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**To: Blood Bank Directors, Supervisors and Personnel**  
**From: Robert R. Rees, MHA, Manager, Blood Bank Program**  
**Martha M. Smith, MPA, Director**  
**Clinical Laboratory Improvement Services (CLIS)**  
**Public Health and Environmental Laboratories (PHEL)**  
**Subject: 2016 and 2017 Statistical Summaries of Blood Use in New Jersey**

The Department has compiled the information regarding blood and blood component collections, transfusions and other applicable blood related activities to prepare the “2016 and 2017 Statistical Summaries of Blood Use in New Jersey” report in order to provide the regulated community an overview of the blood collections and transfusions in New Jersey. The information was submitted by 6 Blood Centers (BC); 72 Hospitals; 25 Umbilical Cord Blood (UCB) and Hematopoietic Progenitor Cell (HPC) facilities; 2 Brokers; 28 Out of Hospital Transfusion (OOHT) facilities which includes 17 off-site and 11 on-site; 50 Dialysis facilities and 85 Perioperative Autologous Blood Collection/Administration (PABCA) facilities which includes 17 hospitals, 60 Ambulatory Surgery Centers (ASC) and 8 Licensed Contract Providers (LCP). CLIS hopes this information is helpful and welcomes any comments and suggestions you may have towards improving the value and usefulness of this report for future years. CLIS would like to thank the licensed facilities that submitted statistical data.

New Jersey continues to have a deficit in blood collection and must regularly import blood from other states to meet the transfusion needs of our citizens. Refer to Tables I, II and III and the summaries of each.

### **Table I Blood Collections in New Jersey**

As noted in Table I, the total blood collected in New Jersey has continually decreased.

BC were responsible for the collection of 219,842 and 213,019 units or 96%, in 2016 and 2017; while hospitals collected 9,186 and 9,488 units or 4% of the total blood collected in 2016 and 2017. Autologous donations decreased from 1,119 units or 0.5% in 2015 to 443 units or 0.2% in 2017 of the total blood collected while directed donations decreased from 709 units or 0.3% in 2015 to 385 units or 0.2% in 2017.

Four BC and the hospitals that collect blood reported a decrease of 14,935 units of blood collected in 2016 as compared to their 2015 total collections. Two BC reported an increase of 644 units of blood collected in 2016 as compared to their 2015 total collections. This resulted in a net decrease of 14,291 units of blood collected or 5.9% in 2016 as compared to the 2015 total collections.

Five BC reported a decrease of 9,697 units of blood collected in 2017 as compared to their 2016 total collections. One BC and the hospitals that collect blood reported an increase of 3,176 units of blood collected in 2017 as compared to their 2016 total collections. This resulted in a net decrease of 6,521 units of blood collected or 2.8% in 2017 as compared to the 2016 total collections.

Five BC and two hospitals that collect blood reported collecting 29,658 RBC units from single and/or double red cell apheresis donors in 2016, an increase of 1,968 units or 7.1% when compared to 27,690 RBC units collected in 2015. Six BC and two hospitals that collect blood reported collecting 31,656 RBC units from single and/or double red cell apheresis donors in 2017, an increase of 1,998 units or 6.7% when compared to 29,658 RBC units collected in 2016.

## **Table II Number of Red Blood Cell (RBC) and Whole Blood (WB) Units Collected vs. Number of RBC and WB Units Transfused**

CLIS has been tracking and reporting the total blood collected and RBC/WB units transfused annually in New Jersey to determine statewide trends in the collection and transfusion of blood.

The total blood collected in New Jersey has failed to meet the transfusion needs of NJ citizens since 1996 with the exceptions of 2001 and 2008. It was observed that the total blood collected decreased from 243,319 units in 2015 to 222,507 units in 2017 or by 8.5%.

CLIS observed that the total number of WB and RBC transfusions in 2016 was 288,096 units, an increase of 391 units or 0.1% from 2015 but decreased 8,242 units or by 2.9% in 2017.

The total number of WB and RBC units collected versus transfused from 2008 to 2017 is graphically illustrated in the Table II chart.

## **Table III Allogeneic Blood Collections and Distribution**

In 2017, the total allogeneic blood collected by American Red Cross Penn-Jersey Region (ARC), New Jersey Blood Services/NYBC (NJBS), the Community Blood Centers (CBC), and the hospital blood banks was 221,679 units and of that allogeneic blood collected, 12,446 units were discarded for the reasons noted in the summary of Table IV – Discard Totals.

ARC has consistently shown a significant deficit in the amount of allogeneic blood collected and available for transfusion when compared to the number of allogeneic units distributed in New Jersey. CLIS observed the number of allogeneic units collected and available for distribution by ARC decreased 4.4% or 4,041 units from 2015 to 2017. ARC distributed 120,714 allogeneic units to New Jersey in 2017, an increase of 5.3% or 6,076 units when compared to 2015. ARC experienced a deficit of 33,237 allogeneic units in 2017.

NJBS has consistently shown a significant surplus in the amount of blood collected and available for transfusion when compared to the number of allogeneic units distributed in New Jersey. The number of allogeneic units collected and available for distribution by NJBS decreased 4.4% or 2,534 units from 2015 to 2017. NJBS distributed 44,145 allogeneic units to New Jersey in 2017, an increase of 34.7% or 11,365 units when compared to 2015. NJBS experienced a surplus of 10,557 allogeneic units in 2017.

The CBC have consistently shown a significant deficit in the amount of allogeneic blood collected and available for transfusion when compared to the number of allogeneic units distributed in New Jersey. The number of allogeneic units collected and available for distribution by the CBC decreased 11.6% or 7,598 units from 2015 to 2017. CBC distributed 98,518 allogeneic units to New Jersey in 2017, a decrease of 19.4% or 23,713 units. CBC experienced a deficit of 40,546 allogeneic units in 2017.

Thus, the total supply of allogeneic blood collected in and available for distribution to New Jersey hospitals was 209,233 units and the total allogeneic units distributed to the New Jersey hospitals for transfusion were 274,028. **NOTE: The number of units distributed to New Jersey hospitals includes 1,569 units distributed by two licensed CBCs located out of state.**

The difference between the total available supply of allogeneic blood collected in New Jersey and allogeneic units distributed to New Jersey hospitals for transfusion from 2013 to 2017 can be referenced in Table III and is graphically illustrated in the Table III charts.

#### **Table IV Discard Totals**

In 2017, of the 222,507 units of blood collected by BC and hospitals, 12,516 units or 5.6% were discarded for reasons noted below. NOTE: This discard total does not include the 3,209 units discarded by hospitals that were distributed to them.

#### **Blood Centers**

ARC, NJBS and the CBC reported discarding 12,319 units or 5.8% of their total blood collections in 2017 due to positive/reactive test results or other reasons listed below:

Hepatitis Surface Antigen (HBsAg) – 38
Hepatitis Core Antibody (HBcAb) – 836
Hepatitis C Virus (HCV) – 247
Human Immunodeficiency Virus (HIV) – 117
Human T-Lymphotropic Virus Types I & II (HTLV I/II) – 81
Syphilis – 193
Irregular Antibodies – 163
Donor Deferral - 15
Breakage/Contamination – 2,142
Outdating – 2,289
Other – 6,198 (See below for details)
<ul style="list-style-type: none"> <li>• Incorrect volume (overweight, underweight, quantity not sufficient)</li> <li>• Donor History Questionnaire (DHQ) incomplete; Missing test results</li> </ul>

<ul style="list-style-type: none"> <li>• Product failures (bloody, lipemic, clotted); Chagas; Zika virus</li> </ul>
<ul style="list-style-type: none"> <li>• Temperature failures (storage, transport)</li> </ul>
<ul style="list-style-type: none"> <li>• QA issues (Standard Operating Procedure (SOP) not followed, Quality Control (QC) failures)</li> </ul>

CLIS observed that the total number of collected units discarded by BC decreased from 17,593 in 2015 to 12,319 in 2017. Specifically, the total number of units discarded by ARC, NJBS and CBC decreased from 9.9%, 0.9% and 9.5%, respectively, in 2015 to 6.3%, 0.7% and 9.4%, respectively, in 2017.

