

Blood requisition and utilization in tertiary hospital-based blood bank centers in Batangas, Philippines: A Three-year Review

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Abstract - Today, in the field of medicine, the importance of blood cannot be underestimated. Adequate supply of blood is very essential in order to carry out certain medical interventions such as replacing blood loss during childbirth, treating anemia and undernourishment or even saving those who are on the verge of death. Given this situations, there is an immediate need to replace blood in order to maintain homeostasis. This study is a descriptive qualitative type of research. Tertiary hospitals were selected to participate in the study. Data of blood components requested and transfused from 2009 to 2011 were gathered from the records of their blood bank/center. The study identified the most commonly requested and transfused blood components including its indications. Through the frequency and percentage distribution, male patients with O positive blood type mostly requested for one unit of packed red blood cells. In contrary with the other studies, internal medicine is the department which obtained the most number of requests resulting to predominating value for elderly patients.

Keywords - blood components, blood bank center, blood utilization

INTRODUCTION

The ordering of blood and its components is a common practice in medicine (Basnet et al., 2009). Adequate supply of blood is very essential in order to carry out certain medical interventions (Anderson et al., 2007) such as replacing blood loss during childbirth, treating anemia (Kumar et al., 2009) and undernourishment or even saving those who are on the verge of death (Arnold et al., 2006).

In an Asian study, fresh frozen plasma is a frequently prescribed blood product used to treat bleeding patients (Chng et al., 2003). Furthermore, other blood components like platelet transfusions are also used in clinical practices (Lin et al., 2010).

The availability of allogeneic blood and its components has an important impact on the management of patients as well as other clinical healthcare issues (Ebose et al., 2009). Effective management of hospital blood inventories is essential given the frequent shortages of allogenic blood, the shrinking medical technologist workforce, and the focus on hospital expenses and costs (Schmotzer et al., 2010). However, maintaining a large pool of fresh RBCs is impossible in a blood-banking environment and

blood in frozen form possess a logistic disadvantage in terms of accessibility, maintenance cost, safety, and sample recovery (Ho et al., 2009). Blood is expensive, and in recent years, hospitals have experienced increases in the cost of blood and blood products (Kumar, 2009). Separate components were felt to maximize the potential for rational utilization of each donated unit while simultaneously limiting unnecessary transfusions, with their attendant risk of infection and transfusion reaction (Repine et al., 2006).

The primary concern of blood bank logistics is to maintain a continuous supply and to minimize wastage (Raaf et al., 2005). It is important for the blood bank to be able to fulfill the demand for blood and at the same time, evaluate and assess the existing trends of ordering. This is important to prevent misuse which may lead to shortage and thus denial of this blood product to someone in a life threatening situation (Bhat et al., 2012).

The proportion of patients undergoing transfusion, as well as the mean number of units per patient, varies markedly from hospital to hospital (Covin et al., 2002). Hospitals that serve an older and more heterogeneous population have patients with co-morbid diseases that require drugs that can affect the hemostatic system (Yoon et al., 2011). Variation in perioperative transfusion practice patterns, however, may also be influenced by differences in patient population among study centers, including co-morbidities as well as other patient-related factors such as age, body size, or pre-operative anemia (Snyder-Ramos et al., 2008).

Despite established clinical guidelines, blood banks still frequently receive inappropriate blood component orders resulting to wastage. Studies by Holland et al. (2006) and Cazenave et al., (2010) have shown a high incidence of inappropriate use of fresh frozen plasma. Inappropriate use not only leads to a wastage of limited resources depriving more needy patients, but also leads to an increased healthcare cost and increased risk of transfusion related complications (Shinagare et al., 2010).

A monitoring system will ensure strict adherence to established guidelines that will entail the waste reduction of blood components (Chaudhary et al., 2005) due to outdating (Basnet et al, 2009). It will provide valuable facts on ambulatory blood utilization patterns that will be used to better understand the reasons for transfusion in the ambulatory setting, definite for blood use (Menis et al., 2009). Hence, it is incumbent to critically and systematically evaluate and analyze blood components for the pattern of blood transfusion that will be ordered by different clinical department (Ebose et al., 2009).

