LOW VOLUME AUTO     | AS3RBCLVAU |
| E0465V00        | 04231              | AS-3 RED BLOOD CELLS LOW VOLUME          | AS3RBCLV   |
| E0465X00        | 04231              | AS-3 RED BLOOD CELLS LOW VOLUME AUTO BIO | AS3RBCLVAU |
| E0661V00        | 05741              | AS-3 RBC PHERESIS LEUKOREduced IRR       | AS3LRIRR   |
| E0668V00        | 05741              | AS-3 RBC PHERESIS LEUKOREduced IRR BAG 1 | AS3LRIRR1  |
| E0669V00        | 05761              | AS-3 RBC PHERESIS LEUKOREduced IRR BAG 2 | AS3LRIRR2  |
| E0676V00        | 05241              | AS-3 RBC PHERESIS IRRADIATED (BAG 1)     | AS3IRR     |
| E0677V00        | 05261              | AS-3 RBC PHERESIS IRRADIATED (BAG 2)     | AS3RBCIRR  |
| E0678V00        | 04741              | AS-3 RBC PHERESIS LEUKO REDUCED          | AS3PHLR    |
| E0685V00        | 04741              | AS-3 RBC PHERESIS LEUKO REDUCED (BAG 1)  | AS3PHLR1   |
| E0686V00        | 04761              | AS-3 RBC PHERESIS LEUKO REDUCED (BAG 2)  | AS3PHLR2   |
| E0693V00        | 04241              | AS-3 RED BLOOD CELLS PHERESIS (BAG 1)    | AS3RBCPH1  |
| E0694V00        | 04261              | AS-3 RED BLOOD CELLS PHERESIS (BAG 2)    | AS3RBCPH2  |
| E0701100        | 18201              | FRESH FROZEN PLASMA AUTO                 | FFPAUTO    |
| E0701V00        | 18201              | FRESH FROZEN PLASMA                      | FFP        |
| E0701X00        | 18201              | FRESH FROZEN PLASMA AUTO BIO             | FFPAUTOBIO |
| E0707V00        | 18201              | FRESH FROZEN PLASMA                      | FFP        |
| E0713V00        | 18201              | FRESH FROZEN PLASMA (CP2D)               | FFPCP2D    |
| E0869100        | 18211              | FRESH FROZEN PLASMA PHERESIS AUTO        | FFPPHAUTO  |
| E0869V00        | 18211              | FRESH FROZEN PLASMA PHERESIS             | FFPPH      |
| E0869VA0        | 48211              | FRESH FROZEN PLASMA PHERESIS DIV (BAG 1) | FFPDIVPH1  |
| E0869VB0        | 48212              | FRESH FROZEN PLASMA PHERESIS DIV (BAG 2) | FFPDIVPH2  |
| E0869VC0        | 48213              | FRESH FROZEN PLASMA PHERESIS DIV (BAG 3) | FFPDIVPH3  |
| E0869VD0        | 48214              | FRESH FROZEN PLASMA PHERESIS DIV (BAG 4) | FFPDIVPH4  |
| E0869VE0        | 48215              | FRESH FROZEN PLASMA PHERESIS DIV (BAG 5) | FFPDIVPH5  |
| E0869VFO        | 48216              | FRESH FROZEN PLASMA PHERESIS DIV (BAG 6) | FFPDIVPH6  |
| E0869VG0        | 48217              | FRESH FROZEN PLASMA PHERESIS DIV (BAG 7) | FFPDIVPH7  |
| E0869VH0        | 48218              | FRESH FROZEN PLASMA PHERESIS DIV (BAG 8) | FFPDIVPH8  |
| E0869X00        | 18211              | FRESH FROZEN PLASMA PHERESIS AUTO BIO    | FFPPHAUTO  |
| E2457V00        | 18501              | LIQUID PLASMA                            | LIQPLASMA  |
| E2553100        | 18435              | PLASMA CRYOPRECIPITATE REDUCED AUTO      | PLCRYOREAU |
| E2553V00        | 18435              | PLASMA CRYOPRECIPITATE REDUCED           | PLCRYOREDU |
| E2553X00        | 18435              | PLASMA CRYOPRECIPITATE REDUCED AUTO BIO  | PLCRYOREAU |
| E2555100        | 18101              | PLASMA FROZEN WITHIN 24 HRS AUTO         | FRZPL<24AU |
| E2555V00        | 18101              | PLASMA FROZEN WITHIN 24 HRS AFTER PHLEB  | FRZPLAS<24 |
| E2555X00        | 18101              | PLASMA FROZEN WITHIN 24 HRS AUTO BIO     | FRPL<24AUB |
| E2560V00        | 18101              | PLASMA FRZ W/IN 24HRS AFTER PHLEB CPDA-1 | FRZPLAS<24 |
| E2617V00        | 18435              | PLASMA CRYOPRECIPITATE REDUCED           | PLCRYOREDU |