**Hospitals**

In 2017, New Jersey hospitals reported discarding a total of 3,406 units (including 197 units collected by and 3,209 units distributed to them). Outdating accounted for 66.0% or 2,232 units that were discarded and of the outdated units, 92.0% or 2,045 were allogeneic units, 8% or 180 were autologous units and 7 were directed units.

The hospitals that collect blood reported discarding 197 units or 2.1% of their total blood collections in 2017 due to positive/reactive test results or other reasons listed below:

Hepatitis Surface Antigen (HBsAg) – 38
Hepatitis Core Antibody (HBcAb) – 25
Hepatitis C Virus (HCV) – 14
Human Immunodeficiency Virus (HIV) – 4
Human T-Lymphotropic Virus Types I & II (HTLV I/II) – 2
Syphilis – 12
Chagas – 3
Irregular Antibodies – 11
Donor Deferral – 4
Breakage/Contamination – 3
Outdating – 36 (Allo-10 / Auto-26)
Other – 82 (See below for details)
<ul style="list-style-type: none"> <li>• Out of refrigerator &gt;30 min. (incl. pneumatic tube issues)</li> </ul>
<ul style="list-style-type: none"> <li>• Wasted by floor (i.e., spiked/not used; IV access lost; RN issues)</li> </ul>
<ul style="list-style-type: none"> <li>• Equipment and/or product failure (incl. filter issues)</li> </ul>
<ul style="list-style-type: none"> <li>• Unacceptable preparation of RBC (incl. clotted and QNS)</li> </ul>

CLIS observed that the total number of units collected and subsequently discarded by hospitals decreased 134 units or 41% in 2017 when compared to 2016 and decreased 155 units or 32% in 2016 when compared to 2015. Also, it was observed that the total number of units discarded by hospitals (collected by and distributed to them) decreased 126 units or 4% in 2017 when compared to 2016 and decreased 1,146 units or 25% in 2016 when compared to 2015.

## **Table V Hemapheresis**

### **Volunteer Apheresis**

Volunteer apheresis collections increased 51,827 units or 79.6% in 2017 from 65,134 units in 2015 to 116,961 units and as reported by four hospitals, five BC, and two plasmapheresis centers. Refer to Table V for the total number of volunteer apheresis donors and units collected from 2015 to 2017.

### **Therapeutic Apheresis**

Therapeutic apheresis procedures reported by hospitals and LCP decreased 19.6% from 4,728 in 2015 to 3,799 in 2017. Refer to Table V for the total number of therapeutic apheresis procedures and patients from 2015 to 2017.

## **Table VI Perioperative Autologous Blood Collection and Administration**

In 2017, twelve hospitals, five LCP and one ASC reported performing 10,167 Intraoperative Autologous Blood Collection and Administration procedures and five hospitals, three LCP and one ASC reported performing 1,013 Post-Operative Autologous Blood Collection and Administration procedures.

Three hospitals, three LCP and one ASC reported performing 420, 48 and 89 Acute Normovolemic Hemodilution (ANH) procedures, respectively.

Two hospitals and six LCP reported collecting/processing/administering 179 and 716 Platelet Rich Plasma (PRP) products, respectively and fifty-six ASC reported collecting/processing/administering 2,186 PRP products.

Refer to Table VI for the total number of different PABCA procedures performed from 2015 to 2017.

## **Table VII Salvaged Plasma**

Refer to Table VII for the total number of units collected and the volume in liters of salvaged plasma that were distributed for further manufacture as reported by licensed plasma brokers, BC and hospitals that collect blood from 2015 to 2017.

## **Table VIII Transfusion Reactions Reported by Hospitals and OOHT Facilities**

The hospitals and transfusion only service facilities (off-site of and within the hospital) reported transfusing 288,096 WB and RBC units and 132,272 blood components in 2016 and 279,854 WB and RBC units and 127,472 blood components in 2017. Of the 420,368 total transfusions in 2016, 1,473 recipients or 0.4% experienced suspected adverse reactions to the transfusions which included three acute hemolytic, one delayed hemolytic and ninety-three delayed serologic and of the 407,326 total transfusions in 2017, 1,459 recipients or 0.4% experienced suspected adverse reactions to the transfusions which included six delayed hemolytic and ninety-four delayed serologic.

In 2016, the three acute hemolytic transfusion reactions occurred within 3 hours of cessation of the transfusions and the recipient's exhibited onset of signs and symptoms of suspected adverse reactions. One reaction was due to the transfusion of an incompatible SDP product, one was due to the transfusion of a least incompatible RBC unit and one was due to the presence of Anti-Di<sup>b</sup>. The delayed hemolytic reaction developed 28 days from cessation of the transfusion and the recipient exhibited onset of signs and symptoms of a suspected adverse reaction. The reaction was due to the presence of newly-identified clinically-significant antibodies to S and HLA.

In 2017, the six delayed hemolytic transfusion reactions developed between 24 hours and 18 days of cessation of the transfusions with a positive direct antiglobulin test (DAT) for antibodies and a positive elution test with an alloantibody present on the transfused red blood cells or a newly-identified red blood cell alloantibody in the recipient's serum. The blood banks detected and identified the following alloantibodies that caused the delayed hemolytic reactions: Fy<sup>3</sup>, Jk<sup>a</sup>, Jk<sup>b</sup>, M and S.

In all delayed serologic transfusion reactions, there were no clinical signs of hemolysis and there was demonstration of newly-identified alloantibodies by either a positive DAT and/or antibody screen and identification. The blood banks detected and identified the following alloantibodies that caused the delayed serologic reactions: C, c, D, E, e, f, M, N, S, U, C<sub>w</sub>, Do<sup>b</sup>, Fy<sup>a</sup>, Fy<sup>b</sup>, He, Jk<sup>a</sup>, Jk<sup>b</sup>, Js<sup>a</sup>, K, K1, Le<sup>a</sup> and Lu<sup>a</sup>.

In the Non-Specific/Other transfusion reactions, the blood banks reported Anxiety, Back Pain, Chest Pain, Dyspnea, Hypotensive, Immune-related (i.e., Cytokines), Nausea/Vomiting, Shortness of Breath (SOB), Tachycardia, Symptoms not related to the transfusion (i.e., Underlying disease), and no evidence of an adverse reaction. Refer to Table VIII for the different types of suspected adverse reactions reported from 2015 to 2017.

### **Table IX Donor Reactions Reported by BC and two Plasmapheresis Centers**

The BC reported a decrease in the number of adverse donor reactions from 5,546 in 2015 to 4,876 in 2017. Refer to Table IX for the specific reaction types and their percentages from 2015 to 2017.

### **Table X Breakdown of WB and RBC Transfusions by Site (Hospital and OOHT Facilities)**

Seventy-two hospitals transfused 271,621 WB and RBC units or 97.1% of the transfusions while sixteen OOHT facilities (off-site) transfused 8,233 WB and RBC units or 2.9% of the transfusions in 2017.

Refer to Table X for the total number of WB and RBC transfusions reported by hospitals and OOHT facilities from 2015 to 2017.

### **Table XI WB, RBC and Other Blood Components Transfused in New Jersey**

Refer to Table XI for the breakdown of the total number of WB, RBC and other blood components transfused in the hospitals and Transfusion Only Services facilities (off-site) from 2015 to 2017. The grand total of transfusions increased from 419,475 in 2015 to 420,368 in 2016 but decreased to 407,326 in 2017.

## **Table XII Hospital and Out of Hospital Use of WB and RBC Categorized by Donor Type and County**

Refer to Table XII for the proportion of WB to RBC units transfused in 2016 and 2017.