The epidemiologic studies of blood utilization takes a population approach that determine the rates of transfusion by different categories as well as the relative utilization by specific clinical conditions and diagnostic or therapeutic procedures (Bosch et al., 2011). They illustrate a strong association between medical procedures and blood use among inpatients (Anderson et al.,

2007) and other tertiary hospitals. Some of the highest blood utilization occurs with surgical procedures (Anderson et al., 2007). Undoubtedly, through this procedure, blood transfusion plays a major role in the resuscitation and management of surgical patients (Basnet et al., 2009). More precise information on blood utilization serve as the basis for estimating risks associated with blood transfusion and informed decisions that will keep an adequate supply of blood (Anderson et al., 2007).

The objective of this research is to determine the requisition and transfusion practices for whole blood, packed red cell (PRC), fresh frozen plasma (FFP) and platelet in blood bank center intertiary hospitals in a provincial setting. The purpose of this study is to improve the efficacy of ordering of blood and its maximum utilization (Basnet et al., 2009).

METHODS

Participating Institutions

The study population consists of blood bank centers in Batangas City, Lipa City and Tanauan City composed of patients admitted (Harrison et al., 2009) at Mary Mediatrix Medical Center and Daniel O. Mercado Medical Center. The others hospitals blood bank centers St. Patrick Medical Center, N. L. Villa Memorial Hospital and Batangas Regional Hospitals were not allowed to participate in the conducted study.

Research Design

The study utilized descriptive qualitative research.

Data Gathering

Documentary analysis is from blood bank records from year 2009 to 2011 of two selected tertiary hospitals. This study determined the number of units requested, cross matched, transfused and indications for requesting each blood component. Furthermore, frequency of blood component request of each hospital departments and demographic profile of patients were also determined (Lin et al., 2010).

Statistical Analysis

The data obtained were analysed through the use of frequency and percentages that determined number of the fresh frozen plasma, packed RBC, platelet concentration requests and number of blood that were transfused, indication for blood transfusion, hospital departments that utilized the blood

components, and the profile of the respondents such as the blood type, age, sex, of the patient.

RESULTS AND DISCUSSION

Table 1 shows the frequency of the blood type of the patients. It can be gleaned that the O positive blood type conveyed the highest percentage of 44.4, followed by 29.1% for B positive blood type, A positive blood type with 21.0%, AB positive patients with 5.3%, O negative blood type of .1% in the tabulation, .0 equivalent to a frequency of 2 and B and A negative blood type that both earned the lowest percentage of only .0 or a frequency of only 1 count out of 4006 patients as the rarest classification of blood corresponding to Akinnuga et. al. (2011) research study which resulted to the highest percentage frequency for blood type O followed by blood group A and blood group B, and the least percentage frequency is that of blood group AB that supported the abovementioned outcome.

Table 1
Frequency and percentage distribution of the patients' blood type

ABC and RH blood type	Frequency	Percentage
A+	842	21.0
A-	1	.0
AB+	213	5.3
AB-	0	.0
B+	1167	29.1
B-	1	.0
O+	1777	44.4
O-	5	.1
Total	4006	100.0

The table 2 entails the distribution of the requisition and transfusion practices of the patients to the two selected hospitals according to the patient's age. This table demonstrates that most of the blood transfusions are done in the age range of sixty to seventy years olds (15.8%) and the least transfusion are done to one hundred one to one hundred ten. Through the study conducted by Anderson et. al. (2007), it provides valuable information on blood utilization patterns for Medicare beneficiaries for the elderly patients. In addition, a growth proportion of elderly in the US population may substantially increase blood utilization even in the future.

Table 2
Frequency and percentage distribution of patients' age

Age	Frequency	Percent
0-10	315	7.9
11-20	258	6.4
21-30	262	6.5
31-40	361	9
41-50	438	10.9
51-60	587	14.7
61-70	632	15.8
71-80	608	15.2
81-90	320	8
91-100	36	.9
101-110	3	.1
Missing	186	4.6
Total	4006	100

As presented in table 3, the total male population took the highest of percentage which is 51.2% equivalent to 2,053 frequency number compared with the total female population that is associated with less than half the total which is 48.2% or 1945 frequency out of 4,006 patients in similarly conducted by Harris et. al. (2006) enunciates that men engage in more risky behaviors than do women, men are more often the victims of accidents than are women, men are three times as likely as women to be involved in fatal car accidents (U.S. Department of Transportation, 2004), men die much more often from drowning or accidental poisoning throughout the Western world (Waldron, et al., 2005), men must be engaging in more risky behaviors across a broad range of domains and men reported a greater overall likelihood of engaging in risky behaviors in the gambling, health, and recreational domains.