| E2619V00        | 18101              | PLASMA FROZEN WITHIN 24 HRS AFTER PHLEB  | FRZPLAS<24 |
| E2824V00        | 12000              | PLATELETS                                | PLT        |
| E2826V00        | 12600              | PLATELETS IRRADIATED                     | PLTIRR     |
| E2860V00        | 12000              | PLATELETS                                | PLT        |
| E2862V00        | 12600              | PLATELETS IRRADIATED                     | PLTIRR     |
| E3046V00        | 12810              | "PLATELETS PHERESIS LR IRR, NON-SPLIT"   | PTPHLRIRNS |
| E3056V00        | 12810              | PLATELETS PHERESIS LEUKO REDUCED IRR     | PLTPHLRIR  |
| E3057V00        | 12850              | PLATELETS PHERESIS LEUKOREduced IRR BAG2 | PLTPHLRIR2 |

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|-----------------|--------------------|--|------------|
| E3058V00        | 12880              | PLATELETS PHERESIS LEUKOREduced IRR BAG3 | PLTPHLRIR3 |
| E3071V00        | 12610              | PLATELETS PHERESIS IRRADIATED            | PLTPHIRR   |
| E3077V00        | 12710              | "PLATELETS PHERESIS LR, NON-SPLIT"       | PLTPHLR-NS |
| E3087100        | 12710              | PLATELETS PHERESIS LR AUTO               | PLTPHLRAUT |
| E3087V00        | 12710              | PLATELETS PHERESIS LEUKOCYTES REDUCED    | PLTPHLR    |
| E3087X00        | 12710              | PLATELETS PHERESIS LR AUTO BIO           | PLTPHLRAUT |
| E3088100        | 12750              | PLATELETS PHERESIS LR BAG 2 AUTO         | PLTPHLR2AU |
| E3088V00        | 12750              | PLATELETS PHERESIS LEUKOREduced BAG 2    | PLTPHLR2   |
| E3088X00        | 12750              | PLATELETS PHERESIS LR BAG 2 AUTO BIO     | PLTPHLR2AU |
| E3089100        | 12780              | PLATELETS PHERESIS LR BAG 3 AUTO         | PLTPHLR3AU |
| E3089V00        | 12780              | PLATELETS PHERESIS LEUKOREduced BAG 3    | PLTPHLR3   |
| E3089X00        | 12780              | PLATELETS PHERESIS LR BAG 3 AUTO BIO     | PLTPHLR3AU |
| E3102100        | 12010              | PLATELETS PHERESIS AUTO                  | PLTPHAUTO  |
| E3102V00        | 12010              | PLATELETS PHERESIS                       | PLTPH      |
| E3102X00        | 12010              | PLATELETS PHERESIS AUTO BIO              | PLTPHAUTO  |
| E3103100        | 12050              | PLATELETS PHERESIS (BAG 2) AUTO          | PLTPH2AUTO |
| E3103V00        | 12050              | PLATELETS PHERESIS (BAG 2)               | PLTPH2     |
| E3103X00        | 12050              | PLATELETS PHERESIS (BAG 2) AUTO BIO      | PLTPH2AUTO |
| E3104100        | 12080              | PLATELETS PHERESIS (BAG 3) AUTO          | PLTPH3AUTO |
| E3104V00        | 12080              | PLATELETS PHERESIS (BAG 3)               | PLTPH3     |
| E3104X00        | 12080              | PLATELETS PHERESIS (BAG 3) AUTO BIO      | PLTPH3AUTO |
| E3673V00        | 16411              | GRANULOCYTES-PHERESIS                    |            |
| E3691V00        | 16711              | GRANULOCYTES PLATELETS PHERESIS          | GRANPLTPH  |
| E3696V00        | 16810              | GRANULOCYTES PLATELETS PHERESIS IRRAD    | GRANPLTIRR |
| E3752V00        | 16401              | LEUKOCYTES                               | LEUKO      |
| E4140V00        | 04941              | RBC PHERESIS WASHED                      | RBCPHWASH  |
| E4143V00        | 05941              | AS-3 RBC PHR WASHED IRR                  | AS3WIRR    |
| E4144V00        | 06041              | RBC PHR WASHED LEUKOR                    | AS3WLR     |