In 2016, blood transfusions consisted of 99.9% RBC units and 0.1% WB units which remained the same as in 2015. The number of WB units transfused in 2016 decreased to 166 from 198 in 2015 and the WB units transfused to autologous recipients decreased from one hundred percent to ninety-one percent while nine percent were transfused to allogeneic recipients. For RBC units, allogeneic transfusions accounted for 99.9% and directed accounted for 0.1%.

In 2017, blood transfusions consisted of 100% RBC units and 0% WB units. The number of WB units transfused in 2017 decreased to 120 from 166 in 2016 and the WB units transfused to autologous recipients decreased from ninety-one percent to fifty-seven percent while forty-three percent were transfused to allogeneic recipients. For RBC units, allogeneic transfusions accounted for 99.9% and directed accounted for 0.1%.

## **Table XIII Distribution of Blood to Transfusion Services by County**

Please refer to Table XIII for the distribution of WB and RBC units to New Jersey hospitals by county in 2017. The numbers are reported by the hospitals as compared to those reported by the CBC, ARC and NJBS/NYBC.

## **Errors and Accidents**

The BC, Hospitals that collect blood (CH) and Transfusion Services reported 281 Error/Accident incidents to the Department in 2017 compared to 309 incidents reported in 2016 and 329 reported in 2015. In 2017, 158 incidents were classified as accidents and 123 as errors and of the 158 accidents, 153 or 97% were Post Donation Information (PDI). In 2016, 175 incidents were classified as accidents and 134 as errors and of the 175 accidents, 164 or 94% were PDI. In 2017, 212 incidents were reported by BC, fifty-seven were reported by hospitals and thirteen were reported by CH. In 2016, 222 incidents were reported by BC, eighty-two were reported by hospitals and five were reported by CH.

### **Errors/Accidents reported by BC and CH were as follows:**

- Travel to malarial endemic area; risk factors associated with CJD travel; male donor had sex with another male; female donor had sex with a male who had sex with another male
- Donor diagnosed with Babesiosis (or implicated in possible transfusion transmission of Babesia), Zika Virus, Lyme's Disease, Multiple Myeloma, Factor V Leiden and/or Von Willebrand's Disease
- Donor history of hepatitis, HIV, syphilis, leukemia, melanoma, cancer, cellulitis, sexually-transmitted disease; IV drug or steroid use; accidental needlestick; blood transfusion; previous pregnancy
- Subsequent testing confirmed positive for HCV, HBV, and/or HIV; confirmed positive HBsAg; repeat reactive and/or confirmed positive anti-HBc
- Donor history of receiving a bone and/or dental graft; receiving money for sex; receiving a tattoo and/or self-piercing; exhibiting self-mutilation/cutting

- Donor took Accutane, Aspirin, Aubagio, Avodart, Coumadin, Mesalamine, Plavix, Propecia, Proscar, Warfilone and/or Xarelto medications
- Donor presented as female with prior history of donations as a male and donor presented as male with prior history of donations as a female
- Duplicate donors due to incomplete and/or incorrect donor history records (discrepancies with name, date of birth), improper donor health assessments (vital signs, hematocrit) and incorrect review of donor deferral and/or previous donation records (including for RBC/Plasma losses)
- Distribution of RBC units that were hemolyzed/icteric, FFP/RBC units with clots and SDP units that subsequently tested positive for bacteria
- Inappropriate distribution of RBC/SDP units to hospital consignees due to inadequate testing performed (CMV) and/or incorrect test results (Zika virus); inadequate preparation of products (defective leukocyte filters); inadequate and/or incomplete product QC (WBC, hematocrit, antigen typing) and equipment QC (Hemocue, Cell-Dyne); use of expired reagents, culture bottles and/or processing kits
- RBC/SDP units leukocyte reduced and/or irradiated per SOP but relabeled incorrectly and distributed to hospital consignees
- RBC/SDP units distributed to hospital consignees at unacceptable temperatures (use of incorrect shipping containers and/or unacceptable transport packing materials, excessive transport times from BC to hospital)
- Distribution of RBC units with incorrect antigen testing results
- Distribution of products mislabeled with incorrect volumes, DINs, blood types, unit attributes and/or expiration dates/times
- Failure to follow and/or inadequate SOPs (donor screening, product testing, quality control)

**Errors reported by Transfusion Services were as follows:**

- Technical errors in testing/interpretation of antibody screening/identification, antigen typing and/or cross matching (IS only when AHG required, no detection of ABO incompatibility performed)
- Failure of Blood Bank and/or Nursing personnel to positively identify blood/blood components and/or recipients at the time of:
  - Issue from the blood bank and/or Trauma refrigerator
  - Administration, resulting in the transfusion of blood/blood components to incorrect recipients and/or incorrect blood/blood components to recipients
- Issued and transfused RBC and SDP units that were non-irradiated when “irradiated” units were ordered/required; RBC units that were non-leukocyte reduced when “leukocyte reduced” units were ordered; CMV positive units when “CMV negative” units were ordered; and RBC units that were not antigen typed or incorrectly antigen typed for recipients with an antibody
- Issued and/or transfused SDP and FFP units when RBC units were ordered and RBC units when SDP and FFP units were ordered; issued and transfused allogeneic RBC unit when patient had directed unit



- Issued and/or transfused expired units of RBC, FFP and SDP; transfused RBC units beyond the approved timeframe
- Issued and/or transfused blood/blood components with incorrect recipient names/MRNs, DINs, blood types (unit/recipient), unit attributes, volumes and/or expiration dates/times
- Mislabeled and expired specimens used for compatibility testing; expired reagents used for compatibility testing
- Inadequate or incomplete equipment and/or reagent QC
- Blood/blood components issued and transfused but not released electronically in the Blood Bank Computer System; incorrect components issued/released electronically in the Blood Bank Computer System and transfused
- Failure to follow and/or inadequate SOPs (patient testing, administration of blood/blood components, quality control, preventive maintenance)

### **Umbilical Cord Blood Collections**

Twenty-three facilities are licensed by the Department to collect, process and/or store umbilical cord blood (UCB) from prospective mother's in New Jersey. These licensed facilities include twenty out-of-state facilities located in Arizona, California, Colorado, Connecticut, Florida, Georgia, Indiana, Illinois, Kentucky, Massachusetts, Nevada, New York, Puerto Rico and Washington. These facilities reported collecting 6,481 UCB units; processing 4,952 UCB units; storing 4,855 UCB units and transplanting 15 UCB units in 2016 and collecting 5,877 UCB units; processing 4,529 UCB units; storing 4,363 UCB units and transplanting 5 UCB units in 2017.

### **Hematopoietic Progenitor Cell Collections**

Nine facilities are licensed by the Department to collect, process and/or store hematopoietic progenitor cells (HPC) from the citizens of New Jersey. Seven facilities reported performing 1,114 HPC collections in NJ hospitals, processing/storing 964 HPC units for future transplantation and transplanting 1,076 HPC units in 2016. Only two facilities reported statistics in 2017 of which 859 HPC collections were performed in NJ hospitals and 863 HPC units were transplanted. **NOTE:** *The number of transplanted HPC units includes units collected in and stored from previous years.*

### **Other Information Reported to the Department by Hospitals, Transfusion Only Service Facilities (off-site of and within the hospital), and ASCs**

- Fifty-five hospitals reported transfusing 343 patients with 1,104 least incompatible units in 2016 and sixty hospitals reported transfusing 386 patients with 1,202 least incompatible units in 2017.
- Thirteen Transfusion Only Service facilities (off-site of the hospitals) reported transfusing 3,226 Single Donor Platelet (SDP) units and 39 Fresh Frozen Plasma (FFP) units in 2016 and sixteen facilities reported transfusing 4,121 SDP units and 86 FFP units in 2017. **NOTE:** *These figures are included in the transfusions reported by the hospital blood banks providing the blood components to these facilities.*

- In 2016, forty-four licensed facilities (located within the hospitals) reported transfusing 6,429 RBC units, forty-two SDP units, one random platelet unit, 1,091 FFP units and ten Cryoprecipitate units during hemodialysis treatments and twelve licensed Long-Term Acute Care (LTAC) and/or Specialty Care facilities (located within the hospitals) reported transfusing 2,988 RBC units, 232 SDP units, and 146 FFP units.

