

Summer Training at



**Plasmagen Biosciences Private Limited
Bangalore
(April 16 – May 28)**

**Plasma Products Therapy and Blood Banking Scene in India-Facts and
Fiction**

**By
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**Under the guidance of
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**Post Graduate Diploma in Pharmaceutical Management
2011-2013**



**Institute of Health Management Research,
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Certificate

This is to certify that **Anshu Malik** from Institute of Health Management Research, Jaipur has undergone Summer Training at **PlasmaGen Biosciences Pvt Ltd, Bangalore.**, from 7th April, 2012 to 2nd June, 2012.

The candidate herself carried out the project. Her approach to the study has been sincere, scientific and analytical. This summer training is partial fulfillment of the course requirement and is recommended for the award of **Post Graduate Diploma in Pharmaceutical Management.**

I wish her success in all her future endeavors.



Dr. P.R. Sodani
Dean (Academic and Student Affairs)
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IHMR, Jaipur

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ACKNOWLEDGEMENTS

“A journey is easier when you travel together. Interdependence is more valuable than independence”. This project report is result of 2 months of training whereby I have been accompanied and supported by many people. It is a pleasant aspect that I now have the opportunity to express my gratitude for all of them .

Firstly, I would like to thanks **Dr. Ranjeet Ajmani (CEO)**, for allowing me to undertake a valuable internship project in PlasmaGen Biosciences Pvt. Ltd .

My heartiest thanks goes to **Dr. Amit Jha** (Product Manager) and **Dr.Nipun Garg** (National sales Manager), for carrying out the project, without whose constant guidance, co-operation & encouragement, the project would have remained a distant dream. Their kind guidance and mentoring is surely out of scope of words.

I am also extremely thankful to **Mr.Dalbir Singh**, the placement coordinator of our Institute who being a very generous and kind hearted man had never been miser in sharing valuable advices and experiences with me & had been very instrumental in choosing my course of action throughout the project.

I owe my deepest gratitude to my mentor at the Institute **Mr. Barun kanjilal**, this project have not been so accurate and successful without the help and proper and invaluable guidance of him.

Special thanks goes to **Mrs.Aarthi G R** (HR and Admin Manager) for mailing us from time to time and keeping us updated with all the latest updates and instructions on behalf of the company.

Words are inadequate in expressing my adoration and regards to my parents and my brother for their patience, consistent motivation, and faith in me to surpass every hurdles in my life.

I would like to give special thanks to my friend **Naveen Koushal** for all his support, help and valuable suggestions.

I tried my level best in making this project useful and hope that it will be up to the expectations of everyone mentioned.

Finally my sincere acknowledgements to all the doctors who gave me time in the midst of their busy schedule and helped me pursue this otherwise impossible proje

EXECUTIVE SUMMARY

Market information is the key thing before launching any product. The accurate market information results in to success of product performance. The project undertaken is a market research on the demand, consumption pattern & personal preferences of doctors & patients while buying Plasma products for medication. As we all know that plasma products are all very expensive in the market because their only source is Human Blood & blood donors charge a hefty sum for any donation of blood they make. These products are used in many life-saving conditions like Haemophilia , Shock and Trauma. Despite the fact that all Plasma products are life saving drugs & the last line of defense for many doctors, many patients refrain from buying it as their price are well beyond the reach of many poor people which form a large percentage of our population. Also because of the fact that plasma products are new in the market, there is not much of awareness among doctors & patients regarding its uses & implementation.

However the purpose of our market research was to determine what the obstacles are and to draw a perfect reflection of the current plasma market thereby finding new prospects for PlasmaGen Biosciences, a branch of Trigenesis as it sets foot into the plasma market on their own. Throughout my market survey on doctors of reputed hospitals throughout the western region of India (Bareilly, Rudrapur, Moradabad, Agra, Aligarh) I seeked to determine the demand, the consumption pattern, personal preferences and quality & availability of currently available blood & plasma brands in the western region of India.

From all the responses I collected from the doctors it was evident that availability and quality of plasma products are not very satisfactory in the western region. A clear majority of the doctors found that the current prices of plasma products are very expensive and their timely availability at affordable prices is still a very big challenge in India. Doctors have unanimously said that awareness is required for both patients and themselves regarding plasma products. Consumption rate is very less for plasma products since one in fifty or hundred need to be prescribed with plasma products and choosing their favourite brand has been done purely on the basis of availability, quality of the product and price.

The following few pages will be providing a detailed account along with graphical representations of all the responses I have gathered during my field-work. The intentions are to depict a close reflection of the present Plasma market scenario in the western region of India and come up with new business prospects and ways to counter the limitations of trade in Plasma market.

ORGANISATION PROFILE

The study is conducted by PlasmaGen Biosciences Pvt. Ltd. an offshoot of Trigenesis Lifesciences situated in 160,kci chambers, 2nd floor, 5th main road, Chamarajapet, Bangalore-560018 which is a Bio-pharmaceutical company dealing in protein therapy & plasma products for Indian & Global markets, it is a plasma products specialty delivering company .

MISSION: to propagate the blood component therapy for optimum use of each drop of blood donated and, uses surplus unutilized plasma for preparation of plasma products in India and SAARC regions.

VISION: to advance plasma therapy in India and SAARC countries.

FINANCIALS: its estimated sales for 2010-11 is approximately 5.3 million US \$ which would most likely to go upto 24 million US \$ by 2011-12 & 30 million US \$ by 2015. With a capacity of 1,00,000 liters of plasma collection & having an employee strength of 150 people, they are all set to embark into the plasma market by themselves. Their action mainly includes direct sales in the international & domestic market and plasma products manufacturing by the process of fractionation.

STRATEGY: PlasmaGen is focussed on bridging the gap between demand and supply of plasma products. Under their study they would like to evaluate the present scene, the challenges and making India sufficient in the field of blood plasma. The study in this new area will add significant depth to the existing scenario and overcome the major challenges faced by Nation. Company is trying to focus on delivering world-class plasma products at affordable prices.

PRODUCTS: recently, company is available with 2 products in market that is PlasmaHep and RonsenGlob. PlasmaHep is a sterile, non-pyrogenic, solution of Hepatitis B-Immunoglobulin used for intramuscular use only

RonsenGlob is normal human immunoglobulin for intravenous use collected by plasmapheresis technique.

OBJECTIVE OF THE STUDY

- To study the perception of doctors towards plasma products and to know about the supply and demand of the plasma products in India.
- To analyze the usage pattern of plasma products by the doctors.
- To find out the preferable brands and reasons for preferring the same.

PROBLEM STATEMENT

For an aspiring company to do business in protein therapy, the plasma market is not a very congenial place to do business in since plasma products are very expensive, their only source being human blood & blood donors have to be paid hefty sums of money for any donation of blood they make and hence major issue come out to be:

1. Timely availability of safe blood or its products at affordable price as still many patients loose battle of life because of non-availability of safe blood.
2. Another issue, which was troubling us, is the lack of awareness since it is new to the market and there is little awareness among doctors & patients alike regarding its uses & implementations.

some of the other concerns would include :

- ✓ Ever rising cost of plasma.
- ✓ Government control of pricing, since the government does not want the prices of plasma products to jet off beyond the reach of the common man.
- ✓ Poor worldwide harmonization of regulatory issues.
- ✓ Import limitations.

with an in depth market survey on the plasma market i seek to determine the demand, the consumption pattern, personal preferences and quality & availability of currently available blood & plasma brands in western region of India which will hopefully come handy when embarking on new business propositions in the plasma market.

METHODOLOGY :

The project undertaken is a market survey of the demand, consumption pattern & personal preferences of DOCTORS, PARAMEDICAL STAFFS, and INTERNS & PHARMACIES alike when it comes to using and prescribing plasma products for therapy. Hopefully I will draw a nearly perfect image of the prevalent plasma market in BAREILLY, MORADABAD, RUDRAPUR, AGRA, ALIGARH. The following few pages lists all the methodologies adopted.

➤ **TITLE OF STUDY:**

Blood and Plasma Products in India.

➤ **TARGET POPULATION :**

During my market survey of the plasma market in those cities the target population had been primarily the doctors of well reputed hospitals of all over the western region of India as directed by our mentor. Few of my responses had been from young interns and Hospital pharmacies also.

- For IVIG I have consulted: Hematologists, Nephrologists, Oncologists, Neurologists, Immunologists, Intensivist, and Pediatrics.
- For HUMAN ALBUMIN I have consulted : Physician , General surgeon , Hematologists , Nephrologists , Oncologists , Cardiologists , Gastroenterologists , Pulmonologists.
- For ANTI-D I have consulted Gynecologists only.
- For HEPATITIS B IMMUNOGLOBULIN I have consulted: Physician (MD), Gastroenterologists, Nephrologists, Organ Transplant.
- For TETANUS IMMUNOGLOBULIN I have consulted: Internal Medicine, Physician MD, Pediatrics.
- For ANTI-RABIES IMMUNOGLOBULIN, I have consulted : Physicians.
- For FIBRIN SEALANT, I have consulted : Neurosurgeons , Plastic surgeons , General surgeon , Eye surgeons , Cardiac surgeons.
- For FACTOR VII: Intensivist.
- For FACTOR VIII: Neurosurgeons, Intensivist, Paediatrics.
- For FACTOR IX: Intensivist.
- For ANTI-THROMBIN III: Paediatrics , Cardiac surgeons .

- For PROTHROMBIN COMPLEX CONCENTRATE: Paediatrics, Neurosurgeons, Intensivist.

➤ **HOSPITALS VISITED :**

BAREILLY :

Shri siddhi vinayak hospital , Sheel hospital , Shri ganga charan hospital , Gangasheel advanced medical research institute , Eshan hospital , Faiz hospital ,Shri ram murti smarak institute of medical sciences , Saran hospital , Puri heart care centre, Dharamdutt city hospital , Ajay-pratima polyclinic , Child care centre , keshlata hospital , various nursing homes .

MORADABAD :

Shri sai hospital , Teerthankar mahavir medical and advanced research centre , Fortis vivekanand hospital , Kothiwal institute of medical sciences , Shubham nursing home , District eye hospital , Muskan nursing home , Surabhi nursing home .

AGRA :

Pushpanjali hospital , ESIC hospital , Narayani hospital and research centre , Asopa hospital , Kamayani hospital , bansal hospital and nursing home, Goyal hospital , Bodla hospital , Pengoria medical centre , S.N. medical college , District hospital , Jai devi hospital .

ALIGARH :

Jeevan jyoti hospital , Varun hospital , Sewa clinic , Aligarh muslim university , Singhal eye hospital , Goyal nursing home .

➤ **DATA COLLECTION :**

Data collection for most of my respondents had been through a mix of qualitative/quantitative Questionnaire made by PlasmaGen Biosciences Pvt Ltd. With the objective of deriving the maximum information from the doctors.

I have taken some doctor's interview by telephone also.

➤ **TYPE OF RESEARCH DESIGN :**

The market survey undertaken is an example of a descriptive research since the overall research design is rigid and pre-planned all throughout our study.

Judgement and simple random sampling both have been used in our study. We have done judgement sampling while consulting doctors as mentioned in the list of doctors given to us & SR sampling is used while meeting random doctors as they come, in a hospital visited.

➤ **TYPE OF SCALING :**

The simplest form of scaling, i.e. , ordinal scaling had been used to measure doctors' preferences such as "Highly satisfied" or "Not satisfied" or "Satisfied", which had been assigned alphabets like a, b ,c etc. and represented in graphs.

➤ **STUDY TIME :**

The survey was conducted for a period of starting from 16th April to 27th May 2011.

➤ **STATISTICAL DESIGN :**

Compound Bar Graph has been used to represent responses for each questions and to represent responses for individual questions different bar graphs has been plotted and pictorial representation for each response has been shown individually.

OBSERVATION, ANALYSIS & FINDINGS

All the responses gathered using the above questionnaire has been recorded below in the form of compound graphs & tables. Hopefully a graphical representation will bring out a better comparison and help us to draw a desirable conclusion from it.

A. IVIG:

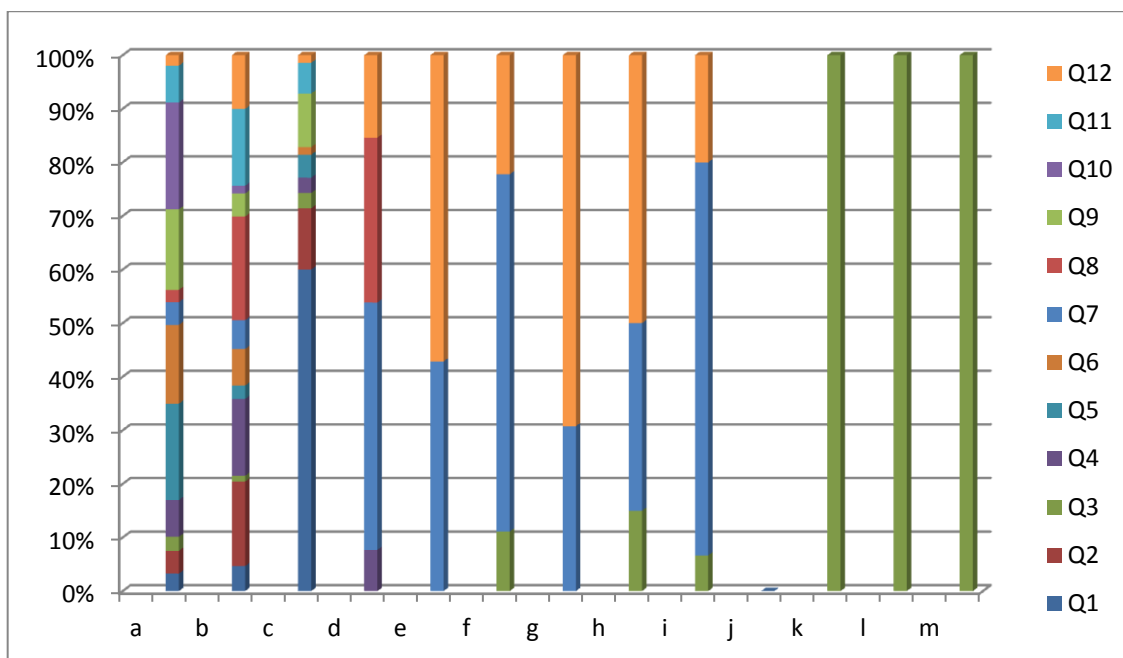
Table Representing The Sample Size and Total number of Responses for IVIG :-

QUESTION NO	1	2	3	4	5	6	7	8	9	10	11	12
SAMLE SIZE	65	65	65	65	65	65	65	65	65	65	65	65
NO. OF RESPONDENT	65	65	65	65	65	65	65	65	65	65	65	65

IVIG (Responses below the digits are the values for each options in the form of percentage of the total number of responses collected per question) Number of responses collected per question in terms options like a,b,c etc.													
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13
a	10 15.38	13 20.00	8 12.31	21 32.31	55 84.62	45 69.23	13 20.00	7 10.77	46 70.77	61 93.85	21 32.31	6 9.23	
b	13 20.00	44 67.69	3 4.62	40 61.54	7 10.77	19 29.23	15 23.08	54 83.08	12 18.46	4 6.15	40 61.54	28 43.08	
c	42 64.62	8 12.31	2 3.08	2 3.08	3 4.62	1 1.54	0 0.00	0 0.00	7 10.77		4 6.15	1 1.54	
d			0 0.00	1 1.54			6 9.23	4 6.15			0 0.00	2 3.08	
e			0 0.00				3 4.62					4 6.15	
f			1 1.54				6 9.23					2 3.08	
g			0 0.00				4 6.15					9 13.85	
h			3 4.62				7 10.77					10 15.38	
i			1				11					3	

		1.54				16.92					4.62	
j		0				0						
		0				0						
k		1										
		1.54										
l		42										
		64.62										
		4										
m		6.15										

Pictorial Representation of the above tabulated values of IVIG:



Response Profile for IVIG :

1. There are 15.38 % of the doctors ,who are using IVIG ,have less than 3 years of experiences, 20% of the doctors ,who are using the same, have 3 to 7 years of experiences and 64.62 % of the doctors, who are using these products , have more than 7 years of experiences.
2. Availability of the Product has been good (on the basis of 67.69% of the doctors' opinion) but all doctors are not extremely satisfied because only 20% of the doctors said availability is excellent and 12.31% of the doctors said that availability is poor.
3. 64.62% of the doctors do not prefer any particular brand and from those who prefer any brand 12.31% of the doctors prefer Reliance, 4.62% of the doctors prefer Serum Institute of India,

3.08% of the doctors prefer Bharat Serum, 4.62% prefer Ivinex brand, and remaining prefer Johnsons, Intas and Bharglobe.

4. Doctors prefer a particular brand mainly for availability (61.54%) and better product (32.31%). 3.54 % of the doctors are concerned with the price of the product and remaining 1.54% of the doctors are concerned with other factors like need of the patient etc.
5. 84.62% doctors are prescribing IVIG less than 10 vials per month per patient, 10.77 % of the doctors are using 10 to 20 vials per month per patient and 4.62 % of them are prescribing more than 20 vials per month per patient.
6. Because it is a biological “made out of human plasma”; doctors consider source of plasma as an important criterion in selection of the product and think it should be given utmost priority as 69.23% of them opted for the option “very critical” and 29.23% of them opted for the option “critical”. Only 1.54% of the doctors consider it to be not critical.
7. While using these product 16.92% did not find any safety issues while 10.77 found the product safe to use, 23.08% doctors found that the product should be infection free, 20% found product should be maintain in cold chain condition, 9.23% found product should be reaction free other 9.23% found contamination as major safety issue, 6.15% found all factors (cold chain maintenance, infection free, storage, reaction free, sensitivity and contamination) as the major product safety issue. In rare cases doctors consider sensitivity (4.62%) as product safety issue.
8. 83.03% of the doctors are satisfied with the existing brands but important is that only 10.77% of the doctors are highly satisfied and 6.15% of the doctors think that the product’s brands need to be improved while nobody is unsatisfied with the product.
9. 70.77% of the doctors think that the pricing of the currently available IVIG brands is expensive and 18.46 % of them think that it is affordable and 10.77% of them think that it is not affordable.
10. 93.85% of the doctors think that awareness programs about blood and plasma products are needed but 6.15 % of them think that no awareness program is needed.
11. 32.31 % of the doctors rely on the product itself and 61.54% of the doctors rely on companies brand images and safety record, 6.15% of the doctors rely on long term relationship and none of the doctors rely on other factors.
12. While prescribing the medicine 43.08% of the doctors are concerned about the price as major issue in prescribing plasma product to the patient and 15.28% did not find any issues in

prescribing plasma product to the patients, 9.23% are concerned about the safety and only 1.54% of the doctors consider both price and safety issue , 13.85% of them are concerned with the history of patient and 6.151% of the doctors say that it should not be used unless it is needed or it should be properly indicated. Only. 4.62% of the doctors are concerned with other issues.