| E4145V00        | 06141              | RBC PHR WASHED LEUKO REDUCED IRR         | RBCWALRIRR |
| E4519100        | 06800              | RBC LEUKOCYTES REDUCED DEGLYC AUTO       | RBCLRDGLAU |
| E4519V00        | 06800              | RBC LEUKOCYTES REDUCED DEGLYCEROLIZED    | RBCLRDGL   |
| E4519X00        | 06800              | RBC LEUKOCYTES REDUCED DEGLYC AUTO BIO   | RBCLRDGLAU |
| E4520100        | 06400              | RBC DEGLYCEROLIZED AUTO                  | RBCDGLAUTO |
| E4520V00        | 06400              | RBC DEGLYCEROLIZED                       | RBCDGL     |
| E4520X00        | 06400              | RBC DEGLYCEROLIZED AUTO BIO              | RBCDGLAUTO |
| E4521V00        | 07800              | RBC LEUKOCYTES REDUCED DEGLYC IRR        | RBCLRDGIR  |
| E4522V00        | 07400              | RBC DEGLYCEROLIZED IRRADIATED            | RBCDEGLIRR |
| E4526V00        | 03320              | AS-1 RBC PHERESIS LR IRR                 | AS1PHLRIR  |
| E4527V00        | 03320              | AS-1 RBC PHERESIS LR IRR (BAG 1)         | AS1PHLRIR1 |
| E4528V00        | 03330              | AS-1 RBC PHERESIS LR IRR (BAG 2)         | AS1PHLRIR2 |
| E4529V00        | 03380              | AS-1 RBC PHERESIS IRR (BAG 1)            | AS1PHIR2   |
| E4530V00        | 03390              | AS-1 RBC PHERESIS IRR (BAG 2)            | AS1PHIR2   |
| E4531V00        | 03820              | AS-1 RBC PHERESIS LR BY FILTRATION       | AS1RBCLRF  |
| E4532V00        | 03820              | AS-1 RED BLOOD CELLS PHERESIS LR (BAG 1) | AS1RBCLR1  |
| E4533V00        | 03311              | AS-1 RED BLOOD CELLS PHERESIS LR (BAG 2) | AS1RBCLR2  |
| E4534V00        | 03360              | AS-1 RED BLOOD CELLS PHERESIS (BAG 1)    | AS1RBC     |
| E4535V00        | 03370              | AS-1 RED BLOOD CELLS PHERESIS (BAG 2)    | AS1RBC2    |

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|-----------------|--------------------|---|-------------|
| E4536V00        | 04271              | AS-3 RBC PHERESIS (ACDA)                  | ACDARBCPH   |
| E4537V00        | 05271              | AS-3 RBC PHER (ACDA) IRRADIATED           | ACDAIRR     |
| E4538V00        | 05771              | AS-3 RBC PHER (ACDA) LEUKORED IRR         | ACDALRIRR   |
| E4539V00        | 05771              | AS-3 RBC PHER (ACDA) LEUKORED IRR (BAG 1) | ACDALRIRR1  |
| E4540V00        | 05781              | AS-3 RBC PHER (ACDA) LEUKORED IRR (BAG 2) | ACDALRIRR2  |
| E4541V00        | 05271              | AS-3 RBC PHER (ACDA) IRRADIATED (BAG 1)   | ACDAIRR1    |
| E4542V00        | 05281              | AS-3 RBC PHER (ACDA) IRRADIATED (BAG 2)   | ACDAIRR2    |
| E4543V00        | 04771              | AS-3 RBC PHER (ACDA) LEUKOREduced         | ACDAPHLR    |
| E4544V00        | 04771              | AS-3 RBC PHER (ACDA) LEUKOREduced (BAG 1) | ACDAPHLR1   |
| E4545V00        | 04791              | AS-3 RBC PHER (ACDA) LEUKOREduced (BAG 2) | ACDAPHLR2   |
| E4546V00        | 04271              | AS-3 RBC PHERESIS (ACDA) (BAG 1)          | ACDARBCPH1  |
| E4547V00        | 04281              | AS-3 RBC PHERESIS (ACDA) (BAG 2)          | ACDARBCPH2  |
| E4560V00        | 06141              | RBC PHR WASHED LEUKOR IRR (BAG 1)         | AS3WLRIRR1  |
| E4561V00        | 06161              | RBC PHR WASHED LEUKOR IRR (BAG 2)         | AS3WLRIRR2  |
| E4562V00        | 05941              | AS-3 RBC PHR WASHED IRR (BAG 1)           | AS3WIRR1    |
| E4563V00        | 05961              | AS-3 RBC PHR WASHED IRR (BAG 2)           | AS3WIRR2    |
| E4564V00        | 06041              | RBC PHR WASHED LEUKOR (BAG 1)             | AS3WLR1     |