Table 3
Frequency and percentage distribution between the male and female

Gender	Frequency	Percentage
Male	2053	51.2
Female	1945	48.6
Missing	8	2
Total	4006	100.0

Table 4 displays a bearing of 70.0% for the Internal medicine department predominated for the most number of requested transfusions, 11.6 and 11.2 percent for Surgery and Pediatrics department respectively. The Obstetrics and Gynecology gathered the lowest requisition and transfusion of only 7.2% out of the four given departments. According to Covin et al. (2003), blood component transfusion has been an important part of coronary artery bypass graft surgery (CABG) since its inception since the said disease is involved in the internal medicine department especially to elderly patients.

Table 4
Frequency and percentage distribution of hospital departments
that requested and transfused blood components

Hospital Department	Frequency	Percentage
Internal Medicine	2804	70.0
Obstetrics and Gynecology	289	7.2
Pediatrics	449	11.2
Surgery	464	11.6
Total	4006	100.0

Table 5 shows that packed red blood cells has the highest percentage which is 75.2% that predominates with washed red cells of a frequency of 5 units, contradicting the lowest value which is 1.2% equivalent to only 50 units out of 4,006 blood units for the Cryoprecipitate. The other blood components including Platelet concentrate, Fresh frozen plasma and Whole blood got the remaining percentages; 8.2%, 7.8% and 7.5% consequently. The use of PRBC transfusion was specifically considered appropriate in patients with acute anemia whose symptoms were related to blood loss. Vlaaret. al. (2009) alleged RBC transfusion decisions predominates on their study specifically for bleeding cases or hemoglobin concentrations instances.

Table 5
Frequency and distribution of blood components requested and transfused

Blood component	Frequency	Percentage
Cryoprecipitate	50	1.2
Fresh frozen plasma	311	7.8
Platelet concentrate	328	8.2
Packed red blood cell	3015	75.3
Whole blood	302	7.5
Total	4006	100.0

Table 6 implicates the frequency and percentage distribution of the number of units requested and transfused to the patients from the two selected hospitals. Requests and transfusions of only one (1) unit of blood bag garnered the most number of frequency and highest percentage of 51.3, followed by two (2) units of blood bag, three (3) units of blood bag, and four (4) units of blood bag with 34.2%, 7.2%, and 4.8% respectively. In addition, 1.0% for both five (5) and six (6) units of blood bag is encoded. A frequency of 2 is delegated for ten (10)

units of blood bag. Lastly, the lowest percentage of requested and transfused unit of blood is intended for both nine (9) and half units of blood with .0% supported by Namaet. al. (2005) wherein numerous studies have shown that single-unit transfusion can ameliorate diseases especially for the symptoms of chronic anemia caused probably by severe bleeding.

Table 6
Frequency of blood units requested and transfused

Number of units	Frequency of request	Frequency of transfused	Percentage	Valid percentage	Cumulative percentage
1.00	2057	2057	51.3	51.3	51.4
2.00	1370	1370	34.2	34.2	85.6
3.00	269	269	7.2	7.2	92.8
4.00	194	194	4.8	4.8	97.7
5.00	40	40	1.0	1.0	98.7
6.00	41	41	1.0	1.0	99.7
7.00	5	5	.1	.1	99.8
8.00	5	5	.1	.1	99.9
9.00	1	1	.0	.0	100.0
10.00	2	2	.0	.0	100.0
Missing	2	2	.0	.0	100.0
Total	4006	4006	100.0	100.0	

Table 7 designates the cross tabulation in terms of the frequency of the blood component in line with the blood type of the patients. From the two selected hospitals, a total of 50 cryoprecipitate requests seven (7) were A positive, 1 were AB positive, 14 were B positive and 28 were O positive for a total of 50 requests. In 311 fresh frozen plasma requests, 79 were A positive, 15 were AB positive, 85 were B positive and 132 were O positive resulting for a total 311 requests. Out of 328 platelet requests 54 were A positive, 10 were AB positive, 121 were B positive and 143 were O positive. In 3015 packed RBC requests 1 were A negative, 639 were A positive, 164 were AB positive, 1 were B negative, 884 were B positive, 4 were O negative and 1322 were O positive. For whole blood requests 62 were A+, 23 were AB+, 63 were B positive, 1 were O negative and 152 were O positive resulting in a total of 301.