B. HEPATITIS B IMMUNOGLOBULIN:

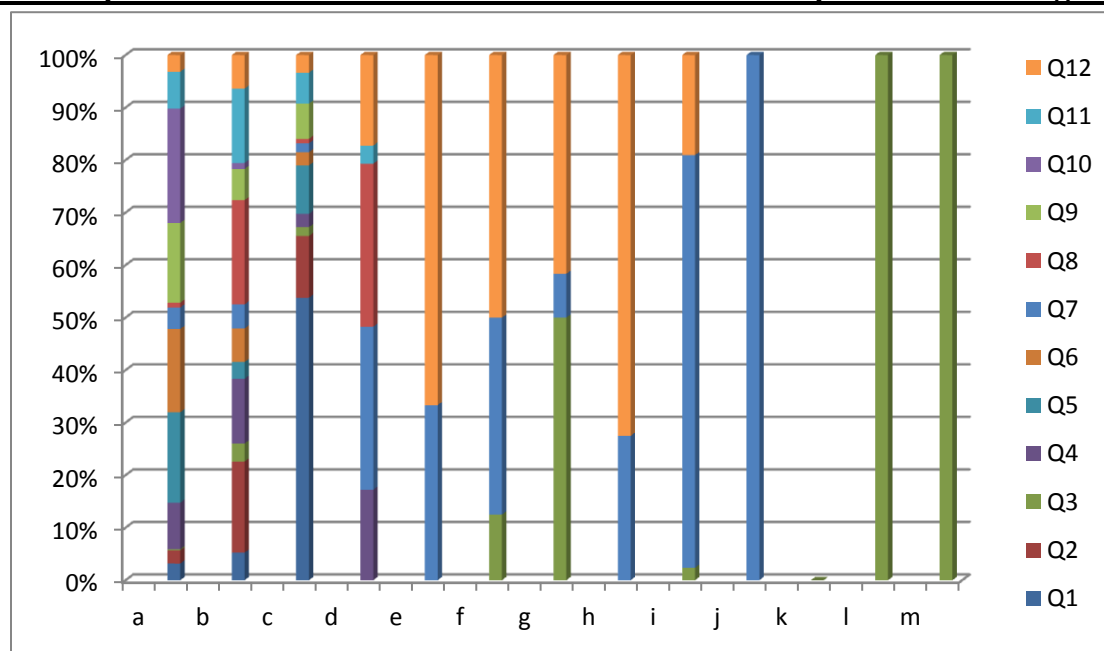
Table Representing The Sample Size and Total number of Responses for Hepatitis B Immunoglobulin :

QUESTION NO	1	2	3	4	5	6	7	8	9	10	11	12	13
SAMLE SIZE	101	101	101	101	101	101	101	101	101	101	101	101	101
NO. OF RESPONDENT	101	101	101	101	101	101	101	101	101	101	101	101	101

HEPATITIS B IMMUNOGLOBULIN												
(Responses below the digits are the values for each options in the form of percentage of the total number of responses collected per question)												
Number of responses collected per question in terms options like a,b,c etc.												
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
a	14	11	1	39	76	70	18	4	67	96	31	14
	13.86	10.89	0.99	38.61	75.25	69.31	17.82	3.96	66.34	95.05	30.69	13.86
b	23	76	15	54	14	28	20	87	26	5	62	28
	22.77	75.25	14.85	53.47	13.86	27.72	19.80	86.14	25.74	4.95	61.39	27.72
c	64	14	2	3	11	3	2	1	8		7	4
	63.37	13.86	1.98	2.97	10.89	2.97	1.98	0.99	7.92		6.93	3.96
d			0	5			9	9			1	5
			0	4.95			8.91	8.91			0.99	4.95
e			0				2					4
			0				1.98					3.96
f			1				3					4
			0.99				2.97					3.96
g			6				1					5
			5.94				0.99					4.95
h			0				11					29
			0				10.89					28.71
i			1				33					8
			0.99				32.67					7.92
j			0				2					
			0				1.98					
k			0									
			0									
l			68									

			67.33									
			7									
m			6.93									

Pictorial Representation Of The Above Tabulated Values Of Hepatitis B Immunoglobulin :



Response Profile for Hepatitis B Immunoglobulin :

1. There are 13.86 % of the doctors ,who are using HEPATITIS B IMMUNOGLOBULIN ,have less than 3 years of experiences.22.77% of the doctors ,who are using the same, have 3 to 7 years of experiences and 63.37 % of the doctors, who are using these products,have more than 7 years of experiences.
2. Availability of the Product has been good(on the basis of 75.25% of the doctors' opinion) but all doctors are not extremely satisfied because only 10.89% of the doctors said availability is excellent and 13.86% of the doctors said that availability is poor.
3. 67.33% of the doctors do not prefer any particular brand and from those who prefer any brand 14.85% of the doctors prefer Bharat serum , 5.94% of the doctors prefer Shantha.
4. Doctors prefer a particular brand mainly for availability (53.47%) and better product (38.61%) and 4.95 % doctors are influenced by other factors.
5. 75.25% doctors are prescribing HEPATITIS B IMMUNOGLOBULIN less than 10 vials per month per patient, 13.86 % of the doctors are using 10 to 20 vials per month per patient and 10.89 % of them are prescribing more than 20 vials per month per patient.

6. Because it is a biological “made out of human plasma”; doctors consider source of plasma as an important criterion in selection of the product and think it should be given utmost priority as 69.31% of them opted for the option “very critical” and 27.72% of them opted for the option “critical” . Only 2.97% of the doctors consider it to be not critical.
7. While using these product 32.671% of the doctors did not found any safety issue , 19.80% of the doctors found that the product should be infection free and 17.82% of the doctors feel that the products should be maintained in proper cold chain conditions and 8.91% of them consider product to be free from any infection and also 10.89% think all the above mentioned factors to be followed for maintaining the proper safety issues of the product . In rare cases , they also consider proper storage (1.98%) , free from any contamination (2.93%).
8. 86.14% of the doctors are satisfied with the existing brands but important is that only 3.96% of the doctors are highly satisfied and 8.91% of the doctors think that the product’s brands need to be improved.
9. 66.34% of the doctors think that the pricing of the currently available HEPATITIS B IMMUNOGLOBULIN brands is expensive and 25.74% of them think that it is affordable and 7.92 % of them think that it is not affordable.
10. 95.05% of the doctors think that awareness programs about blood and plasma products are needed but 7.92 % of them think that no awareness program is needed.
11. 61.39 % of the doctors rely on the companies brand images and safety record, 30.69% of the doctors rely on product itself , 6.93 relies on the long term relationships and 0.99% of the doctors rely on other factors.
12. While prescribing the medicine 28.71 % of the doctors are either concerned about any factor,27.72% are concerned about the cost and the pricing issues,13.86% are concerned about the safety issues and few other factors that came into light were 4.95 % availability,3.96 % doctors were concerned with both safety and pricing issues.

C. ALBUMIN :

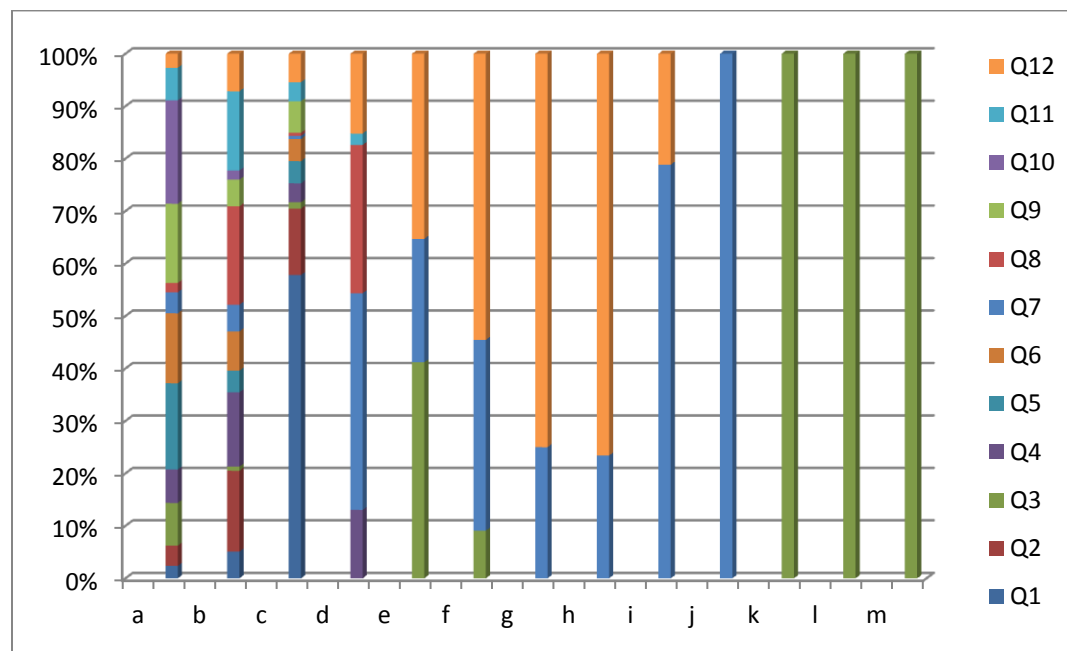
Table Representing The Sample Size And Total Number Of Responses For Albumin:

QUESTION NO	1	2	3	4	5	6	7	8	9	10	11	12
SAMLE SIZE	144	144	144	144	144	144	144	144	144	144	144	144
NO. OF RESPONDENT	144	144	144	144	114	144	144	144	144	144	144	144

ALBUMIN												
(Responses below the digits are the values for each options in the form of percentage of the total number of responses collected per question)												
Number of responses collected per question in terms options like a,b,c etc.												
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
a	16 11.11	26 18.06	55 38.19	43 29.86	111 77.08	90 62.50	27 18.75	12 8.33	102 70.83	133 92.36	42 29.17	18 12.50
b	32 22.22	97 67.36	5 3.47	89 61.81	26 18.06	47 32.64	32 22.22	118 81.94	32 22.22	11 7.64	95 65.97	45 31.25
c	96 66.67	21 14.58	2 1.39	6 4.17	7 4.86	7 4.86	1 0.69	1 0.69	10 6.94		6 4.17	9 6.25
d			0 0	6 4.17			19 13.19	13 9.03			1 0.69	7 4.86
e			7 4.86				4 2.78					6 4.17
f			1 0.69				4 2.78					6 4.17
g			0 0				2 1.39					6 4.17
h			0 0				11.00 7.64					36 25
i			0 0				41 28.47					11 7.64
j			0 0				3 2.08					
k			2 1.39									
l			66									

			45.83									
			6									
m			4.17									

Pictorial Representation Of The Above Tabulated Values Of Albumin:



Response Profile For Albumin:

1. There are only 11.11 % of the doctors ,who are using ALBUMIN , have less than 3 years of experiences. 22.22 % of the doctors ,who are using the same, have 3 to 7 years of experiences and 66.67 % of the doctors, who are using these products,have more than 7 years of experiences.
2. Availability of the Product has been good (on the basis of 67.36 % of the doctors' opinion) but all doctors are not extremely satisfied because only 18.06 % of the doctors said availability is excellent and 14.58 % of the doctors said that availability is poor.
3. 45.83 % of the doctors do not prefer any particular brand and from those who prefer any brand 33.19 % of the doctors prefer Reliance , 3.47% of the doctors prefer Bharat Serum.
4. Doctors prefer a particular brand mainly for availability (61.81 %) . 29.86 % of the doctors are concerned with the quality of the product,i.e,they opt for better product option and 4.17 % doctors are influenced by pricing factors and 4.17 % are concerned with other factors .

5. 77.08 % doctors are prescribing Albumin less than 10 vials per month per patient, 18.06 % of the doctors are using 10 to 20 vials per month per patient and 4.86 % of them are prescribing more than 20 vials per month per patient.
6. Because it is a biological “made out of human plasma”; doctors consider source of plasma as an important criterion in selection of the product and think it should be given utmost priority as 62.50% of them opted for the option “very critical” and 32.64 % of them opted for the option “critical” . Only 4.86 % of the doctors consider it to be not critical.
7. While using these product 28.47 % of the doctors did not found any safety issue , 22.2 2% of the doctors found the product to be infection free and 18.75 % of the doctors feel that the products should be properly maintained in cold chain conditions . 13.91 % found product to be infection free from nay allergic reactions and rarely other cases are storage and contamination (2.78 %) .
8. 81.94 % of the doctors are satisfied with the existing brands but important is that only 8.33 % of the doctors are highly satisfied and 9.03 % of the doctors think that the product’s brands needs improvement .
9. 70.83 % of the doctors think that the pricing of the currently available Albumin brands is expensive and 22.22 % of them think that it is affordable and 6.94 % of them think that it is not affordable.
10. 92.36 % of the doctors think that awareness programs about blood and plasma products are needed but 7.64 % of them think that no awareness program is needed.
11. 29.17 % of the doctors rely on the product itself and 65.97 % of the doctors rely on companies brand images and safety record, 4.17 % of the doctors rely on long term relationship and 0.96 % of the doctors rely on other factors.
12. While prescribing the medicine 31.25 % of the doctors are concerned about the cost and 12.50 % are concerned about the safety issue and 6.25 % of them are concerned with both , safety and price of the product and 7.64 % of the doctors are concerned with other issues like the proper standard to be maintained with the standard guidelines prepared.

D. ANTI-D IMMUNOGLOBULIN :

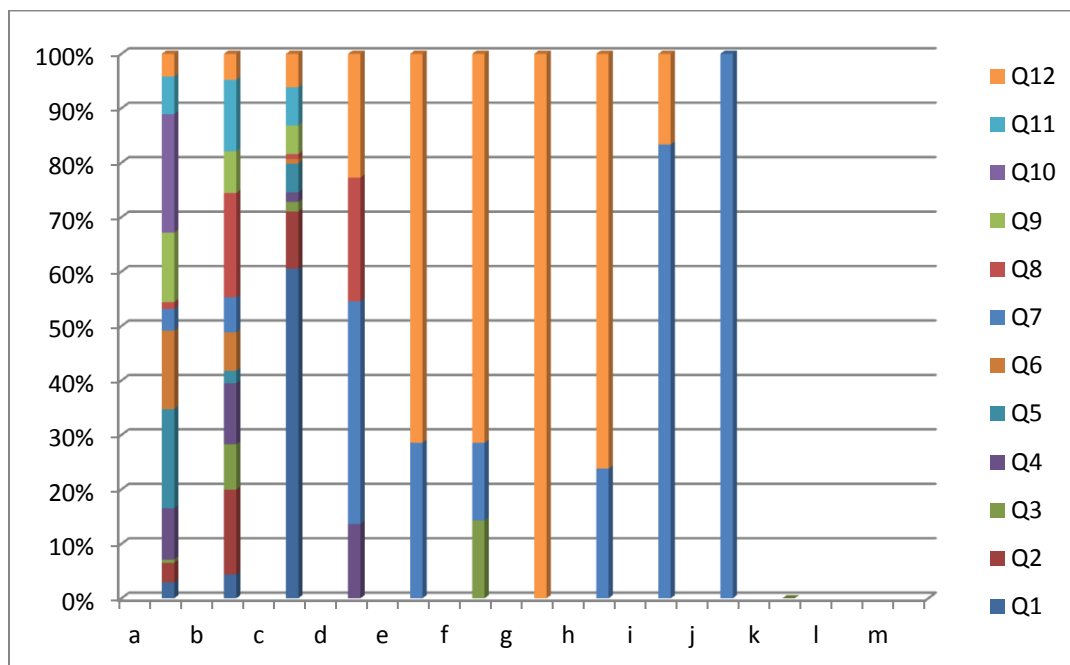
Table Representing The Sample Size and Total number of Responses for ANTI-D IMMUNOGLOBULIN :-

QUESTION NO	1	2	3	4	5	6	7	8	9	10	11	12	13
SAMLE SIZE	104	104	104	104	104	104	104	104	104	104	104	104	104
NO. OF RESPONDENT	104	104	104	104	104	104	104	104	104	104	104	104	104

ANTI D IMMUNOGLOBULIN <u>(Responses below the digits are the values for each options in the form of percentage of the total number of responses collected per question)</u> Number of responses collected per question in terms options like a,b,c etc.												
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
a	14 13.46	17 16.35	3 2.88	45 43.27	87 83.65	69 66.35	19 18.27	6 5.77	61 58.65	104 100.00	33 31.73	20 19.23
b	21 20.19	75 72.12	40 38.46	54 51.92	11 10.58	34 32.69	31 29.81	92 88.46	37 35.58	0 0.00	63 60.58	23 22.12
c	69 66.35	12 11.54	2 1.92	2 1.92	6 5.77	1 0.96	0 0.00	1 0.96	6 5.77	0 0.00	8 7.69	7 6.73
d			0.00 0.00	3.00 2.88			9.00 8.65	5.00 4.81			0.00 0.00	5.00 4.81
e			0.00 0.00				2.00 1.92					5.00 4.81
f			1.00 0.96				1.00 0.96					5.00 4.81
g			0.00 0.00				0.00 0.00					1.00 0.96
h			0.00 0.00				10.00 9.62					32.00 30.77
i			0.00 0.00				30.00 28.85					6.00 5.77
j			0.00 0.00				2.00 1.92					
k			0.00 0.00									
l			52.00									

			50.00									
			6.00									
m			5.77									

Pictorial Representation of the above tabulated values of ANTI-D IMMUNOGLOBULIN :



Response Profile for ANTI D IMMUNOGLOBULIN:

1. There are 13.46 % of the doctors ,who are using ANTI D IMMUNOGLOBULIN ,have less than 3 years of experiences.20.19% of the doctors ,who are using the same, have 3 to 7 years of experiences and 66.35 % of the doctors, who are using these products,have more than 7 years of experiences.
2. Availability of the Product has been good(on the basis of 72.12% of the doctors' opinion) but all doctors are not extremely satisfied because only 16.35% of the doctors said availability is excellent and 11.54% of the doctors said that availability is poor.
3. 50% of the doctors do not prefer any particular brand and from those who prefer any brand 38.46% of the doctors prefer Bharat Serum , 2.88% of the doctors prefer Reliance, 1.92% of the doctors prefer Serum Insitute and remaining prefer other brands.
4. Doctors prefer a particular brand mainly for availability (51.92%) and better product(43.27%). 1.92 % of the doctors are concerned with the price and 2.88 % doctors are influenced by other factors.