In 2017, forty-three licensed facilities (located within the hospitals) reported transfusing 5,768 RBC units, twenty-one SDP units, one random platelet unit and 863 FFP units during hemodialysis treatments and eleven licensed Long-Term Acute Care (LTAC) and/or Specialty Care facilities (located within the hospitals) reported transfusing 2,472 RBC units, 125 SDP units, 126 FFP units and 27 Cryoprecipitate units.

**NOTE:** *These figures are included in the transfusions reported by the blood banks in the hospitals where these facilities are located.*

- Fifty-three hospitals and sixteen OOH facilities (off-site) reported performing 4,926 and 1,624 Therapeutic Phlebotomy Collections, respectively, in 2016 and forty-two hospitals and sixteen OOH facilities (off-site) reported performing 4,922 and 2,249 Therapeutic Phlebotomy Collections, respectively, in 2017.
- Seventy-one hospitals reported a total bed capacity of 24,269 beds in 2016 and 24,151 beds in 2017 and sixty-nine hospitals reported performing 535,228 surgical procedures in 2016 and sixty-seven hospitals reported performing 548,145 surgical procedures in 2017.

## NOTES:

- It is the **responsibility** of each licensed facility to ensure that blood collection facilities distributing blood/blood components to them and companies that *contract with them* to perform Perioperative Autologous Blood Collection/Administration procedures (inclusive of providers of Platelet Rich Plasma), umbilical cord blood and/or hematopoietic progenitor cell collections, Therapeutic apheresis procedures, transfusion only services (inclusive of LTAC and/or Specialty Care facilities) and/or dialysis services (inclusive of transfusions performed during hemodialysis treatments) have a blood bank license to operate in New Jersey (*inclusive of companies located out of state*).
- Websites:
  - State of New Jersey: <https://www.nj.gov>
  - Department of Health: <https://www.nj.gov/health>
  - Clinical Laboratory Improvement Services:  
<https://www.nj.gov/health/phel/clinical-lab-imp-services>
- Error/Accident and Transfusion Reaction Reports should be electronically submitted to: [dohbb@doh.nj.gov](mailto:dohbb@doh.nj.gov)
- For questions about this report, please contact Robert Rees at (609) 406-6826 or e-mail Mr. Rees at [Robert.Rees@doh.nj.gov](mailto:Robert.Rees@doh.nj.gov).

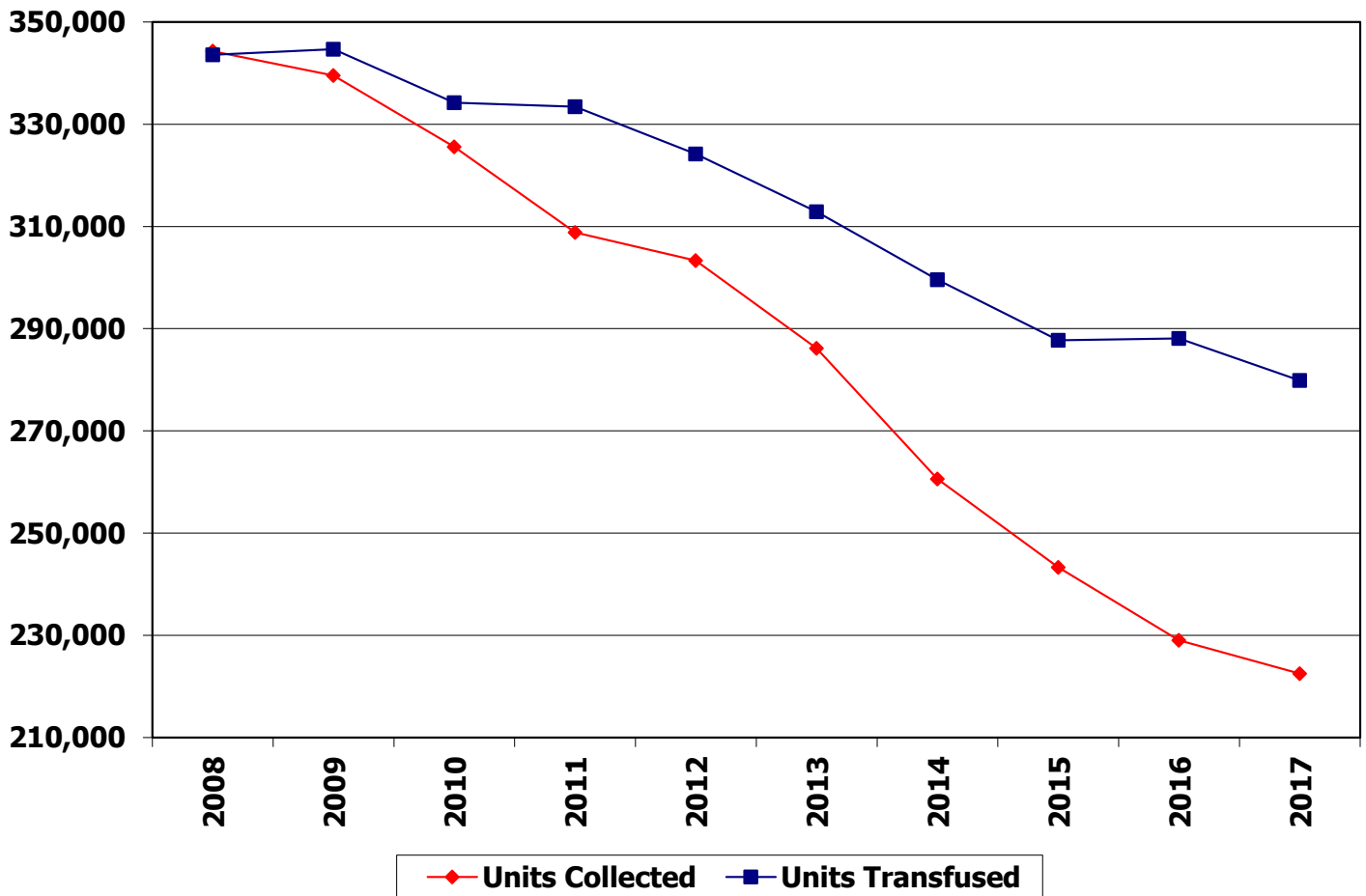
**TABLE I****BLOOD COLLECTIONS IN NEW JERSEY**

<b>Number of Units Drawn</b>	<b>2015</b>	<b>%</b>	<b>2016</b>	<b>%</b>	<b>2017</b>	<b>%</b>
<b>Hospital Blood Banks</b>						
All Donations	10,104	4%	9,186	4%	9,488	4%
Allogeneic	9,612	4%	8,901	4%	9,241	4%
Autologous	309	28%	180	25%	115	26%
Directed	183	26%	105	24%	132	34%
<b>Community Blood Centers*</b>						
All Donations	73,204	30%	65,213	28%	64,314	29%
Allogeneic	72,506	30%	64,779	28%	63,962	29%
Autologous	308	35%	270	38%	185	42%
Directed	300	42%	164	38%	167	43%
<b>ARC Penn-Jersey Region</b>						
All Donations	102,089	42%	96,064	42%	93,540	42%
Allogeneic	101,625	42%	95,733	42%	93,393	42%
Autologous	292	26%	197	28%	91	20%
Directed	172	24%	134	31%	56	15%
<b>NJ Blood Services (NYBC)</b>						
All Donations	57,922	24%	58,565	26%	55,165	25%
Allogeneic	57,748	24%	58,473	26%	55,083	25%
Autologous	120	11%	62	9%	52	12%
Directed	54	8%	30	7%	30	8%
<b>Totals</b>						
All Donations	243,319	100%	229,028	100%	222,507	100%
Allogeneic	241,491	99.2%	227,886	99.5%	221,679	99.6%
Autologous	1,119	0.5%	709	0.3%	443	0.2%
Directed	709	0.3%	433	0.2%	385	0.2%

\* The aggregated numbers shown for Community Blood Centers represent the total number of collections as reported by Central Jersey Blood Center, Community Blood Council of New Jersey, Community Blood Services, and Miller-Keystone Blood Center.