Table 7
Cross tabulation of blood components with the blood type

Blood component	Blood type								Total
	A+	A-	B+	B-	AB+	AB-	O+	O-	
Cryoprecipitate	7	0	14	0	1	0	28	0	50
Fresh frozen plasma	79	0	85	0	15	0	132	0	311
Platelet concentrate	54	0	121	0	10	0	143	0	328
Packed red blood cell	639	1	884	1	164	0	1322	4	3015
Whole blood	62	0	63	0	23	0	152	1	301
Total	842	1	1167	1	213	0	1777	5	4006

Table 8 illustrates the frequency of each blood component utilized by a particular age group. The individuals belong to the age group 0 to 10 had the highest utilization (33) of cryoprecipitate while the elderly individual rarely request for cryoprecipitate. For the 298 frozen fresh plasma, 0-10 years old had the highest (108) request for frozen fresh plasma in contrary with 91 to 110 individual that not request for their product. The age group 0-10 and 11-20 has the greatest request for platelet while 41 to 50 years old has the least request of 11 units. Out of 2864 packed red blood cell requested 61 to 70 years old mostly (551) used the said component while the 101 to 110 years old has the least request of 2. Lastly for the 297 whole blood, most of the whole blood was accounted for 21 to 30 years old and 101 to 110 years old only request for one unit. According to Anderson et al. (2007), the study made with his colleagues establish a strong connection between medical procedures and blood use among inpatient stays specifically for elderly associated with the previous written result.

Table 8
Cross tabulation of blood component in terms of population's age

Component	AGE											Total
	0-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100	101-110	
Cryoprecipitate	33	11	2	0	0	0	1	1	0	0	0	48
Fresh frozen plasma	108	69	16	11	8	36	18	21	14	0	0	298
Platelet	62	65	48	35	11	31	26	25	14	0	0	317
Packed red blood cell	108	100	144	266	378	469	551	532	282	31	2	2864
Whole blood	6	12	65	52	39	52	34	29	10	5	1	297
Total	315	258	262	361	438	587	632	608	320	36	3	3820

Table 9 illustrated the frequency in each blood component matched each blood group. The individual below 18 utilized 33 units of cryoprecipitate while the above 18 individual do not utilized the said component. In terms of 171 fresh frozen plasma, 119 belong to children (below 17) and the remaining 52 units accounted for adult (above 18). Out of 132 platelets transfused, 67 units had been utilized by below 18 patients while the patients above 18 utilized 65 units of platelet. The recorded 931 units of packed red blood cell were distributed to above 18 individual with the highest frequency of 880 and the remaining 51 units belongs to below 18 individuals. Lastly, for the 175 whole blood, most of the whole blood was accounted for adults (above 18) who utilized 168 units and 51 units were used by the Pediatrics (below 17).

Table 9
Cross tabulation of Blood component requested and Patient's age for Hospital A

		AGE		
		Below 17	Above 18	Total
COMPONENT	Cryoprecipitate	33	0	33
	FFP	119	52	171
	Platelet	67	65	132
	Packed red blood cells	51	880	931
	Whole blood	7	168	175
Total		277	1165	1442

Table 10 represents the corresponding component requested to the patient's age wherein packed red blood cells for elderly patients or above 18 years of age predominates which garnered 1,809 contravening Cryoprecipitate component for above 18 years of age with 4 out of 1,932 requests.

Table 10
Cross tabulation of Blood component requested and Patient's age for Hospital B

	Below 17	Above 18	Total
Cryoprecipitate	11	4	15
FFP	48	79	127
Whole blood	9	113	122
Platelet	38	143	181
Packed red blood cells	123	1809	1932
Total	229	2148	2377

Table 11 exhibits the cross tabulation of blood component requests with the corresponding gender of the patients. According to Harris et. al. (2008) men engaged in a more risky behaviors so they more likely to acquire infections or diseases colligating this table which indicates the following; out of the 50 cryoprecipitate requests, 20 were female and 30 were male. Out of 311 fresh frozen plasma requests, 121 were female and 190 were male. For the whole blood requests 154 were female and 147 were male resulting to a total of 301 requests. Out of 328 platelet requests, 168 were female and 160 were male. For packed RBC requests 1490 were female and 1525 were male resulting to a total of 3015 requests.