5. 83.65% doctors are prescribing ANTI D IMMUNOGLOBULIN less than 10 vials per month per patient, 10.58 % of the doctors are using 10 to 20 vials per month per patient and 5.77% of them are prescribing more than 20 vials per month per patient.
6. Because it is a biological “made out of human plasma”; doctors consider source of plasma as an important criterion in selection of the product and think it should be given utmost priority as 66.35% of them opted for the option “very critical” and 32.69% of them opted for the option “critical”.Only 0.96% of the doctors consider it to be not critical.
7. While using these product 28.85% of the doctors did not found any safety issue , 29.81 % of the doctors found infection free 18.27 % found cold chain maintenance as the most important safety issue.
8. 88.46% of the doctors are satisfied with the existing brands but important is that only 5.77% of the doctors are highly satisfied and 4.81% of the doctors think that the product’s brands need to be improved and just 0.96% of the doctors are unsatisfied.
9. 58.65% of the doctors think that the pricing of the currently available ANTI D IMMUNOGLOBULIN brands is expensive and 35.58 % of them think that it is affordable and 5.77 % of them think that it is not affordable.
10. 100% of the doctors think that awareness programs about blood and plasma products are needed.
11. 31.73 % of the doctors rely on the product itself and 60.58% of the doctors rely on companies brand images and safety record, 7.69% of the doctors rely on long term relationship.
12. While prescribing the medicine 30.77 % of the doctors are not concerned about any issues while prescribing these products to the patients and 22.12 % are concerned about the cost , 19.23 % are concerned about the safety issues. 6.73 % are concerned about both safety and pricing issues both.

E. ANTI-RABIES IMMUNOGLOBULIN :

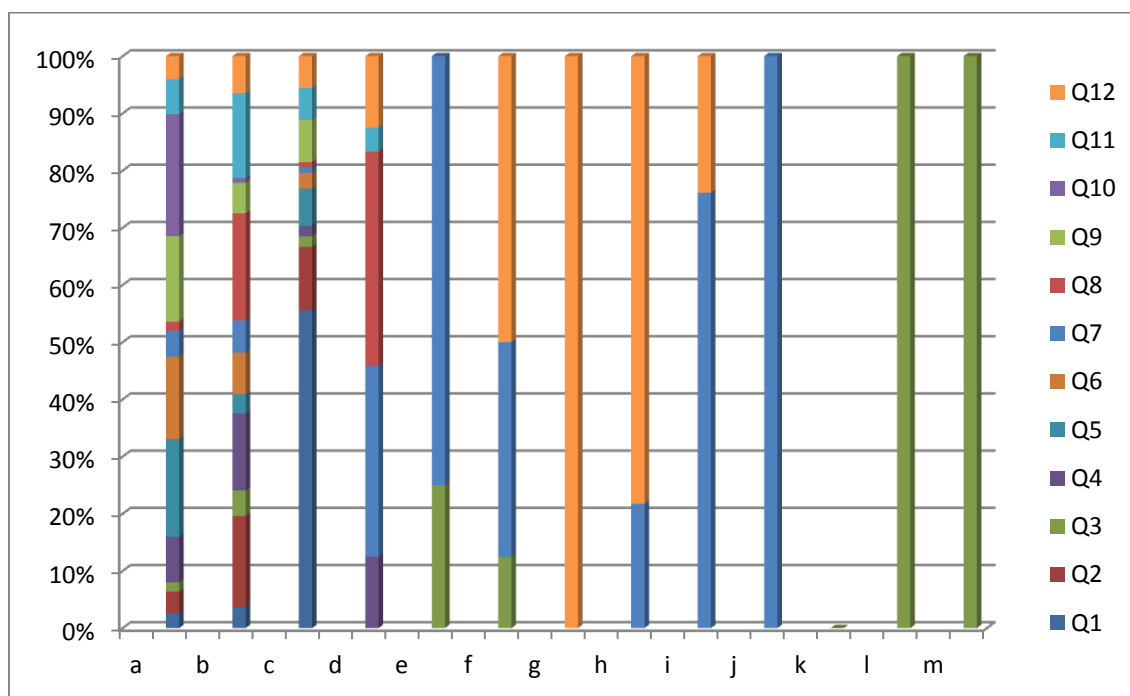
Table Representing The Sample Size and Total number of Responses for ANTI-RABIES IMMUNOGLOBULIN :-

QUESTION NO	1	2	3	4	5	6	7	8	9	10	11	12	13
SAMLE SIZE	83	83	83	83	83	83	83	83	83	83	83	83	83
NO. OF RESPONDENT	83	83	83	83	83	83	83	83	83	83	83	83	83

ANTI RABIES IMMUNOGLOBULIN												
(Responses below the digits are the values for each options in the form of percentage of the total number of responses collected per question)												
Number of responses collected per question in terms options like a,b,c etc.												
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
a	10 12.05	14 16.87	6 7.23	30 36.14	64 77.11	54 65.06	17 20.48	6 7.23	56 67.47	80 96.39	23 27.71	15 18.07
b	13 15.66	57 68.67	16 19.28	48 57.83	12 14.46	26 31.33	20 24.10	67 80.72	19 22.89	3 3.61	53 63.86	23 27.71
c	60 72.29	12 14.46	2 2.41	2 2.41	7 8.43	3 3.61	1 1.20	1 1.20	8 9.64	0.00	6 7.23	6 7.23
d			0.00 0.00	3.00 3.61			8.00 9.64	9.00 10.84			1.00 1.20	3.00 3.61
e			1.00 1.20				3.00 3.61					3.00 0.00
f			1.00 1.20				3.00 3.61					4.00 4.82
g			0.00 0.00				0.00 0.00					1.00 1.20
h			0.00 0.00				8.00 7.69					23.00 27.71
i			0.00 0.00				20.00 19.23					5.00 6.02
j			0.00 0.00				3.00 3.61					
k			0.00 0.00									
l			55.00									

			66.27									
m			2.00									
			2.41									

Pictorial Representation of the above tabulated values of ANTI-RABIES IMMUNOGLOBULIN :



Response Profile for ANTI-RABIES IMMUNOGLOBULIN :

1. There are 12.05 % of the doctors, who are using ANTI-RABIES IMMUNOGLOBULIN, have less than 3 years of experience. 15.66 % of the doctors, who are using the same, have 3 to 7 years of experience and 72.29 % of the doctors, who are using these products, have more than 7 years of experience.
2. Availability of the Product has been good (on the basis of 68.67 % of the doctors' opinion) but all doctors are not extremely satisfied because only 16.87 % of the doctors said availability is excellent and 14.46 % of the doctors said that availability is poor.
3. 66.27 % of the doctors do not prefer any particular brand and, 19.28 % of the doctors prefer Bharat Serum, 7.23 % prefer Reliance.

4. Doctors prefer a particular brand mainly for availability (57.83 %) . 36.14 % of the doctors are concerned with the quality of the product,i.e,they opt for better product option and pricing contributes nearly 2.41 % and 3.61 % doctors are influenced by other factors.
5. 77.11 % doctors are prescribing ANTI-RABIES IMMUNOGLOBULIN less than 10 vials per month per patient, 14.46 % of the doctors are using 10 to 20 vials per month per patient and 8.43 % of them are prescribing more than 20 vials per month per patient.
6. Because it is a biological “made out of human plasma”; doctors consider source of plasma as an important criterion in selection of the product and think it should be given utmost priority as 65.06 % of them opted for the option “very critical” and 31.33 % of them opted for the option “critical”.Only 3.61 % of the doctors consider it to be not critical.
7. While using these product 24.10 % of the doctors found product to be infection free as the most important issue , 2.48 % of the doctors found cold chain maintenance as the most important issue and 9.64 % of the doctors feel that the products should be reaction free and should be free from various diseases..
8. 80.72 % of the doctors are satisfied with the existing brands but important is that only 7.23 % of the doctors are highly satisfied and 10.84 % of the doctors think that the product’s brands need to be improved.
9. 67.47 % of the doctors think that the pricing of the currently available ANTI-RABIES IMMUNOGLOBULIN brands is expensive and 22.89 % of them think that it is affordable and 9.64 % of them think that it is not affordable.
10. 96.39 % of the doctors think that awareness programs about blood and plasma products are needed but 3.61 % of them think that no awareness program is needed.
11. 27.17 % of the doctors rely on the product itself and 63.86 % of the doctors rely on companies brand images and safety record, 7.23 % of the doctors rely on long term relationship and 1.20 % of the doctors rely on other factors.
12. While prescribing the medicine 27.71 % of the doctors are either concerned about any issues while prescribing these products to the patients and 27.71 % are concerned about the cost and 18.07 % of them are concerned with the safety issues of the product and 7.23 % of the doctors deals with both the issues of the safety and the price of the product .

F. FACTOR VII :

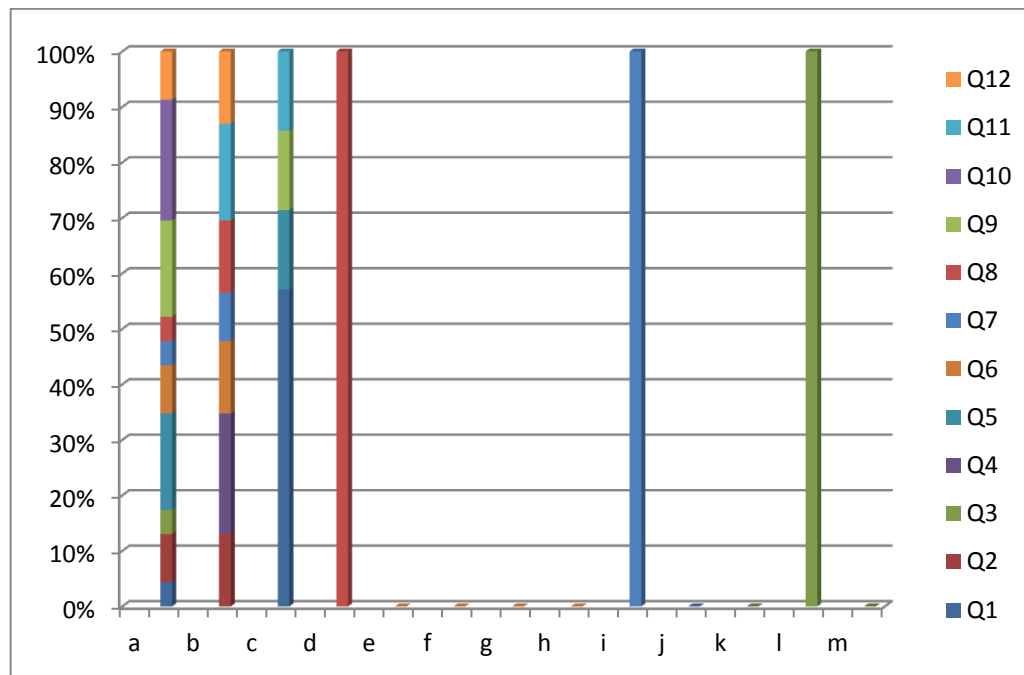
Table Representing The Sample Size and Total number of Responses for FACTOR VII :-

QUESTION NO	1	2	3	4	5	6	7	8	9	10	11	12	13
SAMLE SIZE	5	5	5	5	5	5	5	5	5	5	5	5	5
NO. OF RESPONDENT	5	5	5	5	5	5	5	5	5	5	5	5	5

FACTOR VII												
(Responses below the digits are the values for each options in the form of percentage of the total number of responses collected per question)												
Number of responses collected per question in terms options like a,b,c etc.												
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
a	1.00 20.00	2.00 40.00	1.00 20.00	0.00 0.00	4.00 80.00	2.00 40.00	1.00 20.00	1.00 20.00	4.00 80.00	5.00 100.00	0.00 0.00	2.00 40.00
b	0.00 0.00	3.00 60.00	0.00 0.00	5.00 100.00	0.00 0.00	3.00 60.00	2.00 40.00	3.00 60.00	0.00 0.00	0.00 0.00	4.00 80.00	3.00 60.00
c	4.00 80.00	0.00 0.00	0.00 0.00	0.00 0.00	1.00 20.00	0.00 0.00	0.00 0.00	0.00 0.00	1.00 20.00	0.00 0.00	1.00 20.00	0.00 0.00
d			0.00 0.00	0.00			0.00 0.00	1.00 20.00			0.00 0.00	0.00 0.00
e			0.00 0.00				0.00 0.00					0.00 0.00
f			0.00 0.00				0.00 0.00					0.00 0.00
g			0.00 0.00				0.00 0.00					0.00 0.00
h			0.00 0.00				0.00 0.00					0.00 0.00
i			0.00 0.00				2.00 40.00					0.00 0.00
j			0.00 0.00				0.00 0.00					
k			0.00 0.00									
l			4.00 80.00									

		0.00				
m		0.00				

Pictorial Representation of the above tabulated values of FACTOR VII :



Response Profile for FACTOR VII :

1. There are 20 % of the doctors ,who are using FACTOR VII ,have less than 3 years of experiences. 0% of the doctors ,who are using the same, have 3 to 7 years of experiences and 80 % of the doctors, who are using these products , have more than 7 years of experiences.
2. Availability of the Product has been good (on the basis of 60% of the doctors' opinion). 40% of the doctors said the availability is excellent and nobody said poor.
3. 80% of the doctors do not prefer any particular brand and from those who prefer any brand 20% of the doctors prefer Reliance.
4. 100% of the doctors prefer a particular brand mainly for availability .
5. General consumption pattern for FACTOR VII is 80% less than 10 . 0% 10-20 and more than 20 contributes to 20% of doctors.

6. Doctors consider source of plasma as an important criterion in selection of the product and think it should be given utmost priority as 40% of them opted for the option “very critical” and 60% of them opted for the option “critical”. Only 0% of the doctors consider it to be not critical.
7. While using these product 40 % of the doctors did not found any safety issue , 40 % of the doctors found these products to be infection free and 20 % of the doctors feel that the products should be in proper cold chain maintenance .
8. 60% of the doctors are satisfied with the existing brands but only 40% of the doctors are highly satisfied and no doctors think that the product’s brands need to be improved.
9. 80% of the doctors think that the pricing of the currently available FACTOR VII brands is expensive and 20% of them think that it not affordable.
10. 100% of the doctors think that awareness programs about blood and plasma products are needed.
11. 0 % of the doctors rely on the product itself and 80% of the doctors rely on companies brand images and safety record, 20% of the doctors rely on long term relationship and 0% of the doctors rely on other factors.
12. While prescribing the medicine 60 % of the doctors are concerned about the cost and 40 % are concerned about the safety issues for these products .