**TABLE II**  
**NUMBER OF WHOLE BLOOD (WB) and RED BLOOD CELL (RBC) UNITS COLLECTED**  
**vs. NUMBER OF WB and RBC UNITS TRANSFUSED**

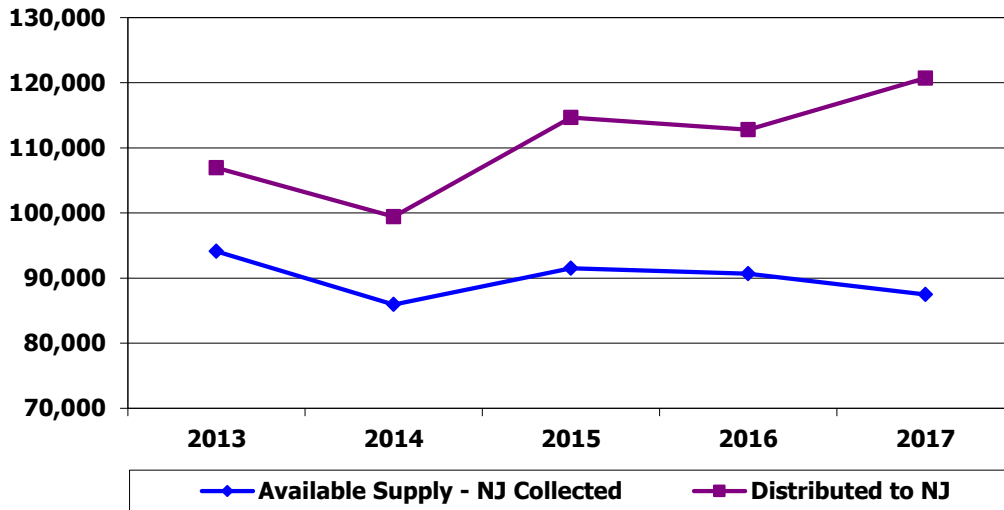
Year	Units Collected	Units Transfused
2008	344,277	343,607
2009	339,512	344,680
2010	325,567	334,236
2011	308,842	333,433
2012	303,291	324,166
2013	286,126	312,893
2014	260,568	299,586
2015	243,319	287,705
2016	229,028	288,096
2017	222,507	279,854



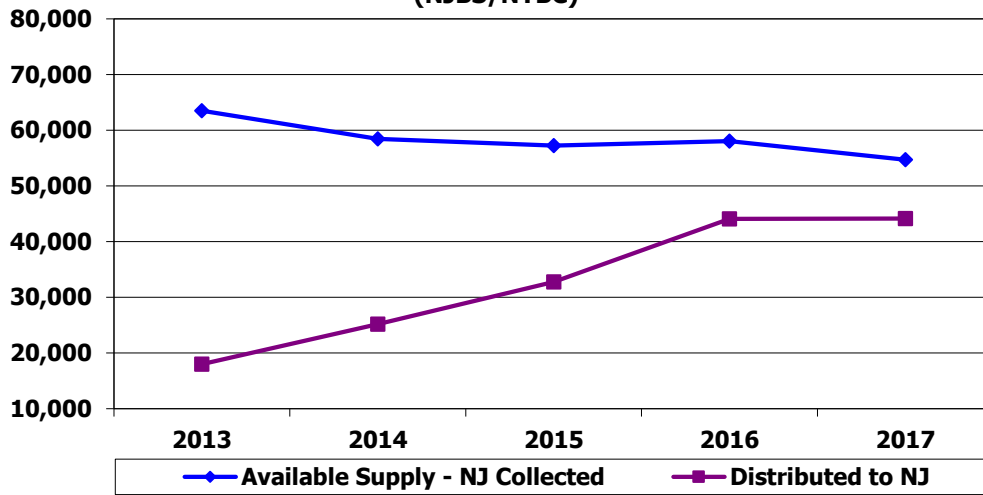
**TABLE III  
ALLOGENEIC BLOOD COLLECTIONS/DISTRIBUTION**

	<b>Year</b>	<b>Collected Units</b>	<b>Discarded Units</b>	<b>Available Supply – NJ Collected Units</b>	<b>Distributed to NJ</b>	<b>Surplus/ Deficit</b>
<b>American Red Cross Penn-Jersey Region</b>	2013	98,769	4,672	94,097	106,913	-12,816
	2014	90,000	4,073	85,927	99,432	-13,505
	2015	101,625	10,107	91,518	114,638	-23,120
	2016	95,733	5,065	90,668	112,792	-22,124
	2017	93,393	5,916	87,477	120,714	-33,237
<b>New Jersey Blood Services/ NYBC</b>	2013	64,066	564	63,502	18,002	45,500
	2014	58,891	459	58,432	25,199	33,233
	2015	57,748	512	57,236	32,780	24,456
	2016	58,473	440	58,033	44,060	13,973
	2017	55,083	381	54,702	44,145	10,557
<b>Community Blood Centers</b>	2013	107,609	6,166	101,443	156,385	-54,942
	2014	99,190	8,966	90,224	153,393	-63,169
	2015	72,506	6,936	65,570	122,231	-56,661
	2016	64,779	5,113	59,666	108,244	-48,578
	2017	63,962	5,990	57,972	98,518	-40,546
<b>Licensed Community Blood Centers (Out of State)</b>	2013	N/A	N/A	N/A	N/A	N/A
	2014	N/A	N/A	N/A	N/A	N/A
	2015	N/A	N/A	N/A	N/A	N/A
	2016	N/A	N/A	N/A	N/A	N/A
	2017	N/A	N/A	N/A	1,569	1,569
<b>Hospital Blood Banks</b>	2013	11,880	511	11,369	11,369	0
	2014	10,064	358	9,706	9,706	0
	2015	9,612	425	9,187	9,187	0
	2016	8,901	276	8,625	8,625	0
	2017	9,241	159	9,082	9,082	0

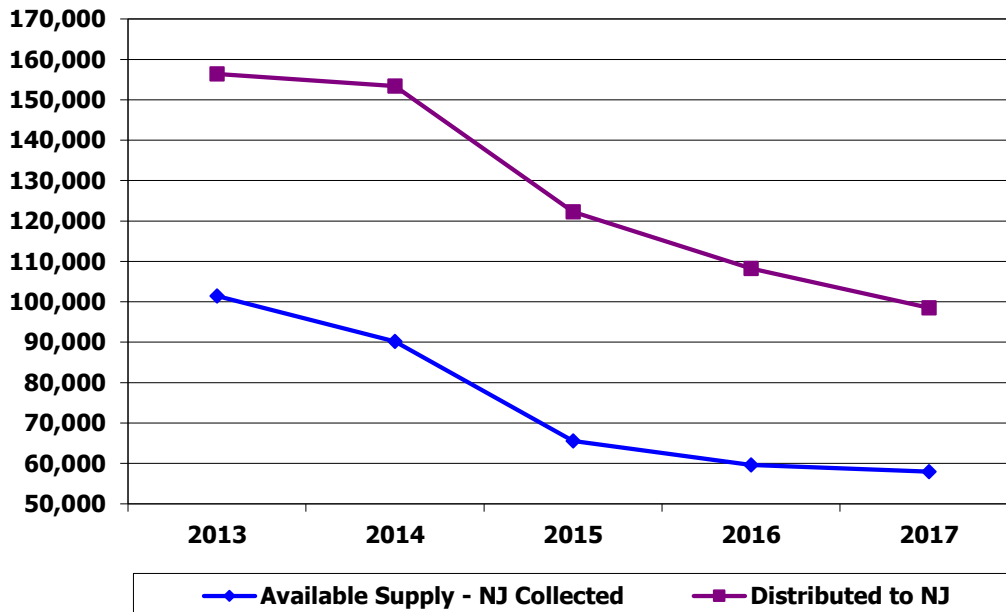
**ALLOGENEIC BLOOD COLLECTIONS  
(ARC PENN-JERSEY)**