| E4565V00        | 06061              | RBC PHR WASHED LEUKOR (BAG 2)             | AS3WLR2     |
| E4566V00        | 04941              | RBC PHERESIS WASHED (BAG 1)               | RBCPHWASH   |
| E4567V00        | 04961              | RBC PHERESIS WASHED (BAG 2)               | RBCPHWASH2  |
| E4580V00        | 06411              | RBC PHERESIS DEGLYCEROLIZED               | RBCPHDEG    |
| E4581V00        | 07411              | RBC PHERESIS DEGLYCEROLIZED IRR           | RBCPHDEIRR  |
| E4582V00        | 07841              | RBC PHERESIS LEUKORED DEGLYC IRR          | RBCLRDEIRR  |
| E4583V00        | 07841              | RBC PHERESIS LEUKORED DEGLYC IRR (BAG 1)  | RBCLR DGIR1 |
| E4584V00        | 07851              | RBC PHERESIS LEUKORED DEGLYC IRR (BAG 2)  | RBCLR DGIR2 |
| E4585V00        | 07411              | RBC PHERESIS DEGLYCEROLIZED IRR (BAG 1)   | PBCPHDEIR1  |
| E4586V00        | 07451              | RBC PHERESIS DEGLYCEROLIZED IRR (BAG 2)   | RBCPHDEIR2  |
| E4587V00        | 06811              | RBC PHERESIS LEUKO REDUCED DEGLYC         | RBCLRDEG    |
| E4588V00        | 06811              | RBC PHERESIS LEUKO REDUCED DEGLYC (BAG 1) | RBCLR DG1   |
| E4589V00        | 06861              | RBC PHERESIS LEUKO REDUCED DEGLYC (BAG 2) | RBCLR DG2   |
| E4590V00        | 06411              | RBC PHERESIS DEGLYCEROLIZED (BAG 1)       | RBCPHDE1    |
| E4591V00        | 06451              | RBC PHERESIS DEGLYCEROLIZED (BAG 2)       | RBCPHDE2    |
| E4633V00        | 06880              | RBC LEUKOCYTES REDUCED REJUV DEGLYC       | RBCLRRJDEG  |
| E4634V00        | 07880              | RBC LEUKO REDUCED REJUV DEGLYC IRR        | RBCLRJDGIR  |
| E4636100        | 12011              | PLATELETS PHERESIS VARIABLE CONTENT AUTO  | PLTPHVCAUT  |
| E4636V00        | 12011              | PLATELETS PHERESIS VARIABLE CONTENT       | PHTPHVC     |
| E4636X00        | 12011              | PLATELETS PHERESIS VAR CONT AUTO BIO      | PLTPHVCAUT  |
| E4644100        | 12711              | PLATELETS PHERESIS LR VAR CON AUTO        | PTPHLRVCAU  |
| E4644V00        | 12711              | PLATELETS PHERESIS LEUKORED VARIABLE CON  | PLTPHLRVC   |
| E4644X00        | 12711              | PLATELETS PHERESIS LR VAR CON AUTO BIO    | PTPHLRVCAU  |
| E4645100        | 12751              | PLATELETS PHER LR VAR CON BAG 2 AUTO      | PTPHLRVC2A  |
| E4645V00        | 12751              | PLATELET PHERESIS LEUKORED VAR CON BAG 2  | PLTPHLRVC2  |
| E4645X00        | 12751              | PLATELETS PHER LR VAR CON BAG 2 AUTO BIO  | PTPHLRVC2A  |
| E4646100        | 12781              | PLATELETS PHER LR VAR CON BAG 3 AUTO      | PTPHLRVC3A  |
| E4646V00        | 12781              | PLATELET PHERESIS LEUKORED VAR CON BAG 3  | PLTPHLRVC3  |
| E4646X00        | 12781              | PLATELETS PHER LR VAR CON BAG 3 AUTO BIO  | PTPHLRVC3A  |
| E4651V00        | 19501              | RECOVERED PLASMA LIQUID                   | REPLASLIQU  |

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|-----------------|--------------------|--|-------------|
| E4662V00        | 18201              | FRESH FROZEN PLASMA (CPDA-1)             | FFPCPDA-1   |
| E5018100        | 04051              | CPD RED BLOOD CELLS LOW VOLUME AUTO      | CPDRCLVAUT  |
| E5018V00        | 04051              | CPD RED BLOOD CELLS LOW VOLUME           | CPDRBCLV    |
| E5018X00        | 04051              | CPD RED BLOOD CELLS LOW VOLUME AUTO BIO  | CPDRCLVAUT  |
| E5019V00        | 06211              | RBC PHERESIS FROZEN (BAG 1)              | RBCPHFR1    |