G. FACTOR VIII :

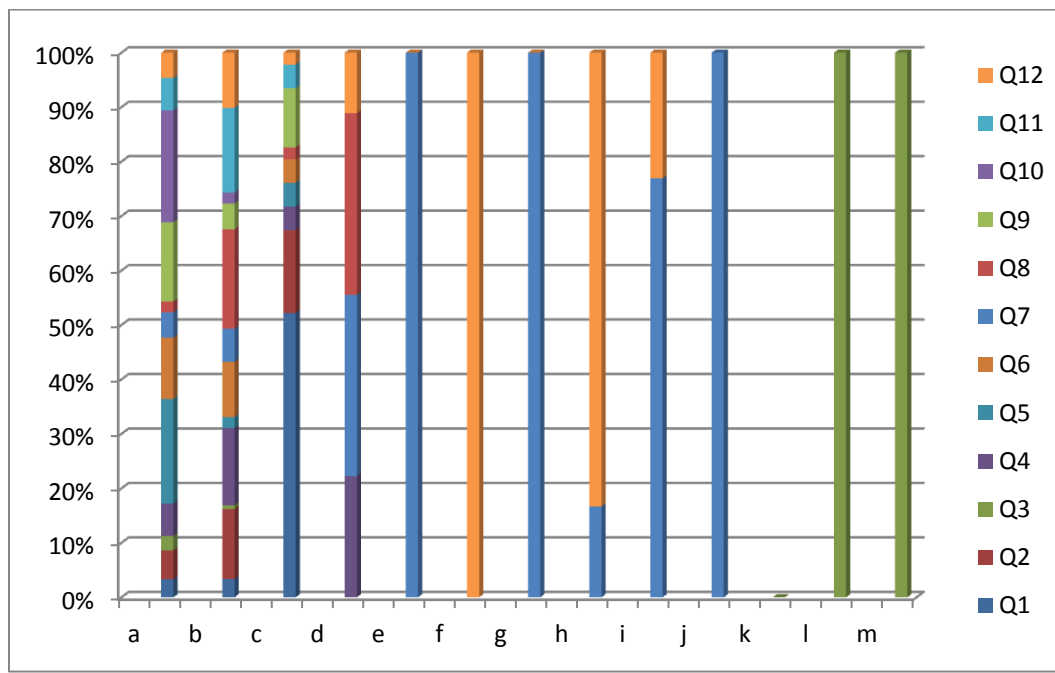
Table Representing The Sample Size and Total number of Responses for FACTOR VIII :-

QUESTION NO	1	2	3	4	5	6	7	8	9	10	11	12	13
SAMLE SIZE	34	34	34	34	34	34	34	34	34	34	34	34	34
NO. OF RESPONDENT	34	34	34	34	34	34	34	34	34	34	34	34	34

FACTOR VIII (Responses below the digits are the values for each options in the form of percentage of the total number of responses collected per question) Number of responses collected per question in terms options like a,b,c etc.												
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
a	5 14.71	8 23.53	4 11.76	9 26.47	29 85.29	17 50.00	7 20.59	3 8.82	22 64.71	31 91.18	9 26.47	7 20.59
b	5 14.71	19 55.88	1 2.94	21 61.76	3 8.82	15 44.12	9 26.47	27 79.41	7 20.59	3 8.82	23 67.65	15 44.12
c	24 70.59	7 20.59	0 0.00	2 5.88	2 5.88	2 5.88	0 0.00	1 2.94	5 14.71		2 5.88	1 2.94
d			0.00 0.00	2.00 5.88			3.00 8.82	3.00 8.82			0.00 0.00	1.00 2.94
e			0.00 0.00				1.00 2.94					0.00 0.00
f			0.00 0.00				0.00 0.00					2.00 5.88
g			0.00 0.00				1.00 2.94					0.00 0.00
h			0.00 0.00				1.00 2.94					5.00 14.71
i			0.00 0.00				10.00 29.41					3.00 8.82
j			0.00 0.00				2.00					
k			0.00 0.00									
l			27.00									

			79.41									
			2									
m			5.882353									

Pictorial Representation of the above tabulated values of FACTOR VIII :



Response Profile for FACTOR VIII :

1. There are 14.71 % of the doctors ,who are using FACTOR VIII ,have less than 3 years of experiences.14.71 % of the doctors ,who are using the same, have 3 to 7 years of experiences and 70.59 % of the doctors, who are using these products,have more than 7 years of experiences.
2. Availability of the Product has been good (on the basis of 55.88 % of the doctors' opinion) but all doctors are not extremely satisfied because only 23.53 % of the doctors said availability is excellent and 20.59 % of the doctors said that availability is poor.
3. 79.41 % of the doctors do not prefer any particular brand and from those who prefer any brand 2.94 % of the doctors prefer Bharat Serum, and 11.76 % of the doctors prefer Reliance.
4. Doctors prefer a particular brand mainly for availability (61.76 %) . 26.47 % of the doctors are concerned with the quality of the product , i.e, they opt for better product option and 5.88 % doctors are influenced by price factors and 5.88 % are concerned with other factors .

5. 85.29 % doctors are prescribing FACTOR VIII less than 10 vials per month per patient, 8.82 % of the doctors are using 10 to 20 vials per month per patient and 5.88 % of them are prescribing more than 20 vials per month per patient.
6. Doctors consider source of plasma as an important criterion in selection of the product and think it should be given utmost priority as 50 % of them opted for the option “very critical” and 44.12 % of them opted for the option “critical”.Only 5.88 % of the doctors consider it to be not critical.
7. While using these product 29.41 % of the doctors did not found any safety issue , 26.47 % of the doctors found infection free product to be the main safety issue and 20.59 % of the doctors feel that the products should be maintained in proper cold chain conditions .
8. 79.41 % of the doctors are satisfied with the existing brands but important is that only 8.82 % of the doctors are highly satisfied and 8.82 % of the doctors think that the product’s brands need to be improved.
9. 64.71 % of the doctors think that the pricing of the currently available FACTOR VIII brands is expensive and 20.59 % of them think that it is affordable and 14.71 % of them think that it is not affordable.
10. 91.18% of the doctors think that awareness programs about blood and plasma products are needed but 8.82 % of them think that no awareness program is needed.
11. 26.47 % of the doctors rely on the product itself and 67.65 % of the doctors rely on companies brand images and safety record, 5.88 % of the doctors rely on long term relationship and 7.41% of the doctors rely on other factors.
12. While prescribing the medicine 44.12 % of the doctors are concerned about the cost and 20.59% are concerned about the safety issue and 14.71 % are concerned with either of the issues that should be kept in mind while prescribing these products to the patients .

H. FACTOR IX:

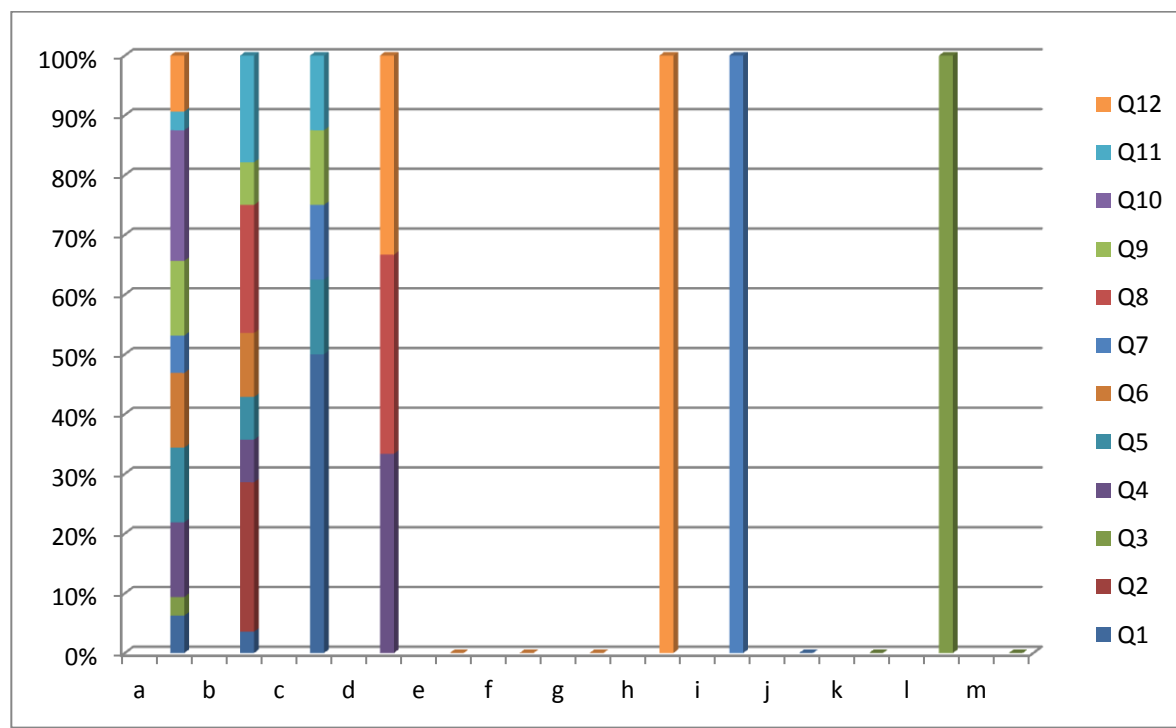
Table Representing The Sample Size and Total number of Responses for FACTOR IX :-

QUESTION NO	1	2	3	4	5	6	7	8	9	10	11	12	13
SAMLE SIZE	7	7	7	7	7	7	7	7	7	7	7	7	7
NO. OF RESPONDENT	7	7	7	7	7	7	7	7	7	7	7	7	7

FACTOR IX (Responses below the digits are the values for each options in the form of percentage of the total number of responses collected per question) Number of responses collected per question in terms options like a,b,c etc.												
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
a	2 28.57	0 0.00	1 14.29	4 57.14	4 57.14	4 57.14	2 28.57	0 0.00	4 57.14	7 100.00	1 14.29	3 42.86
b	1 14.29	7 100.00	0 0.00	2 28.57	2 28.57	3 42.86	0 0.00	6 85.71	2 28.57	0 0.00	5 71.43	0 0.00
c	4 57.14	0 0.00	0 0.00	0 0.00	1 14.29	0 0.00	1 14.29	0 0.00	1 14.29	0 0.00	1 14.29	0 0.00
d			0.00 0.00	1.00 14.29			0.00 0.00	1.00 14.29			0.00 0.00	1.00 14.29
e			0.00 0.00				0.00					0.00 0.00
f			0.00 0.00				0.00					0.00 0.00
g			0.00 0.00				0.00					0.00 0.00
h			0.00 0.00				0.00					2.00 28.57
i			0.00 0.00				4.00					1.00 14.29
j			0.00 0.00				0.00					
k			0.00 0.00									
l			6.00 85.71									

m			0.00										
			0.00										

Pictorial Representation of the above tabulated values of FACTOR IX :



Response Profile for FACTOR IX :

1. There are 28.57 % of the doctors ,who are using FACTOR IX ,have less than 3 years of experiences.14.29% of the doctors ,who are using the same, have 3 to 7 years of experiences and 57.14% of the doctors, who are using these products , have more than 7 years of experiences.
2. 100% of the doctors replied with the availability of the Product as good.
3. 85.71% of the doctors do not prefer any particular brand and from those who prefer any brand 14.29% of the doctors prefer Reliance .
4. Doctors prefer a particular brand mainly for availability (28.57%) . 57.14 % of the doctors are concerned with the quality of the product , i.e,they opt for better product option and 14.29 % doctors are influenced by other factors.
5. 57.14% doctors are prescribing FACTOR IX less than 10 vials per month per patient, 28.57 % of the doctors are using 10 to 20 vials per month per patient and 14.29 % of them are prescribing more than 20 vials per month per patient.

6. Doctors consider source of plasma as an important criterion in selection of the product and think it should be given utmost priority as 57.14% of them opted for the option “very critical” and 42.86% of them opted for the option “critical”.0% of the doctors consider it to be not critical.
7. While using these product 28.57 % of the doctors found cold chain maintenance of these products as the most important safety issue, 14.29 % found storage as the most important concern for these products and 57.14 % do not found any safety issues for these products.
8. 85.71% of the doctors are satisfied with the existing brands while no doctor is highly satisfied and 14.29 % of the doctors think that the product’s brands need to be improved.
9. 57.14% of the doctors think that the pricing of the currently available FACTOR IX brands is expensive and 28.57 % of them think that it is affordable and 14.29 % of them think that it is not affordable.
10. 100% of the doctors think the need of a awareness programs about blood and plasma products are.
11. 14.29 % of the doctors rely on the product itself and 71.43% of the doctors rely on companies brand images and safety record, 14.29% of the doctors rely on long term relationship.
12. While prescribing the medicine 42.86 % of the doctors are concerned about the safety of the patient the most important issue , 14.29 % concerns about the availability and 28.57 % have no safety issue and 14.29 % are concerned with other issues like Indications , Efficacy , Availability and Method of administration .

I. FIBRIN SEALANT :

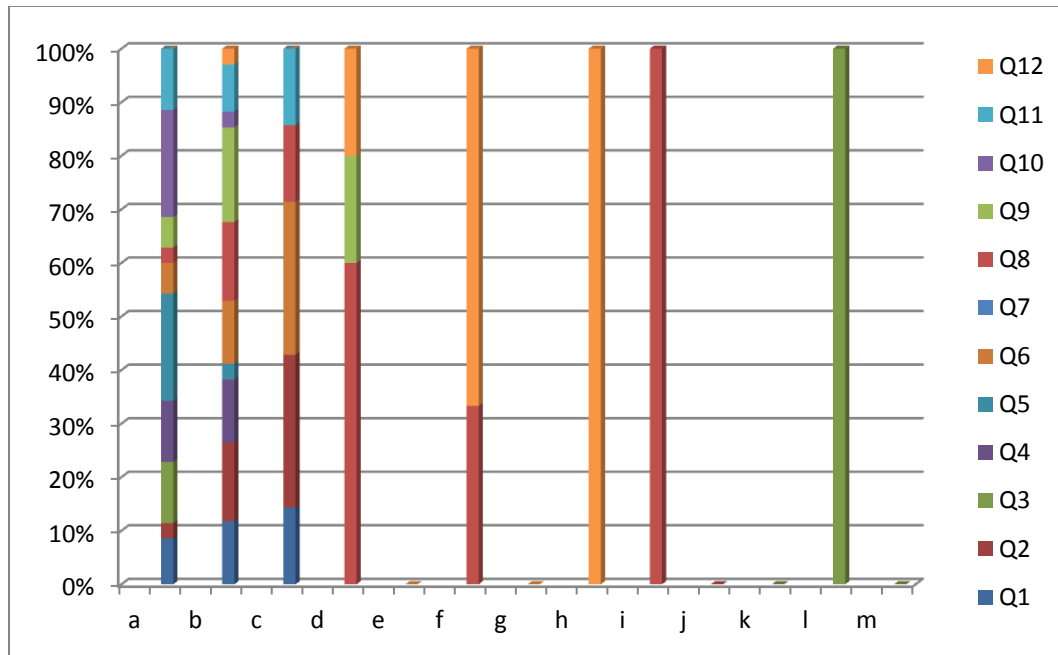
Table Representing The Sample Size and Total number of Responses for FIBRIN SEALANT :-

QUESTION NO	1	2	3	4	5	6	7	8	9	10	11	12	13
SAMLE SIZE	8	8	8	8	8	8	8	8	8	8	8	8	8
NO. OF RESPONDENT	8	8	8	8	8	8	8	8	8	8	8	8	8

FIBRIN SEALANT												
(Responses below the digits are the values for each options in the form of percentage of the total number of responses collected per question)												
Number of responses collected per question in terms options like a,b,c etc.												
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
a	3 37.5	1 12.5	4 50	4 50	7 87.5	2 25	0 0	1 12.5	2 25	7 87.5	4 50	0 0
b	4 50	5 62.5	0 0	4 50	1 12.5	4 50	0 0	5 62.5	6 75	1 12.5	3 37.5	1 12.5
c	1 12.5	2 25	0 0	0 0	0 0	2 25	0 0	1 12.5	0 0	0 0	1 12.5	0 0
d			0 0	0 0			3 37.5	1 12.5			0 0	1 12.5
e			0 0				0 0					0 0
f			0 0				1 12.5					2 25
g			0 0				0 0					0 0
h			0 0				0 0					4 50
i			0 0				4 50					0 0
j			0 0				0 0					
k			0 0									
l			4 50									

[illegible]

Pictorial Representation of the above tabulated values of FIBRIN SEALANT :



Response Profile for FIBRIN SEALANT :

1. There are 37.5 % of the doctors ,who are using FIBRIN SEALANT, have less than 3 years of experiences. 50 % of the doctors ,who are using the same, have 3 to 7 years of experiences and 12.5 % of the doctors, who are using these products, have more than 7 years of experiences.
2. Availability of the Product has been good (on the basis of 62.5 % of the doctors' opinion) but all doctors are not extremely satisfied because only 12.5 % of the doctors said availability is excellent and 25 % of the doctors said that availability is poor.
3. 50 % of the doctors do not prefer any particular brand and from those who prefer any brand 50% of the doctors prefer Reliance.
4. Doctors prefer a particular brand mainly for availability (50 %) and 50 % of the doctors are concerned with the quality of the product ,i.e., they opt for better product option .
5. 87.5 % doctors are prescribing FIBRIN SEALANT less than 10 vials per month per patient, 12.5 % of the doctors are using 10 to 20 vials per month per patient and 0 % of them are prescribing more than 20 vials per month per patient.

6. Doctors consider source of plasma as an important criterion in selection of the product and think it should be given utmost priority as 25% of them opted for the option “very critical” and 50% of them opted for the option “critical” and 25 % of the doctors consider it to be not critical.
7. While using these product 50 % of the doctors did not found any safety issue , 37.5 % of the doctors found allergic reactions and 12.5 % of the doctors feel that the products should be purified and should be free from any contamination .
8. 62.5 % of the doctors are satisfied with the existing brands but important is that only 12.5 % of the doctors are highly satisfied and 12.5 % of the doctors think that the product’s brands need to be improved.
9. 25 % of the doctors think that the pricing of the currently available FIBRIN SEALANT brands is expensive and 75 % of them think that it is affordable and 0 % of them think that it is not affordable.
10. 87.5% of the doctors think that awareness programs about bloos and plasma prosucts are needed but 12.5 % of them think that no awareness program is needed.
11. 50 % of the doctors rely on the product itself and 37.5 % of the doctors rely on companies brand images and safety record, 12.5 % of the doctors rely on long term relationship .
12. While prescribing the medicine 50 % of the doctors are either concerned about any issues while prescribing these products to the patients and only 12.5 % and 12.5 % are concerned about the cost and the availability issues.