**ALLOGENEIC BLOOD COLLECTIONS  
(NJBS/NYBC)**



**ALLOGENEIC BLOOD COLLECTIONS  
(COMMUNITY BLOOD CENTERS)**



**TABLE IV  
NUMBER OF DONOR UNITS DISCARDED**

	<b>Allogeneic</b>		<b>Autologous</b>		<b>Directed</b>		<b>All Types</b>	<b>%</b>
<b>AMERICAN RED CROSS PENN-JERSEY REGION</b>								
2013	4,672		0		0		4,672	4.7%
2014	4,073		0		0		4,073	4.5%
2015	10,107		0		0		10,107	9.9%
2016	5,065		3		10		5,078	5.3%
2017	5,916		5		0		5,921	6.3%
<b>NEW JERSEY BLOOD SERVICES/NYBC</b>								
2013	564		0		0		564	0.9%
2014	459		0		0		459	0.8%
2015	512		0		0		512	0.9%
2016	440		0		0		440	0.8%
2017	381		0		0		381	0.7%
<b>COMMUNITY BLOOD CENTERS</b>								
2013	6,166		18		30		6,214	5.7%
2014	8,966		20		11		8,997	9.0%
2015	6,936		22		16		6,974	9.5%
2016	5,113		10		8		5,131	7.9%
2017	5,990		10		17		6,017	9.4%
<b>ALL HOSPITALS (Units collected in-house and received from contract suppliers)</b>								
2013	3,791		1,122		22		4,935	
2014	4,388		761		53		5,202	
2015	4,041		607		30		4,678	
2016	3,137		359		36		3,532	
2017	3,207		192		7		3,406	
<b>GRAND TOTALS</b>							<b>All Types</b>	
2013							<b>16,385</b>	<b>5.7%</b>
2014							<b>18,731</b>	<b>7.2%</b>
2015							<b>22,271</b>	<b>9.2%</b>
2016							<b>14,181</b>	<b>6.2%</b>
2017							<b>15,725</b>	<b>7.1%</b>

**TABLE V  
HEMAPHERESIS**

<b><u>VOLUNTEER APHERESIS (Blood Centers, Hospitals and 2 Plasmapheresis Centers)</u></b>						
<b>Procedures Performed</b>	<b>2015</b>		<b>2016</b>		<b>2017</b>	
	<b>Donors</b>	<b>Units</b>	<b>Donors</b>	<b>Units</b>	<b>Donors</b>	<b>Units</b>
Plasmapheresis	4,998	35,405	5,395	53,359	8,042	86,256
Leukapheresis	2	2	1	1	1	1
Plateletpheresis	10,696	29,727	7,395	29,683	7,912	30,704
<b><u>THERAPEUTIC APHERESIS (Hospitals and Licensed Contract Providers)</u></b>						
<b>Procedures Performed</b>	<b>Patients</b>	<b>Procedure</b>	<b>Patients</b>	<b>Procedures</b>	<b>Patients</b>	<b>Procedures</b>
Therapeutic Plasmapheresis (TPE)	604	3,906	385	3,813	1,621	3,020
Therapeutic Leukapheresis	23	38	30	54	24	38
Therapeutic Plateletpheresis	8	19	2	3	5	9
RBC Exchange	125	407	131	474	281	451
MNC/DLI	140	358	110	285	98	281

**TABLE VI  
PERIOPERATIVE AUTOLOGOUS BLOOD COLLECTION and ADMINISTRATION  
(Hospitals, ASCs and Licensed Contract Providers)**

<b>Procedures Performed</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>
Intraoperative	12,251	10,359	10,167
Postoperative	3,054	1,231	1,013
Acute Normovolemic Hemodilution	1,320	300	557
Platelet Rich Plasma (Hosp./LCP)	666	1,325	895
Platelet Rich Plasma (ASC)	2,249	2,115	2,186

**TABLE VII  
SALVAGED PLASMA**

	<b>2015</b>		<b>2016</b>		<b>2017</b>	
	<b>Units</b>	<b>Liters</b>	<b>Units</b>	<b>Liters</b>	<b>Units</b>	<b>Liters</b>
Hospital Blood Banks	2,540	629	2,014	565	2,028	576
Community Blood Centers, ARC and NJBS/NYBC	175,511	37,424	186,212	41,292	189,387	41,598
Licensed NJ Brokers	-	34,802	-	3,194	-	2,316
Table represents the method used by blood banks to report these figures to the Department.						



**TABLE VIII  
TRANSFUSION REACTIONS REPORTED BY HOSPITAL BLOOD BANKS**

<b>Reaction Types:</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>
Acute Hemolytic	3*	3*	0
Delayed Hemolytic	8*	1*	6*
Delayed Serologic	63*	93*	94*
Febrile	626	626	658
Allergic	410	483	431
Anaphylactic	3	7	2
Bacterial Contamination	0	1	1
Babesiosis (B. microti)	1	0	0
Malaria (P. Falciparum)	0	0	0
Suspected TRALI	2	3	2
Circulatory Overload	17	8	4
Non-Specific/Other	217*	248*	261*
<b>Totals</b>	<b>1,350</b>	<b>1,473</b>	<b>1,459</b>

\* Please see the summary section for details of the Acute/Delayed Hemolytic, Delayed Serologic & Non-Specific/Other Reactions

**TABLE IX  
DONOR REACTIONS REPORTED BY BLOOD CENTERS and 2 PLASMAPHERESIS CENTERS**

<b>Reaction Types:</b>	<b>2015</b>		<b>2016</b>		<b>2017</b>	
	<b>#</b>	<b>%</b>	<b>#</b>	<b>%</b>	<b>#</b>	<b>%</b>
Slight or Mild	5,196	2.0	3,486	1.3	4,431	1.5
Moderate	319	0.1	372	0.1	326	0.1
Severe	31	0.01	45	0.02	119	0.04
<b>Total</b>	<b>5,546</b>	<b>2.1</b>	<b>3,903</b>	<b>1.4</b>	<b>4,876</b>	<b>1.6</b>

**TABLE X  
BREAKDOWN of WB and RBC TRANSFUSIONS BY SITE**

<b>Number of Units Transfused</b>	<b>2015</b>		<b>2016</b>		<b>2017</b>	
	<b>Whole Blood</b>	<b>Red Cells</b>	<b>Whole Blood</b>	<b>Red Cells</b>	<b>Whole Blood</b>	<b>Red Cells</b>
Hospitals	198	279,086	166	281,013	120	271,501
Out of Hospitals		8,421		6,917		8,233
<b>Total Transfusions:</b>		<b>287,705</b>		<b>288,096</b>		<b>279,854</b>

**TABLE XI**  
**UNITS of WB, RBC and OTHER BLOOD COMPONENTS TRANSFUSED IN NEW JERSEY**  
**HOSPITALS AND OUT OF HOSPITAL TRANSFUSION FACILITIES**