| E5020V00        | 06251              | RBC PHERESIS FROZEN (BAG 2)              | RBCPHFR2    |
| E5021V00        | 06780              | RBC LEUKOCYTE REDUCED REJUVENATED FROZEN | RBCLRREJFR  |
| E5079100        | 06200              | RBC FROZEN AUTO                          | RBCFRZAUTO  |
| E5079V00        | 06200              | RBC FROZEN                               | RBCFRZ      |
| E5079X00        | 06200              | RBC FROZEN AUTO BIO                      | RBCFRZAUTO  |
| E5081V00        | 07200              | RBC FROZEN IRRADIATED                    | RBCFRZIRR   |
| E5085100        | 06700              | RBC LEUKOCYTES REDUCED FROZEN AUTO       | RBCLRFRZAU  |
| E5085V00        | 06700              | RBC LEUKOCYTES REDUCED FROZEN            | RBCLRFRZ    |
| E5085X00        | 06700              | RBC LEUKOCYTES REDUCED FROZEN AUTO BIO   | RBCLRFRZAU  |
| E5098V00        | 06211              | RBC PHERESIS FROZEN                      | RBCPHFR     |
| E5100V00        | 07211              | RBC PHERESIS FROZEN IRRADIATED (BAG 1)   | RBCPHFRIR1  |
| E5101V00        | 07251              | RBC PHERESIS FROZEN IRRADIATED (BAG 2)   | RBCPHFRIR2  |
| E5105V00        | 06711              | RBC PHERESIS LEUKO REDUCED FROZEN        | RBCLRFZ     |
| E5106V00        | 06711              | RBC PHERESIS LEUKO REDUCED FROZEN (BAG1) | RBCLRFZ1    |
| E5107V00        | 06761              | RBC PHERESIS LEUKO REDUCED FROZEN (BAG2) | RBCLRFZ2    |
| E5124V00        | 05731              | AS-3 RBC LOW VOLUME LEUKO RED IRR        | AS3RLVIRLR  |
| E5155V00        | 04361              | CPDA-1 RBC LEUKO REDUCED LOW VOLUME      | CPDA1LRLV   |
| E5160100        | 04900              | RBC WASHED AUTO                          | RBWASHAUTO  |
| E5160V00        | 04900              | RBC WASHED                               | RBWASH      |
| E5165100        | 10100              | CRYOPRECIPITATED AHF AUTO                | CRYOAUTO    |
| E5165V00        | 10100              | CRYOPRECIPITATED AHF                     | CRYO        |
| E5165X00        | 10100              | CRYOPRECIPITATED AHF AUTO BIO            | CRYOAUTOBIO |
| E5168100        | 05900              | RBC WASHED IRRADIATED AUTO               | RBCWASIRAU  |
| E5168V00        | 05900              | RBC WASHED IRRADIATED                    | RBCWASHIRR  |
| E5169V00        | 06000              | RBC WASHED LEUKOCYTES REDUCED            | RBCWALEURE  |
| E5170V00        | 06100              | RBC WASHED LEUKOCYTES REDUCED IRRAD      | RBCWALRIR   |
| E5171100        | 06300              | RBC FROZEN REJUVENATED AUTO              | RCFRZRJAUT  |
| E5171V00        | 06300              | RBC FROZEN REJUVENATED                   | RBCFRZRJV   |
| E5171X00        | 06300              | RBC FROZEN REJUVENATED AUTO BIO          | RCFZRJVAUT  |
| E5174100        | 06500              | RBC REJUVENATED DEGLYEROLIZED AUTO       | RCRJVDGLAUT |
| E5174V00        | 06500              | RBC REJUVENATED DEGLYEROLIZED            | RBCRJVDEGL  |
| E5174X00        | 06500              | RBC REJUVENATED DEGLYEROLIZED AUTO BIO   | RCRJVDGLAUT |
| E5176V00        | 07300              | RBC FROZEN REJUVENATED IRRADIATED        | RBCFRREJIR  |
| E5180V00        | 07500              | RBC REJUVENATED DEGLYCEROLIZED IRRAD     | RBCREDEIRR  |

| ISBT<br>EQUIVALENT | CODABAR<br>EQUIVALENT | TEXT NAME (NOT LABEL TEXT) | MNEMONIC |
|--------------------|-----------------------|----------------------------|----------|
|                    |                       |                            |          |