J . FACTOR VIII+VWF :

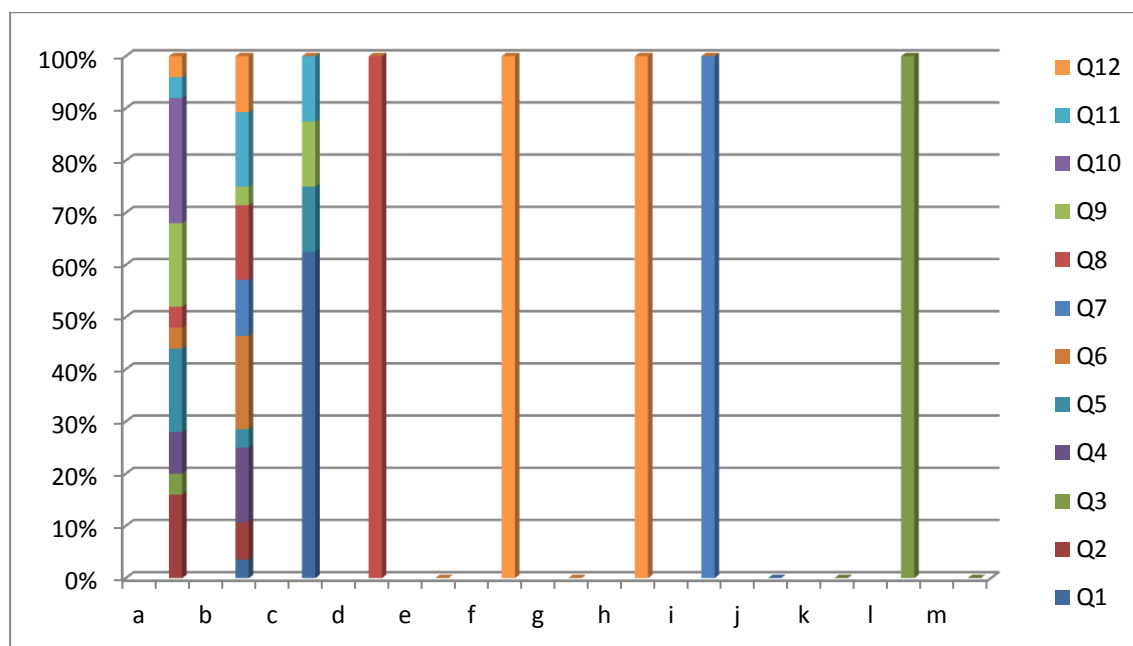
Table Representing The Sample Size and Total number of Responses for FACTOR VIII+VWF :-

QUESTION NO	1	2	3	4	5	6	7	8	9	10	11	12	13
SAMLE SIZE	6	6	6	6	6	6	6	6	6	6	6	6	6
NO. OF RESPONDENT	6	6	6	6	6	6	6	6	6	6	6	6	6

FACTOR VIII+VWF (Responses below the digits are the values for each options in the form of percentage of the total number of responses collected per question) Number of responses collected per question in terms options like a,b,c etc.												
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
a	0 0.00	4 66.67	1 16.67	2 33.33	4 66.67	1 16.67	0 0.00	1 16.67	4 66.67	6 100.00	1 16.67	1 16.67
b	1 16.67	2 33.33	0 0.00	4 66.67	1 16.67	5 83.33	3 50.00	4 66.67	1 16.67	0 0.00	4 66.67	3 50.00
c	5 83.33	0 0.00	0 0.00	0 0.00	1 16.67	2 33.33	0 0.00	0 0.00	1 16.67	0 0.00	1 16.67	0 0.00
d			0.00 0.00	0.00			0.00 0.00	1.00 16.67			0.00 0.00	0.00 0.00
e			0.00 0.00				0.00 0.00					0.00 0.00
f			0.00 0.00				0.00 0.00					1.00 16.67
g			0.00 0.00				0.00 0.00					0.00 0.00
h			0.00 0.00				0.00 0.00					1.00 16.67
i			0.00 0.00				3.00 50.00					0.00 0.00
j			0.00 0.00				0.00 0.00					
k			0.00 0.00									

I			5.00				
			83.33				
m			0.00				
			0.00				

Pictorial Representation of the above tabulated values of FACTOR VIII +VWF :



Response Profile for FACTOR VIII+VWF :

1. There are 0 % of the doctors ,who are using FACTOR VIII+VWF ,have less than 3 years of experiences.16.67% of the doctors ,who are using the same, have 3 to 7 years of experiences and 83.33% of the doctors, who are using these products, have more than 7 years of experiences.
2. Availability of the Product has been excellent (on the basis of 66.67% of the doctors' opinion) but all doctors are not extremely satisfied because only 33.33% of the doctors said availability is good.
3. 83.33% of the doctors do not prefer any particular brand and from those who prefer any brand 16.67% of the doctors prefer Reliance.
4. Doctors prefer a particular brand mainly for availability (66.67%). 33.33 % of the doctors are concerned with the quality of the product,i.e,they opt for better product option .

5. 66.67% doctors are prescribing FACTOR VIII+VWF less than 10 vials per month per patient, 16.67 % of the doctors are using 10 to 20 vials per month per patient and 16.67% of them are prescribing more than 20 vials per month per patient.
6. Because it is a biological “made out of human plasma”; doctors consider source of plasma as an important criterion in selection of the product and think it should be given utmost priority as 16.67% of them opted for the option “very critical” and 83.33% of them opted for the option “critical”.
7. While using these product 50 % of the doctors did not found any safety issue , and 50 % wants these products to be infection free .
8. 66.67% of the doctors are satisfied with the existing brands but important is that only 16.67% of the doctors are highly satisfied and 16.67% of the doctors think that the product’s brands need to be improved.
9. 66.67% of the doctors think that the pricing of the currently available FACTOR VIII+VWF brands is expensive and 16.67% of them think that it is affordable and 16.67 % of them think that it is not affordable.
10. 100% of the doctors think that there should be a awareness programs about blood and plasma products.
11. 16.67 % of the doctors rely on the product itself and 66.67% of the doctors rely on companies brand images and safety record, 16.67% of the doctors rely on long term relationship.
12. While prescribing the medicine 50 % of the doctors are concerned about the cost and 16.67 % are concerned about the safety issues ,contamination and also represent the doctors who do not have any concern for these products.

K . TETANUS HYPER IMMUNOGLOBULIN :

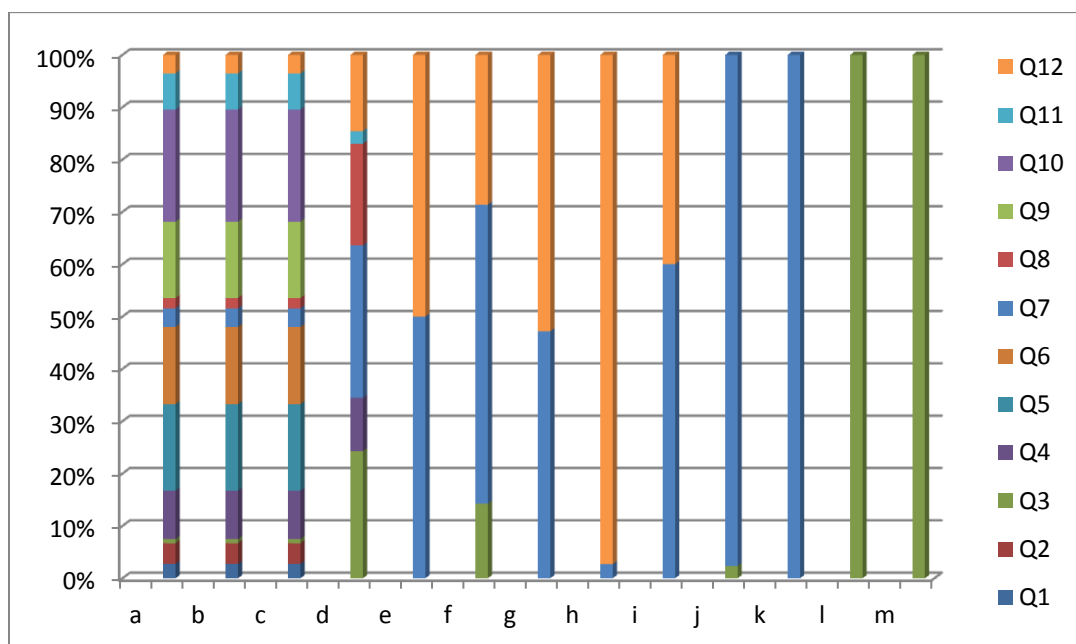
Table Representing The Sample Size and Total number of Responses for FACTOR VIII :

QUESTION NO	1	2	3	4	5	6	7	8	9	10	11	12	13
SAMLE SIZE	112	112	112	112	112	112	112	112	112	112	112	112	112
NO. OF RESPONDENT	112	112	112	112	112	112	112	112	112	112	112	112	112

TETANUS HYPERIMMUNOGLOBULIN												
(Responses below the digits are the values for each options in the form of percentage of the total number of responses collected per question)												
Number of responses collected per question in terms options like a,b,c etc.												
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
a	14 12.50	20 17.86	4 3.57	47 41.96	84 75.00	75 66.96	18 16.07	10 8.93	74 66.07	109 97.32	35 31.25	18 16.07
b	20 17.86	77 68.75	36 32.14	59 52.68	15 13.39	36 32.14	25 22.32	94 83.93	34 30.36	3 2.68	70 62.50	31 27.68
c	78 69.64	15 13.39	1 0.89	2 1.79	13 11.61	1 0.89	1 0.89	0 0.00	4 3.57	0 0.00	6 5.36	8 7.14
d			10 8.928571	4 3.571429			12 10.71429	8 7.142857			1 0.892857	6 5.357143
e			0 0				4 3.571429					4 3.571429
f			1 0.892857				4 3.571429					2 1.785714
g			0 0				3 2.678571					3 3
h			0 0				1 0.892857					36
i			0 0				6 5.357143					4
j			1 0.892857				39 34.8214					

							3						
k			0				3						
			0				2.67857						
l			56										
			50										
m			3										
			2.67857				1						

Pictorial Representation of the above tabulated values of TETANUS HYPER IMMUNOGLOBULIN :



Response Profile for TETANUS HYPER IMMUNOGLOBULIN :

1. There are 12.50 % of the doctors, who are using TETANUS HYPER IMMUNOGLOBULIN, have less than 3 years of experiences. 17.86 % of the doctors, who are using the same, have 3 to 7 years of experiences and 69.64 % of the doctors, who are using these products, have more than 7 years of experiences.
2. Availability of the Product has been good (on the basis of 68.75 % of the doctors' opinion) but all doctors are not extremely satisfied because only 17.86 % of the doctors said availability is excellent and 13.39 % of the doctors said that availability is poor.
3. 50 % of the doctors do not prefer any particular brand and from those who prefer any brand 32.14 % of the doctors prefer Bharat Serum, 3.57 % prefer Reliance

4. Doctors prefer a particular brand mainly for availability (52.68 %) and better product (41.96 %). and 3.57 % doctors are influenced by other factors and pricing factor contributed to 1.79 % .
5. 75 % doctors are prescribing TETANUS HYPER IMMUNOGLOBULIN less than 10 vials per month per patient, 13.39 % of the doctors are using 10 to 20 vials per month per patient and 11.61 % of them are prescribing more than 20 vials per month per patient.
6. Doctors consider source of plasma as an important criterion in selection of the product and think it should be given utmost priority as 66.96 % of them opted for the option “very critical” and 32.14 % of them opted for the option “critical” . Only 0.89 % of the doctors consider it to be not critical.
7. While using these product 34.82 % of the doctors did not find any safety issue , 10.71 % of the doctors found allergic reactions and 22.32 % of the doctors feel that the products should be purified and should be free from any infection .16.07 % said cold chain issue most important safety issue for them.
8. 83.93 % of the doctors are satisfied with the existing brands but important is that only 8.93 % of the doctors are highly satisfied and 7.14 % of the doctors think that the product’s brands need to be improved.
9. 66.07 % of the doctors think that the pricing of the currently available TETANUS HYPER IMMUNOGLOBULIN brands is expensive and 30.36 % of them think that it is affordable and 3.57 % of them think that it is not affordable.
10. 97.32 % of the doctors think that awareness programs about blood and plasma products are needed but 2.68 % of them think that no awareness program is needed.
11. 31.25 % of the doctors rely on the product itself and 62.50 % of the doctors rely on companies brand images and safety record, 5.36 % of the doctors rely on long term relationship and 0.89% of the doctors rely on other factors.
12. While prescribing the medicine 27.68 % of the doctors are concerned about the cost and 16.07 % are concerned about the safety issue and 36 % of them are not concerned with any of the issues while prescribing these products to the patients.

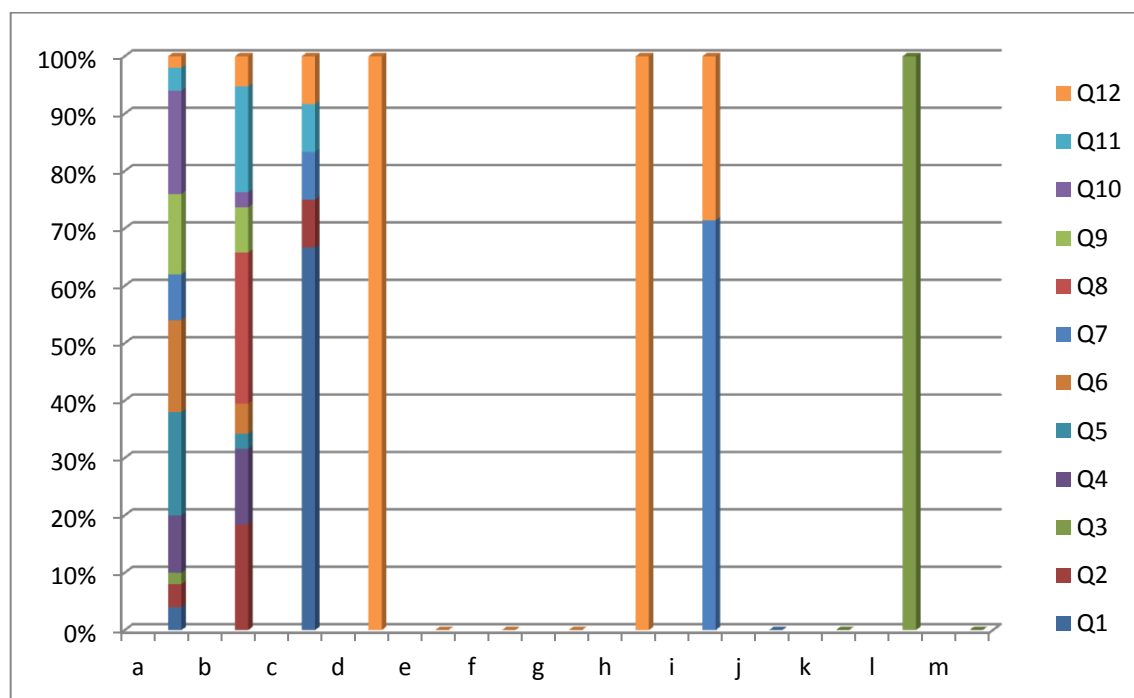
L . ANTI-THROMBIN III :

Table Representing The Sample Size and Total number of Responses for FACTOR VIII :-

QUESTION NO	1	2	3	4	5	6	7	8	9	10	11	12	13
SAMLE SIZE	10	10	10	10	10	10	10	10	10	10	10	10	10
NO. OF RESPONDENT	10	10	10	10	10	10	10	10	10	10	10	10	10

ANTI THROMBIN III												
(Responses below the digits are the values for each options in the form of percentage of the total number of responses collected per question)												
Number of responses collected per question in terms options like a,b,c etc.												
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
a	2.00 20.00	2.00 20.00	1.00 10.00	5.00 50.00	9.00 90.00	8.00 80.00	4.00 40.00	0.00 0.00	7.00 70.00	9.00 90.00	2.00 20.00	1.00 10.00
b	0.00 0.00	7.00 70.00	0.00 0.00	5.00 50.00	1.00 10.00	2.00 20.00	0.00 0.00	10.00 100.00	3.00 30.00	1.00 10.00	7.00 70.00	2.00 20.00
c	8.00 80.00	1.00 10.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	1.00 10.00	0.00 0.00	0.00 0.00	0.00 0.00	1.00 10.00	1.00 10.00
d			0.00 0.00	0.00 0.00			0.00 0.00	0.00 0.00			0.00 0.00	1.00 10.00
e			0.00 0.00				0.00 0.00					0.00 0.00
f			0.00 0.00				0.00 0.00					0.00 0.00
g			0.00 0.00				0.00 0.00					0.00 0.00
h			0.00 0.00				0.00 0.00					3.00 30.00
i			0.00 0.00				5.00 50.00					2.00 20.00
j			0.00 0.00				0.00 0.00					
k			0.00 0.00									
l			9.00 90.00									
m			0.00									

Pictorial Representation of the above tabulated values of ANTI-THROMBIN III :



Response Profile for ANTI THROMBIN III :

1. There are 20 % of the doctors ,who are using ANTI-THROMBIN III ,have less than 3 years of experiences.0% of the doctors ,who are using the same, have 3 to 7 years of experiences and 80 % of the doctors, who are using these products,have more than 7 years of experiences.
2. Availability of the Product has been good(on the basis of 70% of the doctors' opinion) but all doctors are not extremely satisfied because only 20% of the doctors said availability is excellent and 10% of the doctors said that availability is poor.
3. 90% of the doctors do not prefer any particular brand and from those who prefer any brand 10% of the doctors prefer Reliance.
4. Doctors prefer a particular brand mainly for availability (50%) . 50 % of the doctors are concerned with the quality of the product,i.e,they opt for better product option
5. 90% doctors are prescribing ANTI-THROMBIN III less than 10 vials per month per patient, 10 % of the doctors are using 10 to 20 vials per month per patient and 0 % of them are prescribing more than 20 vials per month per patient.

6. Because it is a biological “made out of human plasma”; doctors consider source of plasma as an important criterion in selection of the product and think it should be given utmost priority as 80 % of them opted for the option “very critical” and 20% of them opted for the option “critical”.
7. While using these product 50 % of the doctors did not found any safety issue , 40 % of the doctors found cold chain maintenance of these products to be the most important issue and 10 % doctors responded to storage issues as the most important safety factor.
8. 100% of the doctors are satisfied with the existing .
9. 70% of the doctors think that the pricing of the currently available ANTI-THROMBIN III brands is expensive and 30% of them think that it is affordable and 0 % of them think that it is not affordable.
10. 90% of the doctors think that awareness programs about blood and plasma products are needed but 10 % of them think that no awareness program is needed.
11. 20 % of the doctors rely on the product itself and 70% of the doctors rely on companies brand images and safety record, 10% of the doctors rely on long term relationship and 0% of the doctors rely on other factors.
12. While prescribing the medicine 30 % of the doctors are either concerned about any issues while prescribing these issues to the products and 20 % are concerned with the issues as Indications , Efficacy , Availability and Method of administration 20 % deals with the pricing factor and 10 % deals with the pricing issues .