	2015		2016		2017	
	Transfused	Outdated	Transfused	Outdated	Transfused	Outdated
Whole Blood	198	+	166	+	120	+
* Packed Red Blood Cells	287,507	+	287,930	+	279,734	+
Washed Red Blood Cells	614	1.4%	610	1.9%	541	1.5%
Frozen Red Blood Cells	63	17.1%	119	11.1%	99	2.9%
RBCs Leukocytes Reduced	282,863	1.0%	286,400	0.8%	277,983	0.8%
<b><u>Sub Total</u></b>	<b>287,705</b>		<b>288,096</b>		<b>279,854</b>	
Fresh Frozen Plasma	67,176	3.6%	66,557	4.1%	59,238	5.0%
Plasma Frozen w/in 24 hours of Collection	708	4.3%	1,876	4.0%	1,859	2.1%
Single Donor Platelets	49,329	5.9%	49,356	6.6%	50,779	7.7%
Platelet Concentrates	530	45.1%	672	25.1%	211	66.2%
Washed Platelets	Not Reported		15	6.3%	47	6.0%
Cryoprecipitate	12,718	6.8%	13,521	4.8%	13,199	6.0%
Pre-pooled Cryoprecipitate	1,277	8.1%	264	14.5%	2,139	3.9%
Leukocytes	0	0%	11	0%	0	0%
Cryo-Poor Plasma	32	0%	Not Reported		Not Reported	
<b><u>Sub Total</u></b>	<b>131,770</b>		<b>132,272</b>		<b>127,472</b>	
<b><u>Grand Totals</u></b>	<b>419,475</b>		<b>420,368</b>		<b>407,326</b>	
* The figure for Packed Red Blood Cells includes RBCs transfused as washed, frozen, and/or RBCs Leukocytes Reduced.						
Crossmatch/Transfusion						
Ratio	1.5		1.5		1.5	

+ Data Not Available



**TABLE XII  
2016 HOSPITAL AND OUT OF HOSPITAL USE CATEGORIZED BY DONOR TYPE**

Whole Blood (0.1% of Total Transfusions)							Red Blood Cells (99.9% of Total Transfusions)						
County	Allogeneic	%	Autologous	%	Directed	%	Allogeneic	%	Autologous	%	Directed	%	County Sub Total
Atlantic & Cape May	0	0%	38	25.2%	0	0%	11,612	4.0%	0	0%	1	0.8%	11,651
Bergen	0	0%	0	0%	0	0%	32,905	11.4%	12	28.6%	51	38.3%	32,968
Burlington	0	0%	0	0%	0	0%	9,361	3.3%	0	0%	1	0.8%	9,362
Camden	15	100%	7	4.6%	0	0%	25,325	8.8%	1	2.4%	0	0%	25,348
Cumberland	0	0%	0	0%	0	0%	4,419	1.5%	0	0%	2	1.5%	4,421
Essex	0	0%	8	5.3%	0	0%	40,060	13.9%	0	0%	18	13.5%	40,086
Gloucester	0	0%	0	0%	0	0%	6,020	2.1%	0	0%	7	5.3%	6,027
Hudson	0	0%	6	4.0%	0	0%	14,551	5.1%	0	0%	0	0%	14,557
Hunterdon & Somerset	0	0%	0	0%	0	0%	5,932	2.1%	15	35.7%	1	0.8%	5,948
Mercer	0	0%	4	2.6%	0	0%	9,335	3.2%	0	0%	0	0%	9,339
Middlesex	0	0%	64	42.4%	0	0%	36,110	12.5%	0	0%	20	15.0%	36,194
Monmouth	0	0%	0	0%	0	0%	20,001	7.0%	10	23.8%	4	3.0%	20,015
Morris	0	0%	8	5.3%	0	0%	22,206	7.7%	1	2.4%	18	13.5%	22,233
Ocean	0	0%	6	4.0%	0	0%	17,265	6.0%	3	7.1%	2	1.5%	17,276
Passaic	0	0%	0	0%	0	0%	12,847	4.5%	0	0%	7	5.3%	12,854
Salem	0	0%	4	2.6%	0	0%	1,376	0.5%	0	0%	0	0%	1,380
Sussex	0	0%	0	0%	0	0%	2,696	0.9%	0	0%	0	0%	2,696
Union	0	0%	6	4.0%	0	0%	13,482	4.7%	0	0%	1	0.8%	13,489
Warren	0	0%	0	0%	0	0%	2,252	0.8%	0	0%	0	0%	2,252
<b>Totals</b>	<b>15</b>	<b>9.0%</b>	<b>151</b>	<b>91.0%</b>	<b>0</b>	<b>0%</b>	<b>287,755</b>	<b>99.9%</b>	<b>42</b>	<b>0%</b>	<b>133</b>	<b>0.1%</b>	<b>288,096</b>
<b>% of Total Transfusions</b>	<b>0.01%</b>		<b>0.05%</b>		<b>0.0%</b>		<b>99.88%</b>		<b>0.01%</b>		<b>0.05%</b>		<b>100%</b>

**TABLE XII  
2017 HOSPITAL AND OUT OF HOSPITAL USE CATEGORIZED BY DONOR TYPE**

Whole Blood (0% of Total Transfusions)							Red Blood Cells (100% of Total Transfusions)						
County	Allogeneic	%	Autologous	%	Directed	%	Allogeneic	%	Autologous	%	Directed	%	County Sub Total
Atlantic & Cape May	0	0%	3	4.4%	0	0%	10,087	3.6%	0	0%	0	0%	10,090
Bergen	0	0%	0	0%	0	0%	33,088	11.8%	79	89.8%	112	62.9%	33,279
Burlington	0	0%	0	0%	0	0%	8,254	3.0%	0	0%	0	0%	8,254
Camden	51	98.1%	3	4.4%	0	0%	25,792	9.2%	0	0%	5	2.8%	25,851
Cumberland	0	0%	0	0%	0	0%	4,171	1.5%	0	0%	0	0%	4,171
Essex	0	0%	0	0%	0	0%	39,014	14.0%	0	0%	3	1.7%	39,017
Gloucester	0	0%	2	2.9%	0	0%	5,869	2.1%	0	0%	5	2.8%	5,876
Hudson	0	0%	0	0%	0	0%	14,659	5.2%	2	2.3%	0	0%	14,661
Hunterdon & Somerset	0	0%	0	0%	0	0%	5,875	2.1%	4	4.5%	2	1.1%	5,881
Mercer	0	0%	2	2.9%	0	0%	7,481	2.7%	0	0%	0	0%	7,483
Middlesex	0	0%	50	73.5%	0	0%	35,075	12.6%	0	0%	21	11.8%	35,146
Monmouth	0	0%	0	0%	0	0%	20,889	7.5%	1	1.1%	0	0%	20,890
Morris	0	0%	0	0%	0	0%	21,095	7.5%	0	0%	21	11.8%	21,116
Ocean	0	0%	0	0%	0	0%	17,366	6.2%	2	2.3%	0	0%	17,368
Passaic	1	1.9%	0	0%	0	0%	12,342	4.4%	0	0%	6	3.4%	12,349
Salem	0	0%	2	2.9%	0	0%	1,166	0.4%	0	0%	0	0%	1,168
Sussex	0	0%	0	0%	0	0%	2,454	0.9%	0	0%	0	0%	2,454
Union	0	0%	6	8.8%	0	0%	12,586	4.5%	0	0%	3	1.7%	12,595
Warren	0	0%	0	0%	0	0%	2,205	0.85	0	0%	0	0%	2,205
<b>Totals</b>	<b>52</b>	<b>43%</b>	<b>68</b>	<b>57%</b>	<b>0</b>	<b>0%</b>	<b>279,468</b>	<b>99.9%</b>	<b>88</b>	<b>0%</b>	<b>178</b>	<b>0.1%</b>	<b>279,854</b>
<b>% of Total Transfusion</b>	<b>0.02%</b>		<b>0.02%</b>		<b>0.0%</b>		<b>99.86%</b>		<b>0.03%</b>		<b>0.07%</b>		<b>100%</b>