Table 11
Cross tabulation of blood component in terms of population's gender

Blood component	Gender		Total
	Male	Female	
Cryoprecipitate	30	20	50
Fresh Frozen Plasma	190	121	311
Platelet concentrate	160	168	328
Packed red blood cell	1525	1490	3015
Whole blood	147	154	301
Total	2053	1953	4006

Table 12 illustrates the corresponding component utilised by each department. Out of 50 cryoprecipitate the highest accumulation were in the Pediatrics ward with a frequency of 35, followed by internal medicine and obstetrics & gynecology with a frequency of 12& 3 respectively. The surgery department don't used cryoprecipitate. In 311 unit of fresh frozen plasma that transfused 152 unit go to internal medicine, 126 units and 18 units were received by Pediatrics and surgery department respectively which is supported by a study showing that a high potential for bleeding during the surgical intervention appeared to increase reported transfusion threshold compared to surgical scenarios with a lower bleeding risk (Turgeon et. Al, 2006). The Obstetrics and Gynecology department had 15 units of FFP. Out of 328 units of platelet that transfused internal medicine has the greatest utilization with a frequency of 209 units, while Pediatrics got a frequency of 78, followed by surgery and Obstetrics & Gynecology with a frequency of 25 and 16 respectively. In 3015 units of packed red blood cells that have been utilized, most of the units are utilized by internal medicine with a frequency of 2314. Next is the surgery department with a frequency of 330, Obstetrics and Gynecology with a frequency of 187. The Pediatrics department has the smallest amount of utilization of packed red blood cells with a frequency of 180. In the whole blood utilization both the internal

medicine and surgery department has the greatest utilization of 114 units while the surgery had 91 frequencies. The department of surgery got a frequency of 91 and Obstetrics and Gynecology with least utilization of 75 units. Pediatrics had the least utilization with 22 frequencies. The whole blood utilization gathered a total frequency of 4006.

Table 12
Cross tabulation of blood component utilized by each department

Blood component	Department				Total
	Internal medicine	Obstetrics & Gynecology	Pediatrics	Surgery	
Cryoprecipitate	12	3	35	0	50
Fresh frozen plasma	152	15	126	18	311
Platelet concentrate	209	16	78	25	328
Packed red blood cell	2317	180	188	330	3015
Whole blood	114	75	22	91	302
Total	2804	289	449	464	4006

Table 13
Distribution of Medical Indication for blood transfusion

Indications	Frequency	Percentage
Acute gastritis	3	1%
ALL	15	5%
AML	19	7%
Dengue	13	5%
Blood Dyscrasia	6	2%
CAP	19	7%
Cellulitis	3	1%
Chronic kidney disease	97	35%
CML	12	4%
COPD	22	8%
Dyspepsia	3	1%
Electrolyte imbalance	7	3%
End stage renal disease	7	3%
Esophageal varices	3	1%
Leukemia	20	7%
Multiple Myeloma	2	1%
Osteoarthritis	2	1%
Pneumonia	15	5%
Septic arthritis	4	1%
SLE	3	1%
Total	278	100%

Table 13 presented that chronic kidney disease (35%), COPD (8%) and AML (7%),CAP (7%), leukemia (7%) are the most common disease in internal medicine that requested for blood transfusion. On the other hand, acute

gastritis(1%), cellulitis(1%), dyspepsia(1%), esophageal varices(1%), multiple myeloma (1%), osteoarthritis (1%), septic arthritis (1%), SLE (1%) blood dyscrasia (2%) and electrolyte imbalance (3%), end stage renal disease(3%) are the least common disease in internal medicine that requested for blood transfusion.

Table 14 reveals that diabetic foot has the most (20.98%) number of requests followed by cholelithiasis (16.07%) and hip displacement (10.27%). In contrary, Fistula in Ano has only 3 requests out of 224 patients for the surgery department.