M . FIBRINOGEN :

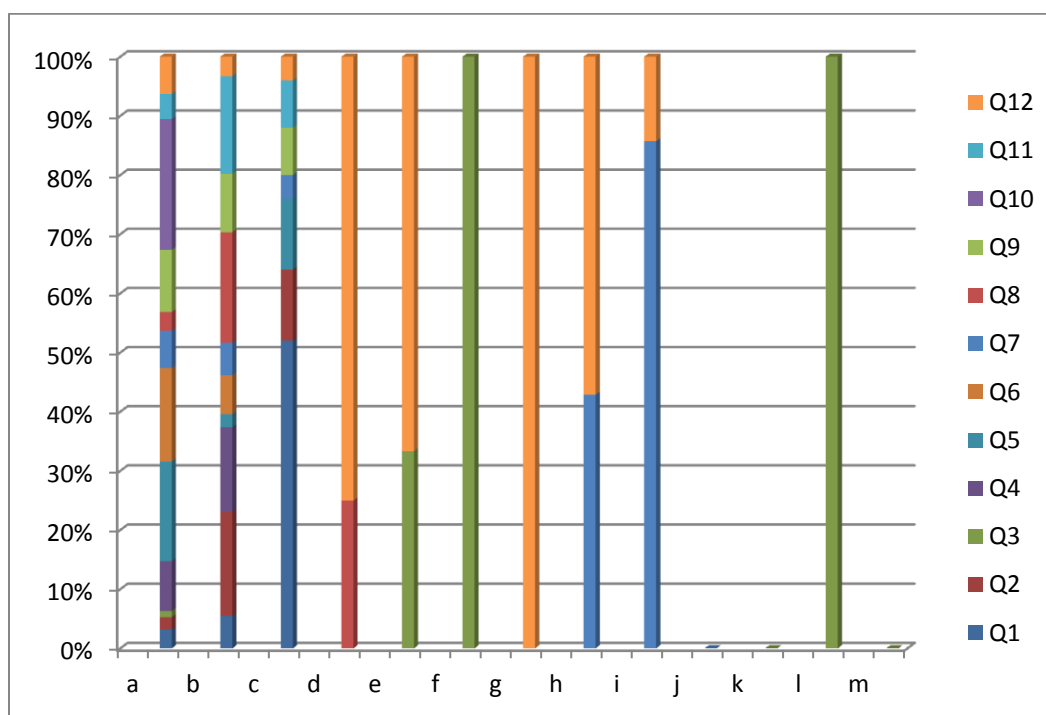
Table Representing The Sample Size and Total number of Responses for FIBRINOGEN :-

QUESTION NO	1	2	3	4	5	6	7	8	9	10	11	12	13
SAMLE SIZE	21	21	21	21	21	21	21	21	21	21	21	21	21
NO. OF RESPONDENT	21	21	21	21	21	21	21	21	21	21	21	21	21

FIBRINOGEN												
(Responses below the digits are the values for each options in the form of percentage of the total number of responses collected per question)												
Number of responses collected per question in terms options like a,b,c etc.												
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
a	3 14.29	2 9.52	1 4.76	8 38.10	16 76.19	15 71.43	6 28.57	3 14.29	10 47.62	21 100.00	4 19.05	6 28.57
b	5 23.81	16 76.19	0 0.00	13 61.90	2 9.52	6 28.57	5 23.81	17 80.95	9 42.86	0 0.00	15 71.43	3 14.29
c	13 61.90	3 14.29	0 0.00	0 0.00	3 14.29	0 0.00	1 4.76	0 0.00	2 9.52	0 0.00	2 9.52	1 4.76
d			0.00 0.00	0.00 0.00			0.00 0.00	1.00 4.76			0.00 0.00	3.00 14.29
e			1.00 4.76				0.00 0.00					2.00 9.52
f			1.00 4.76				0.00 0.00					0.00 0.00
g			0.00 0.00				0.00 0.00					1.00 4.76
h			0.00 0.00				3.00 14.29					4.00 19.05
i			0.00 0.00				6.00 28.57					1.00 4.76
j			0.00 0.00				0.00 0.00					
k			0.00									

			0.00									
l			18.00									
			85.71									
m			0.00									
			0.00									

Pictorial Representation of the above tabulated values of FIBRINOGEN:



Response Profile for FIBRINOGEN :

1. There are 14.29 % of the doctors ,who are using FIBRINOGEN ,have less than 3 years of experiences. 23.81% of the doctors ,who are using the same, have 3 to 7 years of experiences and 61.90% of the doctors, who are using these products,have more than 7 years of experiences.
2. Availability of the Product has been good (on the basis of 76.19% of the doctors' opinion) but all doctors are not extremely satisfied because only 9.52% of the doctors said availability is excellent and 14.29% of the doctors said that availability is poor.
3. 85.71% of the doctors do not prefer any particular brand and from those who prefer any brand 4.76% of the doctors prefer Reliance,Synergy and Intas .
4. Doctors prefer a particular brand mainly for availability (61.90%) . 38.10 % of the doctors are concerned with the quality of the product,i.e,they opt for better product option

5. 76.19% doctors are prescribing FIBRINOGEN less than 10 in number , 9.52 % of the doctors are 10 to 20 in number and 14.29 % of them are prescribing more than 20 vials per month per patient.
6. Doctors consider source of plasma as an important criterion in selection of the product and think it should be given utmost priority as 71.43 % of them opted for the option “very critical” and 28.57% of them opted for the option “critical”.
7. While using these product 28.57% of the doctors did not found any safety issue , 28.57% of the doctors found cold chain maintenance as the most important issue and 23.81% of the doctors feel that the products should be purified and should be free from ant infection.4.76% of doctors contributes to storage of product as the most important issue .
8. 80.95% of the doctors are satisfied with the existing brands available.14.29% are highly satisfied with the existing brands and 4.76% asked for some improvement .
9. 47.62% of the doctors think that the pricing of the currently available FIBRINOGEN brands is expensive and 42.86% of them think that it is affordable and 9.42 % of them think that it is not affordable.
10. 100% of the doctors think that awareness programs about blood and plasma products are needed AMD 0 % think that no awareness program is needed.
11. 71.43 % of the doctors rely on companies brand images and safety record, 19.05% of the doctors rely on product itself and 9.52% relies on long term relationship.
12. While prescribing the medicine 19.05% have no issues, 28.57% are concerned about the safety issues, 14.29% are concerned about the cost issue and 14.29% are concerned about the storage issues while prescribing these issues to the patients.

N . PROTHROMBIN COMPLEX CONCENTRATE :

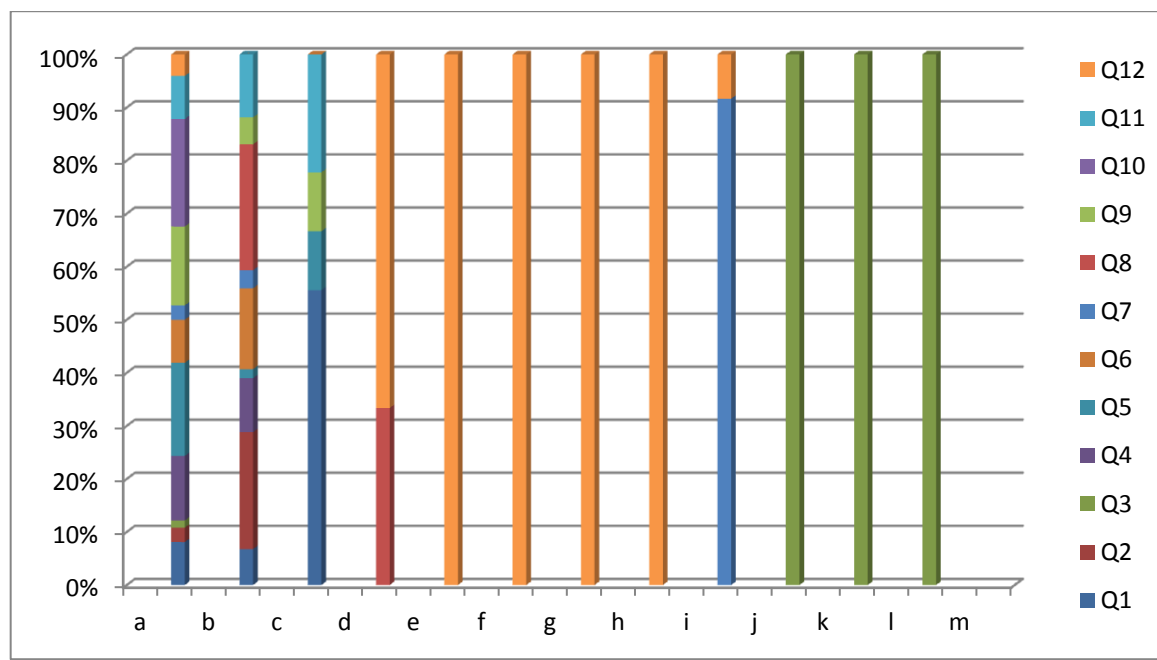
Table Representing The Sample Size and Total number of Responses for FACTOR VIII :-

QUESTION NO	1	2	3	4	5	6	7	8	9	10	11	12	13
SAMLE SIZE	15	15	15	15	15	15	15	15	15	15	15	15	15
NO. OF RESPONDENT	15	15	15	15	15	15	15	15	15	15	15	15	15

PROTHROMBIN COMPLEX CONCENTRATE (Responses below the digits are the values for each options in the form of percentage of the total number of responses collected per question) Number of responses collected per question in terms options like a,b,c etc.												
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
a	6 40.00	2 13.33	1 6.67	9 60.00	13 86.67	6 40.00	2 13.33	0 0.00	11 73.33	15 100.00	6 40.00	3 20.00
b	4 26.67	13 86.67	0 0.00	6 40.00	1 6.67	9 60.00	2 13.33	14 93.33	3 20.00	0 0.00	7 46.67	0 0.00
c	5 33.33	0 0.00	0 0.00	0 0.00	1 6.67	0 0.00	0 0.00	0 0.00	1 6.67	0 0.00	2 13.33	0 0.00
d			0.00 0.00	0.00			0.00 0.00	1.00 6.67			0.00	2.00 13.33
e			0.00 0.00				0.00 0.00					1.00 6.67
f			0.00 0.00				0.00 0.00					1.00 6.67
g			0.00 0.00				0.00 0.00					1.00 6.67
h			0.00 0.00				0.00 0.00					6.00 40.00
i			0.00 0.00				11.00 73.33					1.00 6.67
j			0.00 0.00				0.00 0.00					
k			1.00 6.67									
l			12.00									

			80.00									
			1.00									
m			6.67									

Pictorial Representation of the above tabulated values of PROTHROMBIN COMPLEX CONCENTRATE:



Response Profile for PROTHROMBIN COMPLEX CONCENTRATE :

1. There are 40 % of the doctors ,who are using PROTHROMBIN COMPLEX CONCENTRATE ,have less than 3 years of experiences.26.37% of the doctors ,who are using the same, have 3 to 7 years of experiences and 33.33 % of the doctors, who are using these products,have more than 7 years of experiences.
2. Availability of the Product has been good(on the basis of 86.67% of the doctors' opinion) but all doctors are not extremely satisfied because only 13.33% of the doctors said availability is excellent and 0% of the doctors said that availability is poor.
3. 80% of the doctors do not prefer any particular brand and from those who prefer any brand 6.67% of the doctors prefer Reliance, 6.67% of the doctors prefer Johnsons and other 6.67% of the doctors prefer some other brands.
4. Doctors prefer a particular brand mainly for availability 40 % and 60% of the doctors are concerned with the quality of the product,i.e,they opt for better product option.

5. 86.67% doctors are prescribing PROTHROMBIN COMPLEX CONCENTRATE less than 10 vials per month per patient, 6.67 % of the doctors are using 10 to 20 vials per month per patient and 6.67 % of them are prescribing more than 20 vials per month per patient.
6. Because it is a biological “made out of human plasma”; doctors consider source of plasma as an important criterion in selection of the product and think it should be given utmost priority as 40% of them opted for the option “very critical” and 60% of them opted for the option “critical”.0% of the doctors consider it to be not critical.
7. While using these product 14.81% of the doctors did not found any safety issue , 47.82% of the doctors found allergic reactions and 17.39% of the doctors feel that the products should be purified and should be free from HIV.HBSAG viruses.8.70% of the doctors found renal failure as a sider effects of using these products. In rare cases they consider company will(4.35%) , Immunosuppression(4.35%), Expense(4.35%),Quality product(4.35%),should not contain extra proteins(4.35%),method of purification(4.35%) ,previous history of any long reaction(4.35%) etc.
8. 93.33% of the doctors are satisfied with the existing brands but important is that nobody of the doctors are highly satisfied and 6.67% of the doctors think that the product’s brands need to be improved.
9. 73.33 of the doctors think that the pricing of the currently available PROTHROMBIN COMPLEX CONCENTRATE brands is expensive and 20 % of them think that it is affordable and 6.67 % of them think that it is not affordable.
10. 100% of the doctors think the need of a awareness programs about blood and plasma products.
11. 40 % of the doctors rely on the product itself and 46.67% of the doctors rely on companies brand images and safety record, 13.33% of the doctors rely on long term relationship and 0% of the doctors rely on other factors.
12. While prescribing the medicine 70.37% of the doctors are concerned about the cost and 22.22% are concerned about the infections issue and 7.41% of them are concerned with the contamination of the product and 7.41% of the doctors say that it should not be used unless it is needed or it should be properly indicated. Only 3.70% of the doctors are concerned with the issues as Indications, Efficacy, Availability and Method of administration.

BLOOD BANKS

OBJECTIVE OF THE STUDY

- ✓ To determine the number of blood banks involved in blood componentization.
- ✓ To know the amount of surplus plasma availability with the blood banks which can be used for componentization.

PROBLEM STATEMENT

The demand for blood varies from one blood group to other. This variation is due to the different range of distribution of the blood groups.

Moreover arrangement of donors is a major problem to blood banks thus to reduce it optimum level of the stock has to be maintained and also timely availability of safe blood or its products at affordable price.

Some of the other concerns would include:

- ✓ Transfusion-transmitted infections.
- ✓ Donor selection and recruitment.
- ✓ Ever rising cost of plasma.
- ✓ Government control of pricing, since the government does not want the prices of plasma products to jet off beyond the reach of the common man.
- ✓ Poor worldwide harmonization of regulatory issues.
- ✓ Import limitations.

With an in depth market survey on the plasma market I seek to determine the demand, quality & availability of currently available blood and its components in western region of India.

METHODOLOGY

Blood banks are the major sources for collection of blood and its components like packed RBC's, platelets, plasma, cryoprecipitate, and fresh frozen plasma. Through my survey in western region I found various blood banks that were involved in both practices of whole blood preparation as well as blood componentization.

➤ **TARGET POPULATION:**

During my market survey of the blood products and its components in those cities the target population had been primarily the doctors of blood banks of all over the western region of India as directed by our mentor.

➤ **DATA COLLECTION:**

Respondents had been through Questionnaire made by PlasmaGen Biosciences Pvt Ltd. and I have taken some doctor's interview by telephone also. There were 22 blood banks visited throughout my study.

➤ **TYPE OF RESEARCH DESIGN :**

The study conducted was primary research and both Judgment and simple random sampling have been used in our study.

➤ **STUDY TIME :**

The survey was conducted for a period of starting from 16th April to 27th May 2011.

➤ **STATISTICAL DESIGN :**

Compound Bar Graph, line graphs, pie charts, area graph has been used to represent responses for each questions and to represent responses for individual questions different graphs has been plotted and pictorial representation for each responses has been shown individually.

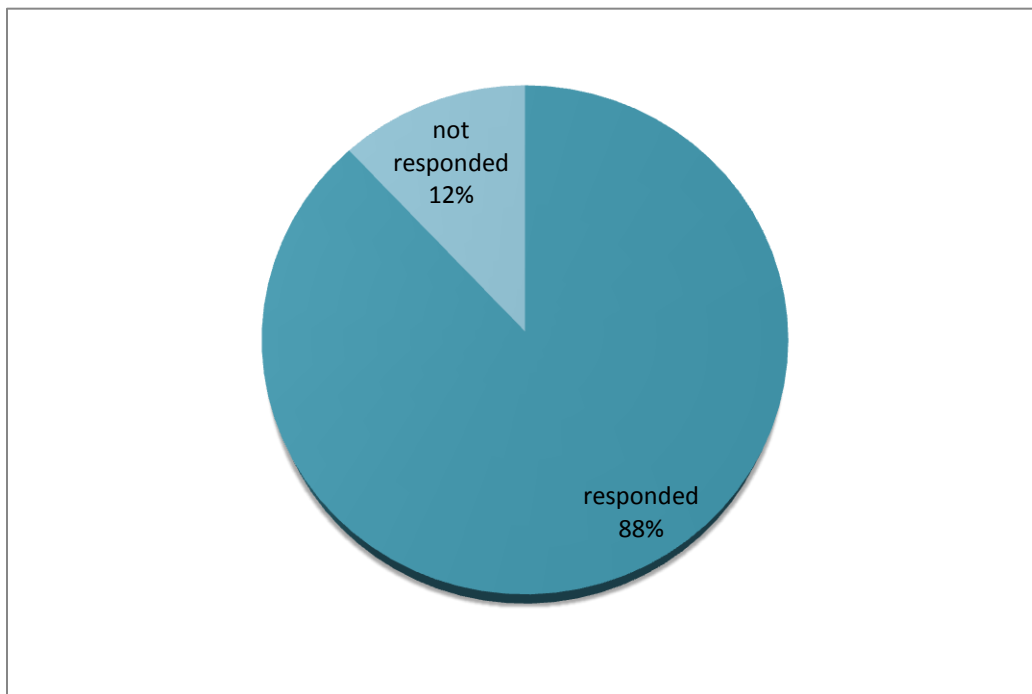
➤ **ANALYSIS TOOL:**

Microsoft excel

ANALYSIS, FINDINGS AND INTERPRETATIONS

INFERENCE 1. First question represents total no. Of blood banks visited (25 in no.) Out of which 22 responded while 3 did not responded. 12% denotes non-respondents category whereas 88% denotes responded blood banks.