**TABLE XIII**  
**DISTRIBUTION OF BLOOD TO TRANSFUSION SERVICES BY COUNTY (as reported by the hospitals)**

<b>County</b>	<b>Incoming Supply</b>	<b>Hospital Donors</b>	<b>%</b>	<b>American Red Cross Penn-Jersey Region</b>	<b>%</b>	<b>New Jersey Blood Services /NYBC</b>	<b>%</b>	<b>Community Blood Centers</b>	<b>%</b>	<b>Available Supply</b>
<b>Atlantic &amp; Cape May</b>										
2015	12,359	0	0%	5,050	41%	7,309	59%	0	0%	10,903
2016	12,438	0	0%	5,191	42%	7,247	58%	0	0%	11,477
2017	10,842	0	0%	10,842	100%	0	0%	0	0%	10,136
<b>Bergen</b>										
2015	33,735	0	0%	2,718	8%	3,006	9%	28,011	83%	19,845
2016	33,506	0	0%	2,353	7%	3,257	10%	27,896	83%	33,023
2017	33,955	0	0%	1,614	5%	3,566	10%	28,775	85%	33,597
<b>Burlington</b>										
2015	9,540	0	0%	9,216	97%	0	0%	324	3%	9,426
2016	9,627	0	0%	9,206	96%	0	0%	421	4%	9,480
2017	8,600	0	0%	8,475	99%	0	0%	125	1%	8,368
<b>Camden</b>										
2015	24,056	0	0%	23,853	99%	0	0%	203	1%	23,989
2016	25,396	0	0%	25,396	100%	0	0%	0	0%	25,382
2017	25,124	0	0%	19,125	76%	5,818	23%	181	1%	25,181
<b>Cumberland</b>										
2015	4,502	0	0%	4,502	100%	0	0%	0	0%	4,391
2016	4,452	0	0%	4,452	100%	0	0%	0	0%	4,445
2017	4,158	0	0%	4,158	100%	0	0%	0	0%	4,181

**TABLE XIII (Continued)**  
**DISTRIBUTION OF BLOOD TO TRANSFUSION SERVICES BY COUNTY (as reported by the hospitals)**

<b>County</b>	<b>Incoming Supply</b>	<b>Hospital Donors</b>	<b>%</b>	<b>American Red Cross Penn-Jersey Region</b>	<b>%</b>	<b>New Jersey Blood Services /NYBC</b>	<b>%</b>	<b>Community Blood Centers</b>	<b>%</b>	<b>Available Supply</b>
<b>Essex</b>										
2015	41,022	42	0%	31,124	76%	5,118	12%	4,738	12%	41,124
2016	40,529	15	0%	31,255	77%	5,102	13%	4,157	10%	40,616
2017	39,410	0	0%	27,462	70%	4,429	11%	7,519	19%	39,376
<b>Gloucester</b>										
2015	6,023	0	0%	6,023	100%	0	0%	0	0%	6,040
2016	6,232	0	0%	6,232	100%	0	0%	0	0%	6,174
2017	6,034	0	0%	6,034	100%	0	0%	0	0%	6,013
<b>Hudson</b>										
2015	15,725	0	0%	9,486	60%	0	0%	6,239	40%	15,372
2016	14,958	0	0%	9,278	62%	0	0%	5,680	38%	13,749
2017	15,021	0	0%	9,086	60%	0	0%	5,935	40%	13,940
<b>Hunterdon &amp; Somerset</b>										
2015	6,209	3,744	60%	0	0%	697	11%	1,768	29%	6,200
2016	6,057	3,454	57%	4	0%	519	9%	2,080	34%	6,068
2017	6,061	3,156	52%	636	11%	130	2%	2,139	35%	5,885
<b>Mercer</b>										
2015	10,966	0	0%	8,239	75%	2,065	19%	662	6%	10,980
2016	9,772	0	0%	7,134	73%	1,975	20%	663	7%	9,564
2017	7,877	0	0%	7,128	91%	273	3%	476	6%	7,896

**TABLE XIII (Continued)**  
**DISTRIBUTION OF BLOOD TO TRANSFUSION SERVICES BY COUNTY (as reported by the hospitals)**

<b>County</b>	<b>Incoming Supply</b>	<b>Hospital Donors</b>	<b>%</b>	<b>American Red Cross Penn-Jersey Region</b>	<b>%</b>	<b>New Jersey Blood Services /NYBC</b>	<b>%</b>	<b>Community Blood Centers</b>	<b>%</b>	<b>Available Supply</b>
<b>Middlesex</b>										
2015	35,646	2,236	6%	5,757	16%	11,072	31%	16,581	47%	35,046
2016	37,292	2,154	6%	6,537	17%	11,824	32%	16,777	45%	36,970
2017	37,764	2,560	7%	16,720	44%	7,352	20%	11,132	29%	37,498
<b>Monmouth</b>										
2015	20,791	0	0%	3,568	17%	3	0%	17,220	83%	20,393
2016	20,474	0	0%	3,356	16%	4	0%	17,114	84%	20,082
2017	21,102	0	0%	2,743	13%	14	0%	18,345	87%	21,026
<b>Morris</b>										
2015	22,522	4,071	18%	4,415	20%	1,153	5%	12,883	57%	21,706
2016	23,748	3,563	15%	4,300	18%	9,109	38%	6,776	29%	23,356
2017	22,628	3,772	17%	4,145	18%	12,416	55%	2,295	10%	22,075
<b>Ocean</b>										
2015	17,983	0	0%	10,953	61%	0	0%	7,030	39%	17,919
2016	17,365	0	0%	10,300	59%	0	0%	7,065	41%	17,344
2017	17,461	0	0%	8,399	48%	0	0%	9,062	52%	17,441
<b>Passaic</b>										
2015	13,414	0	0%	2,354	18%	0	0%	11,060	82%	13,281
2016	12,989	0	0%	1,929	15%	18	0%	11,042	85%	13,040
2017	12,751	0	0%	1,957	16%	47	0%	10,747	84%	12,593



**TABLE XIII (Continued)**  
**DISTRIBUTION OF BLOOD TO TRANSFUSION SERVICES BY COUNTY (as reported by the hospitals)**

<b>County</b>	<b>Incoming Supply</b>	<b>Hospital Donors</b>	<b>%</b>	<b>American Red Cross Penn-Jersey Region</b>	<b>%</b>	<b>New Jersey Blood Services /NYBC</b>	<b>%</b>	<b>Community Blood Centers</b>	<b>%</b>	<b>Available Supply</b>
<b>Salem</b>										
2015	1,922	0	0%	1,918	100%	0	0%	4	0%	1,743
2016	1,695	0	0%	1,695	100%	0	0%	0	0%	1,520
2017	1,556	0	0%	1,556	100%	0	0%	0	0%	1,373
<b>Sussex</b>										
2015	2,582	0	0%	22	1%	0	0%	2,560	99%	2,523
2016	2,731	0	0%	22	1%	1,416	52%	1,293	47%	2,705
2017	2,483	0	0%	10	0%	2,106	85%	367	15%	2,473
<b>Union</b>										
2015	14,744	11	0%	0	0%	2,385	16%	12,348	84%	14,684
2016	13,690	0	0%	0	0%	6,624	48%	7,066	52%	13,760
2017	13,374	0	0%	1,420	11%	7,696	57%	4,258	32%	13,280
<b>Warren</b>										
2015	3,350	0	0%	0	0%	0	0%	3,350	100%	2,575
2016	2,706	0	0%	0	0%	420	16%	2,286	84%	2,339
2017	2,299	0	0%	0	0%	943	41%	1,356	59%	2,231
<b>GRAND TOTAL:</b>										
<b>2015</b>	<b>297,091</b>	<b>10,104</b>	<b>3%</b>	<b>129,198</b>	<b>44%</b>	<b>32,808</b>	<b>11%</b>	<b>124,981</b>	<b>42%</b>	<b>278,140</b>
<b>2016</b>	<b>295,657</b>	<b>9,186</b>	<b>3%</b>	<b>128,640</b>	<b>44%</b>	<b>47,515</b>	<b>16%</b>	<b>110,316</b>	<b>37%</b>	<b>291,094</b>
<b>2017</b>	<b>288,500</b>	<b>9,488</b>	<b>3%</b>	<b>131,510</b>	<b>46%</b>	<b>44,790</b>	<b>15%</b>	<b>102,712</b>	<b>36%</b>	<b>284,563</b>