Table 14
Surgical indication for blood transfusion

Indication	Frequency	Percentage
BPH	12	5.36%
Breast Cancer	17	7.59%
Cholelithiasis	36	16.07%
Colon Ca	17	7.59%
Craniotomy	4	1.78%
Decubitous ulcer	5	2.23%
Diabetic foot	47	20.98%
Exlap	4	1.79%
Fistula in Ano	3	1.34%
Gastric Ca	15	6.70%
Gunshot wound	10	4.46%
Hip displacement	23	10.27%
Lung mass	12	5.36%
Stab wound	15	6.70%
Staghorn Calculi	4	1.79%
Total	224	100%

Table 15 shows that myoma uteri had the highest request (45.60 %) for blood transfusion in gynecological settings followed by dysfunctional uterine bleeding (15.40%), abnormal uterine bleeding (12%), ovarian new growth (6.70%), abruption placenta (5.40%), caesarean(3.40%), hemolysis elevated liver enzyme low platelet (3.40%), placenta previa (2.68%) pre eclampsia(2.01%) and ovarian cancer had lowest request (1.30%) for blood transfusion

Table 15
Gynecological indications for blood transfusion

Indications	Frequency	Percentage
Abruptio placenta	8	5.40%
Abnormal Uterine Bleeding	18	12%
Caesarian	5	3.40%
Dysfunctional uterine Bleeding	23	15.40%
Hemolysis, elevated liver enzyme, low platelet	5	3.40%
Myoma Uteri	68	45.60%
ovarian Cancer	2	1.30%
Ovarian new growth	10	6.70%
Placenta previa	4	2.68%
Pre eclampsia	3	2.01%
Total	149	100.00%

Table 16 shows that dengue hemorrhagic fever has the highest (66.70%) number of requests followed by acute gastritis (16%), anemia (10.20%), Beta Thalassemia (2.40%), sepsis neonatorum (2.20%) and Haemophilia A (2.00%). Infectious diarrhea has only 2 requests out of 412 patients for pediatric department.

Table 16
Pediatrics Indications for blood transfusion

Indication	Frequency	Indication
Acute Gastritis	66	16%
Anemia	42	10.20%
Beta Thalassemia	10	2.40%
Dengue Hemorrhagic Fever	275	66.70%
Hemophilia A	8	2.00%
Infectious Diarrhea	2	0.50%
Sepsis neonatorum	9	2.20%
Total	412	100%

Table 17 presents the cross-tabulation of Blood Component Requested (Cryoprecipitate, FFP, PRBC, Platelet, PRVC, PTBC, Washed RBC and Whole Blood) to its corresponding indications. Anemia, Chronic Kidney disease, upper gastrointestinal bleeding and end stage renal disease predominates the indications that mostly requested packed red blood cells as its corresponding component with 128, 96, 78 and 33 requests respectively.

Table 17
 Cross tabulation of Blood Component requested to its corresponding Indications

Indications	Blood Components Requested				
	Cryoprecipitate	FFP	Packed RBC	Platelet	Whole blood
Abruption placentis	0	0	0	0	0
Acid peptic ulcer	0	0	0	0	0
AGE/acute gastroenteritis	0	0	2	0	0
Anemia	0	3	129	11	3
Aneurysm	0	0	1	0	0
ARD/Acute Renal Failure	0	0	0	0	0
Blood Dyscrasia	0	1	2	3	0
BPH/Benign prostatic Hyperplasia	0	1	5	0	0
Breast carcinoma/breast malignancy	0	0	0	0	0
CAP/Community Acquired pneumonia	0	1	16	2	0
CHF/Congested Heart Failure	0	0	3	0	0
Cholelithiasis	0	0	0	0	0
CKD/Chronic Kidney disease	0	1	96	0	0
Colon cancer	0	0	5	0	0
Cranotomy	0	0	1	0	0
CVA/cerebrovascular accident	0	0	3	0	0
CVD/Cardiovascular Disease	0	0	5	2	0
Decubitus Ulcer	0	0	0	0	0
Diabetic foot/Diabetes	0	0	6	0	0
Dengue hemorrhagic fever	0	7	1	5	0
Disseminated Intravascular Coagulation	0	0	0	0	0
	-	-	-	-	-

CONCLUSION

Blood requisition and transfusion practices are considered to be able to ameliorate the utilization of blood components. The research study renders the predominating male population, sixty one to seventy years of age with O positive blood type which garnered the highest frequency and percentage in terms of patient’s demographic profile. Furthermore, one (1) unit of packed red blood cells is the most frequently requested and transfused blood component contravening the cryoprecipitate blood component which took the least amount for the said study. The internal medicine department has the most number of requests and transfusions out of the four included departments such as Obstetrics and Gynecology, Pediatrics and Surgery which is in contrast with the findings of the studies done in other countries may be due to a variance in the indication of a specified patient.

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