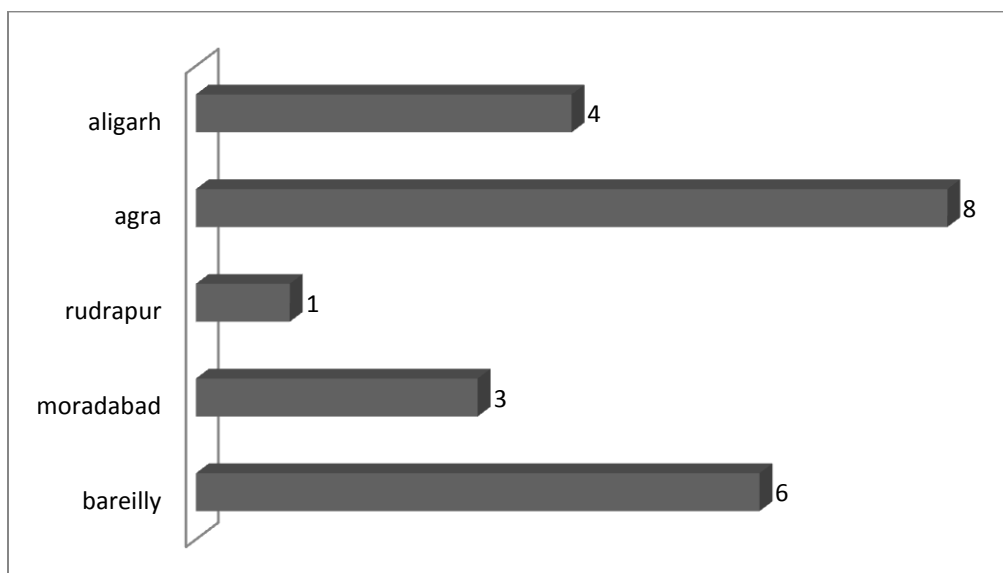
PERCENTAGE OF BLOOD BANK RESPONDED



<u>RESPONDENTS</u>	<u>NO.</u>	<u>%</u>
BLOOD BANKS RESPONDED	22	88%
BLOOD BANKS DID NOT RESPONDED	3	12.50%

INFERENCE2 . Represents categorization of cities visited for blood banks that were Bareilly, Moradabad, Rudrapur , Agra , Aligarh . Out of all cities visited Agra had the highest no. Of blood banks (8 in no.) and contributes to 36.36% followed by Bareilly (6 in no.) Further Aligarh, than Moradabad and lowest in Rudrapur contributing to 1 blood bank.

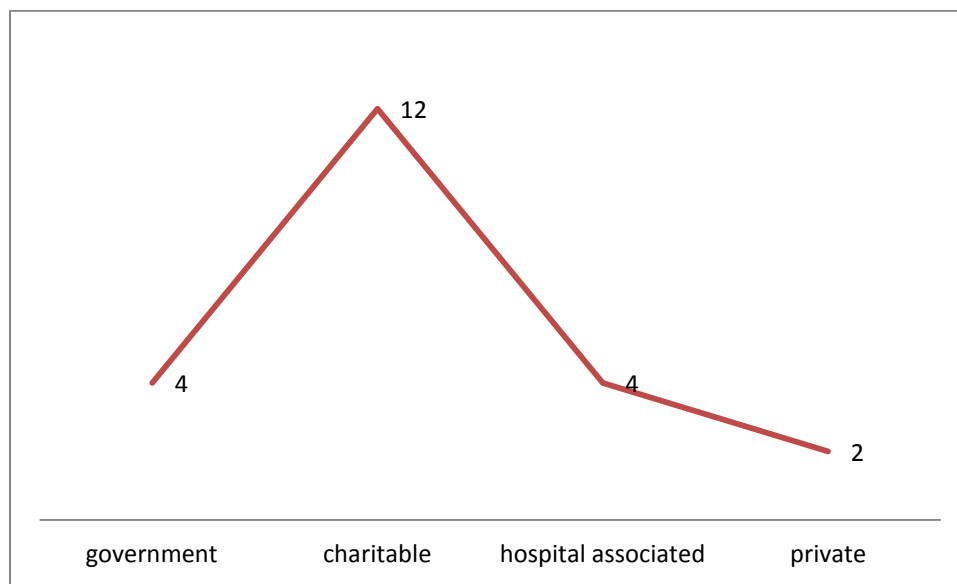
CITIES VISITED FOR BLOOD BANKS



<u>CITIES</u>	<u>%</u>	<u>NO. OF BLOOD BANKS VISITED</u>
RUDRAPUR	4.55	1
MORADABAD	13.64	3
ALIGARH	18.18	4
BAREILLY	27.27	6
AGRA	36.36	8

INFERENCE 3. Graph representing nature of blood center and it was found that there were charitable blood banks most in no. (12) And private blood banks were least in no. that is 2

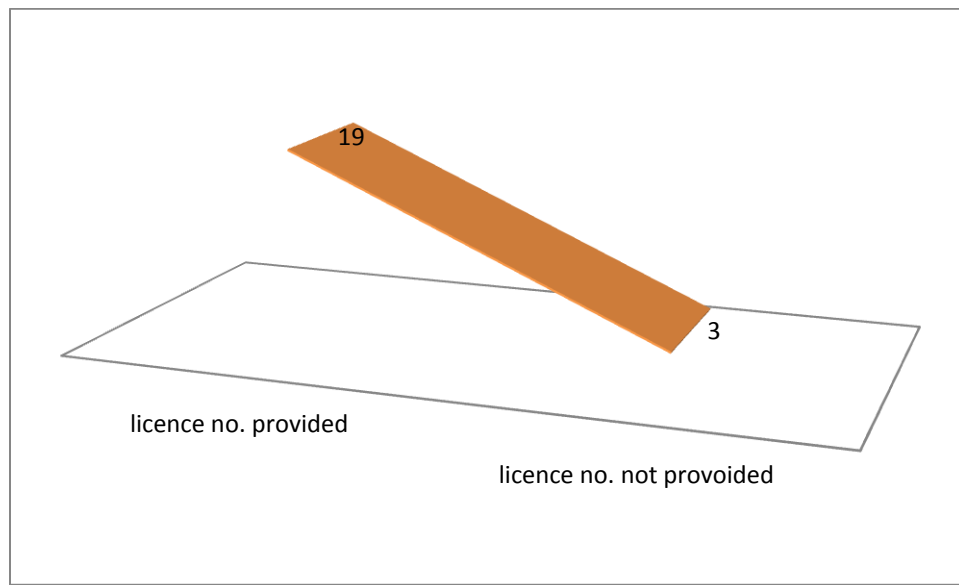
NATURE OF BLOOD BANKS :



<u>NATURE OF BLOOD BANK</u>	<u>%</u>	<u>NO.</u>
GOVERNMENT	18.0	4
CHARITABLE	54.50	12
HOSPITAL ASSOCIATED	18.0	4
PRIVATE/STAND ALONE	10.0	2

INFERENCE 4 . When asked for validity of license for their blood banks 19 had license no. but 3 did not have license no.

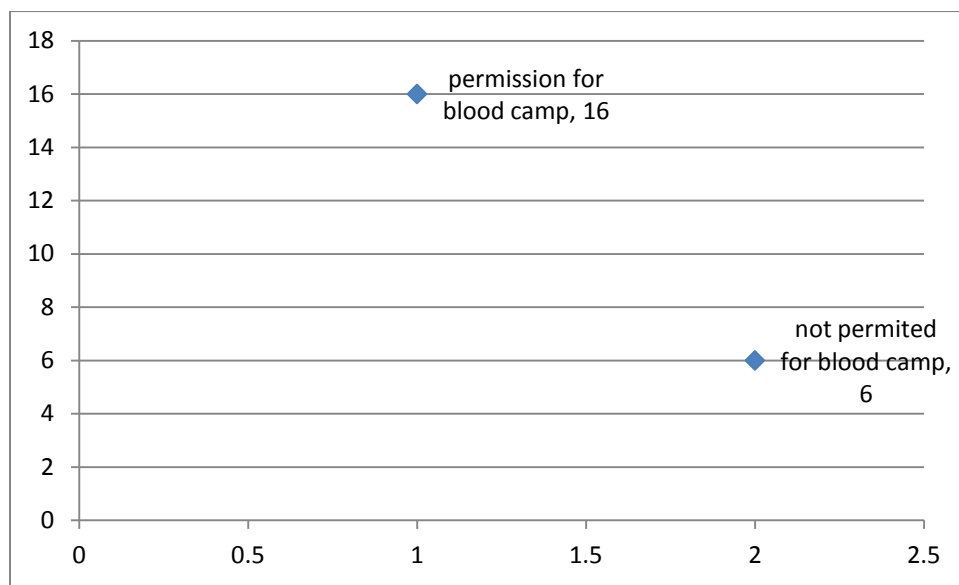
BLOOD BANKS WITH LICENSE PROVIDED:



<u>LICENSE NO.</u>	<u>%</u>	<u>NO.</u>
PROVIDED	86%	19
NOT PROVIDED	14%	3

INFERENCE 5 . When asked whether they have permission to conduct blood camps, 16 (72.73%) said yes they do have permission to conduct blood camps while 6 (27.27%) said that they do have permission to conduct camps.

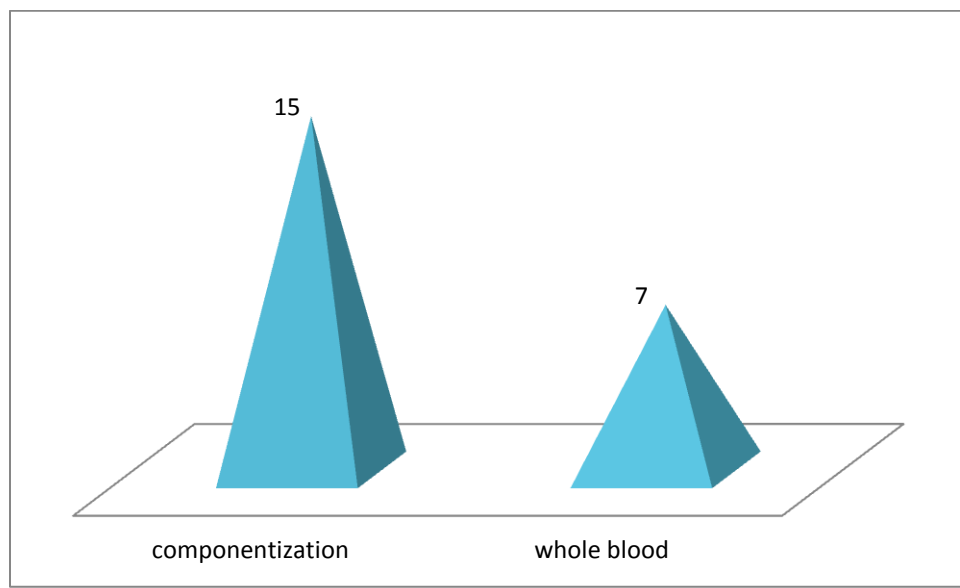
BLOOD BANKS CONDUCTING CAMPS



<u>PERMISSION</u>	<u>%</u>	<u>NO.</u>
YES	72.73	16
NO	27.27	6

INFERENCE 6 . Showing whether blood center prepares all components or they only have license to prepare whole blood and it was found that 15 blood banks (68%) have license to prepare components like packed RBC's , platelets , plasma , cryoprecipitate while only 7 (32%) have license to prepare only whole blood .

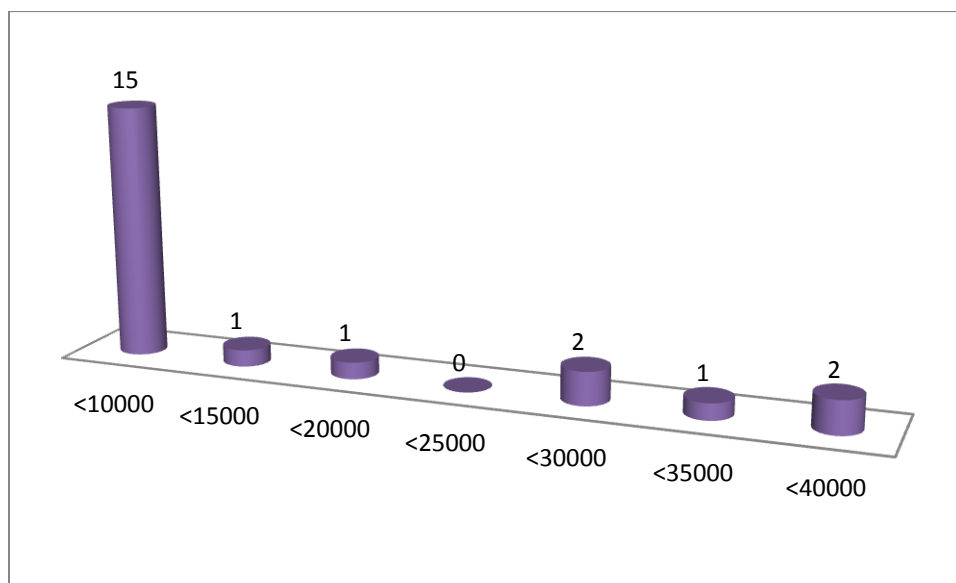
LICENSE TO BLOOD BANKS FOR MAKING ONLY WHOLE BLOOD OR COMPONENTIZATION :



<u>PRODUCT LICENSE</u>	<u>%</u>	<u>NO.</u>
WHOLE BLOOD	32	7
COMPONENTIZATION	68	15

INFERENCE 7 . Graphs representing total blood collection (units) in the year 2011-12 with highest no. Of units within the range of <10000 (68.18 %) that is 15 out of 22 blood banks visited, had total blood collection less than 10000 .

TOTAL NO. OF BLOOD COLLECTION IN THE YR. 2011-12 :

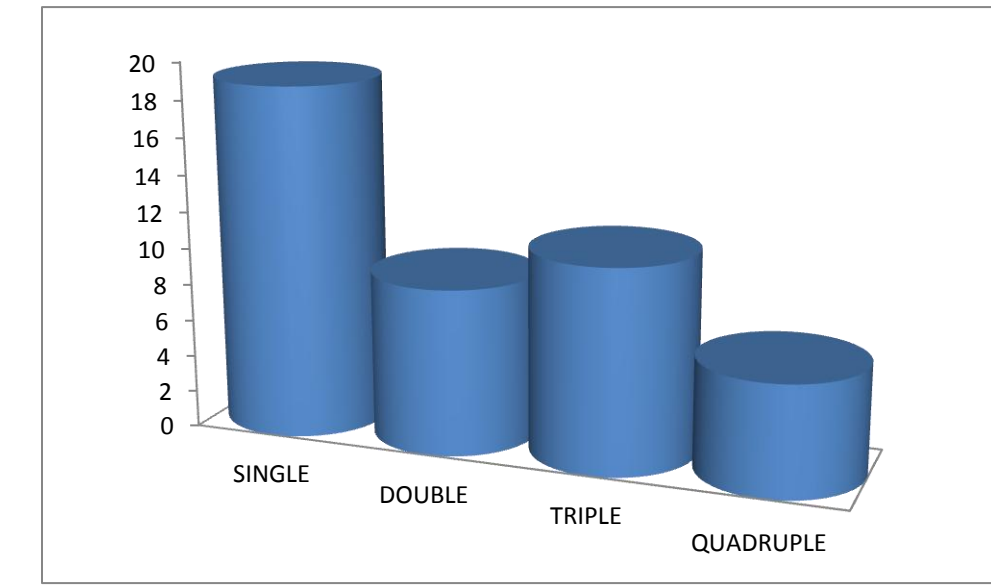


<u>TOTAL BLOOD COLLECTION FOR YR 2011-12</u>	<u>%</u>	<u>NO.</u>
<10000	68.18	15
<15000	4.55	1
<20000	4.55	1
<25000	0.00	0
<30000	9.09	2
<35000	4.55	1
<40000	9.09	2

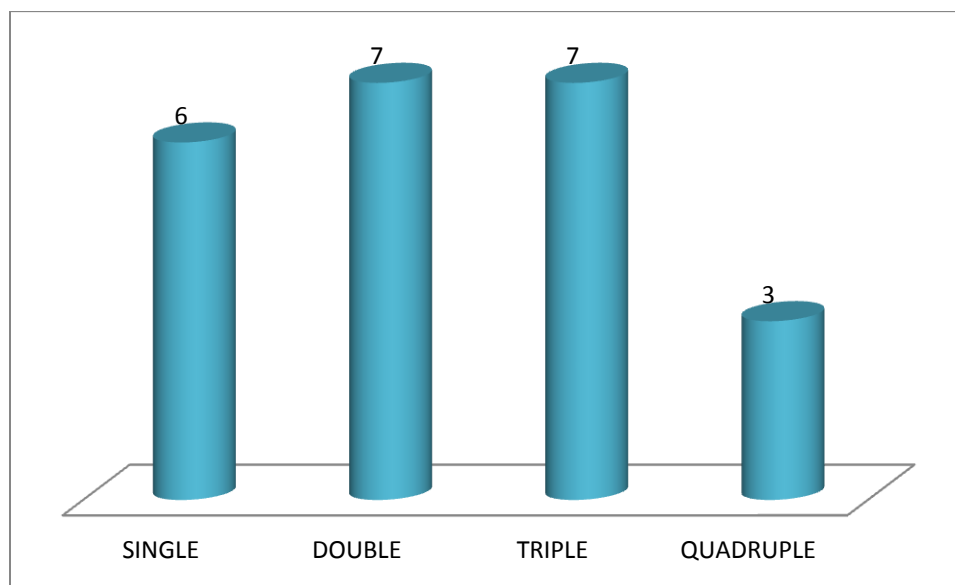
INFERENCE 8. Graphs shows that there are 2 types of blood bags used for storage of blood out of which it was found that it is 350ml blood bag more in use with no. Of 46 and 450ml is only 23 in no. and that of 350ml it is single blood bag most used (19) that is 86.36 %.

BLOOD BAGS USED

1). FOR 350ML :



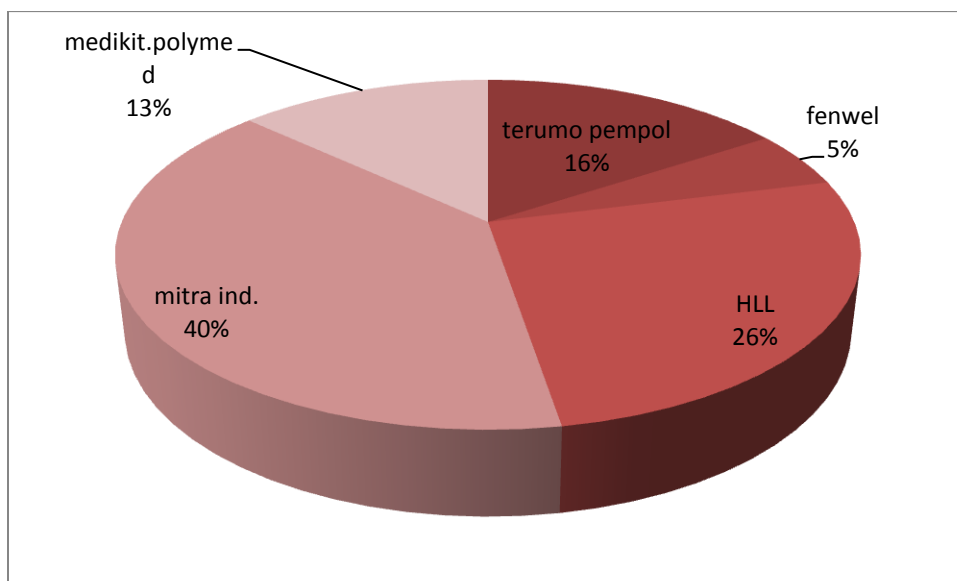
2). FOR 450ML :



<u>TYPE OF BLOOD BAG</u>	<u>SINGLE</u>	<u>DOUBLE</u>	<u>TRIPLE</u>	<u>QUADRUPLE</u>
350ML	19 (86.36 %)	9 (40.91 %)	11 (50 %)	6 (27.27%)
450ML	6 (27.27 %)	7 (31.82%)	7 (31.82 %)	3 (13.64 %)

INFERENCE 9 . Graph representing the % of company which were preferred for blood bags to collect blood samples and the most preferred was found to be Mitra (40%) and least preferred was Fenwal (5%) .

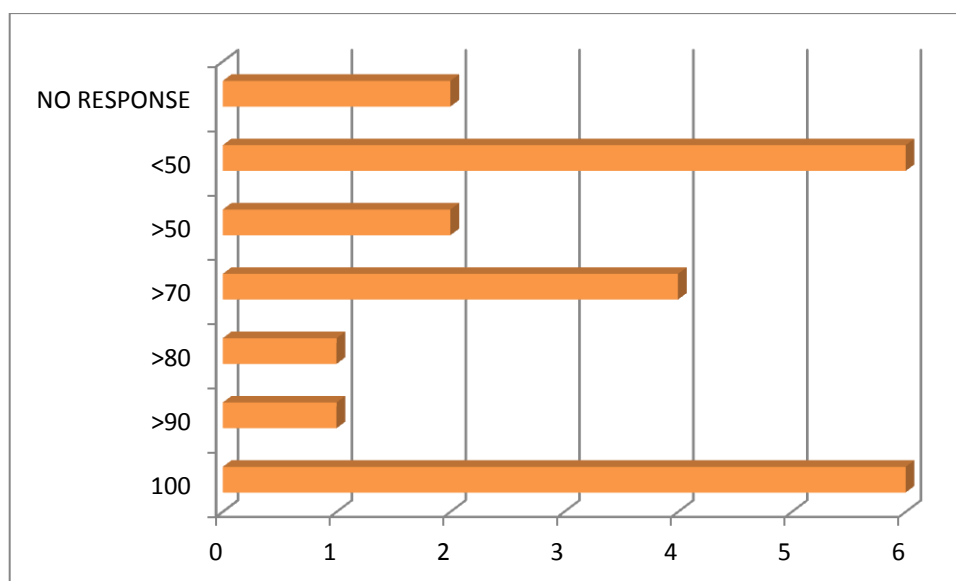
COMPANIES USED FOR BLOOD BAGS :



<u>COMPANY NAME</u>	<u>%</u>	<u>NO.</u>
TERUMO PEMPOL	16	6
FENWAL	5	2
HLL	26	10
MITRA	40	15
SPECIFIC (MEDIKIT , POLYMED)	13	5

INFERENCE 10 . Following graph represents % of voluntary blood collection. 7 (31.82%) blood banks responded that they have 100% voluntary blood collection and 7 responded that they have voluntary blood collection less than 50 (31.82%).

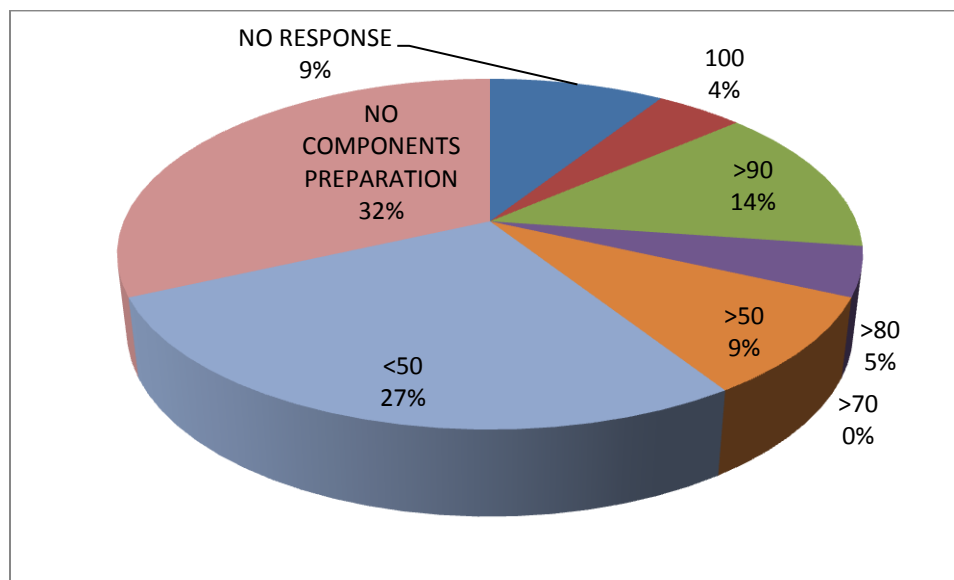
RESPONSES FOR VOLUNTARY BLOOD COLLECTION :



<u>VOLUNTARY BLOOD COLLECTION</u>	<u>%</u>	<u>No.</u>
100	31.82	7
>90	4.55	1
>80	4.55	1
>70	13.64	3
>50	13.64	3
SPECIFIC	31.82	7

INFERENCE 11 . Graph shows percentage of blood componentization. Out of all blood banks visited 9% did not responded while 32% were not involved in componentization process and were involved in whole blood selection only and there was only 1 blood bank which was 100% involved in blood componentization .

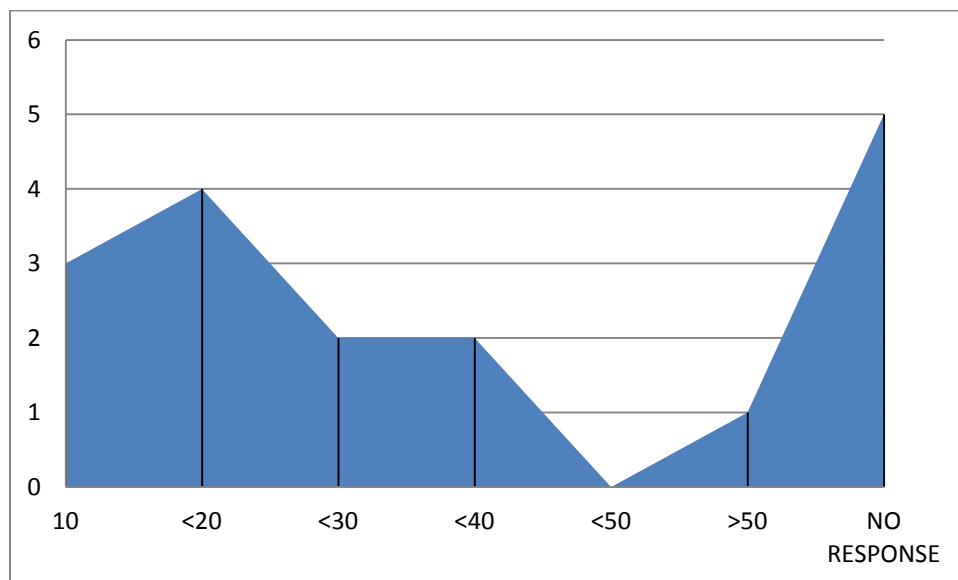
% OF BLOOD COMPONENTIZATION:



<u>BLOOD COMPONENTIZATION</u>	<u>%</u>	<u>NO.</u>
100	4	1
>90	14	3
>80	5	1
>70	0	0
>50	9	2
<50	27	6
NO COMPONENTS PREPARATION	32	7
NO RESPONSE	9	2

INFERENCE 12 . Issuance of plasma components to patients was maximum in the range of <20 that is 18.88% (4 blood banks would give plasma to patients) while 22.73% (5) did not responded to this question (as some were only involved in making whole blood and others were not interested to give plasma).

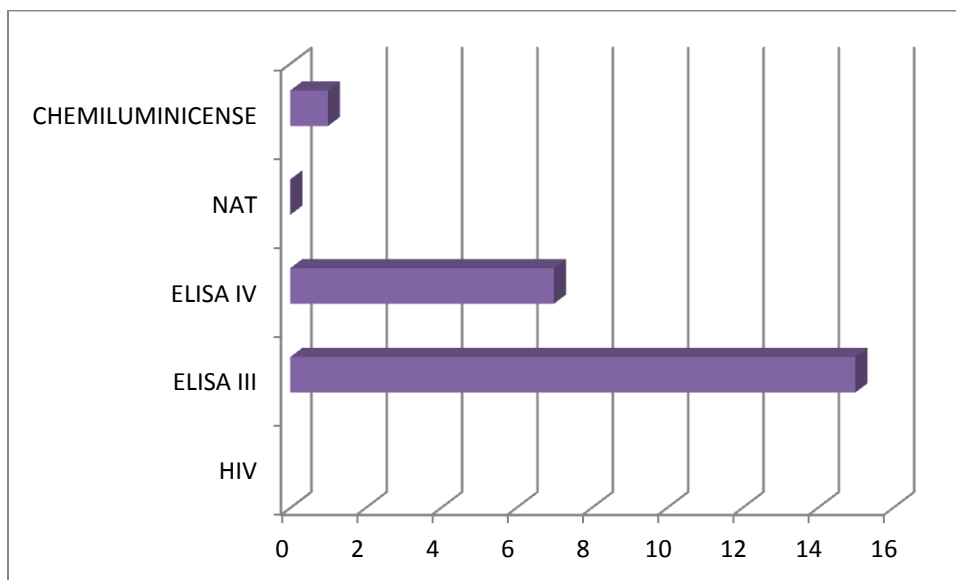
ISSUANCE OF PLASMA COMPONENTS :



<u>ISSUANCE OF PLASMA</u>	<u>%</u>	<u>NO.</u>
10	13.64	3
<20	18.18	4
<30	9.09	2
<40	9.09	2
<50	0.00	0
>50	4.55	1
NO RESPONSE	22.73	5

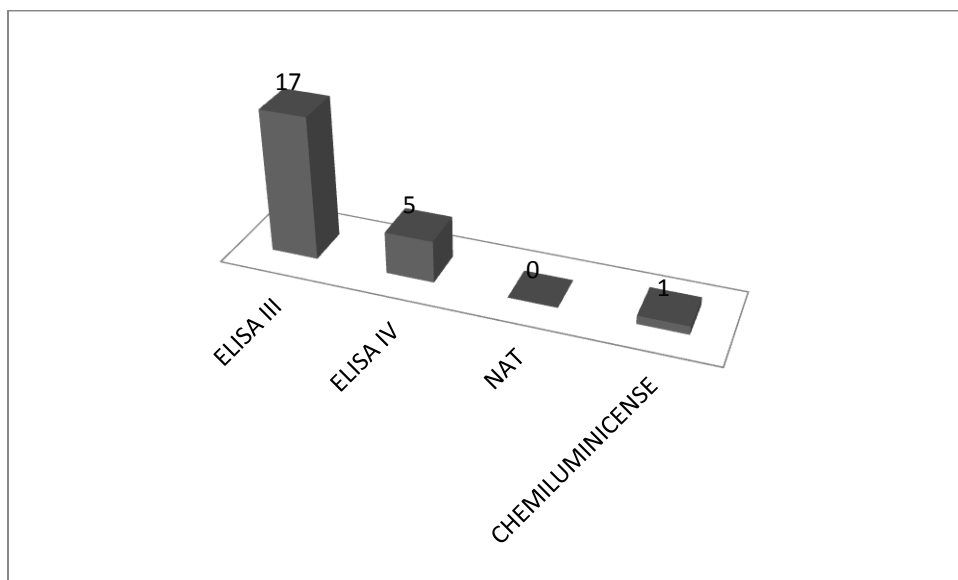
INFERENCE13 . Screening of blood / plasma. For HIV it was ELISAIII most used and no one was found to use NAT technique while 1 blood bank was found to use CHEMILUMINICENSE technique. For HBV, it was again the ELISA III technique to be most preferred and same the case found with HCV infection.

BLOOD SCREENING TECHNIQUE USED FOR HIV INFECTION :



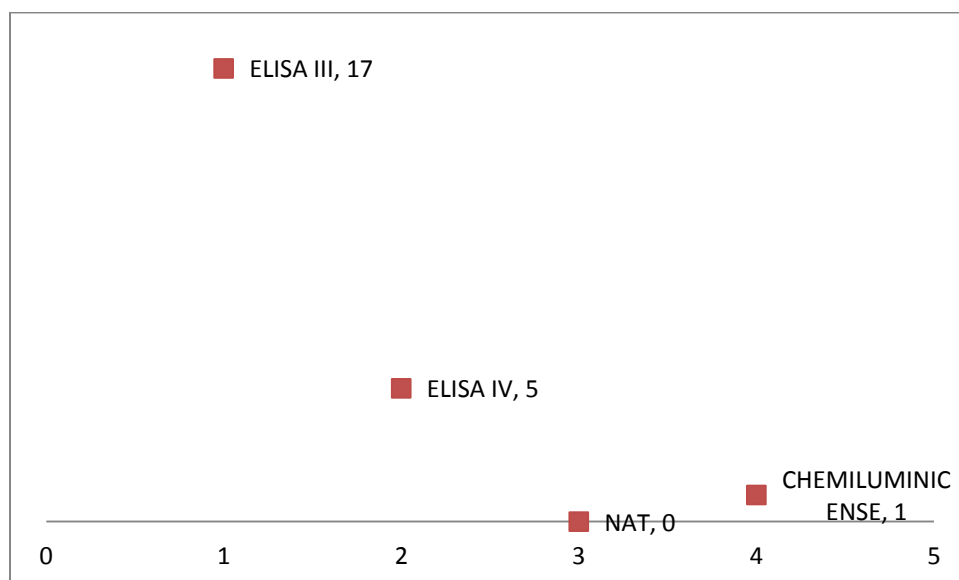
<u>SCREENING TECHNIQUE</u> <u>(HIV)</u>	<u>%</u>	<u>NO.</u>
ELISA III	68.18	15
ELISA IV	31.82	7
NAT	0	0
CHEMILUMINICENSE	4.55	1

SCREENING TECHNIQUE USED FOR HBV INFECTION :



<u>SCREENING TECHNIQUE (HBV)</u>	<u>%</u>	<u>NO.</u>
ELISA III	77.27	17
ELISA IV	22.73	5
NAT	0	0
CHEMILUMINICENSE	4.55	1

SCREENING TECHNIQUE USED FOR HCV INFECTION :

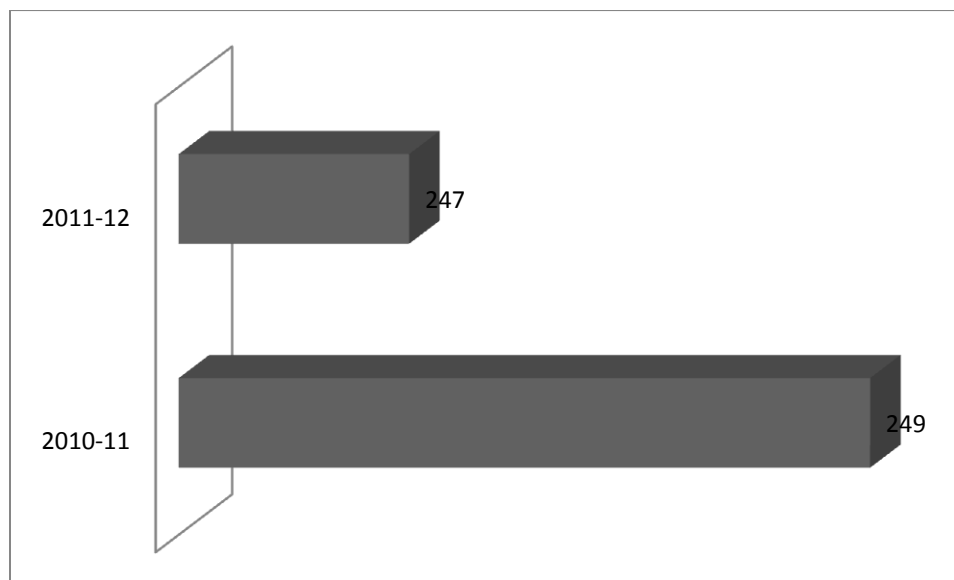


<u>SCREENING TECHNIQUE (HCV)</u>	<u>%</u>	<u>NO.</u>
ELISA III	77.27	17
ELISA IV	22.73	5
NAT	0	0
CHEMILUMINICENSE	4.55	1

INFERENCE 14 . Graph representing cases recorded for transfusion-transmissible infections. The highest was found to be with HBV infection with no. 869 in 2010-11 and 845 in 2011-12 and the least no. was reported for Malaria.

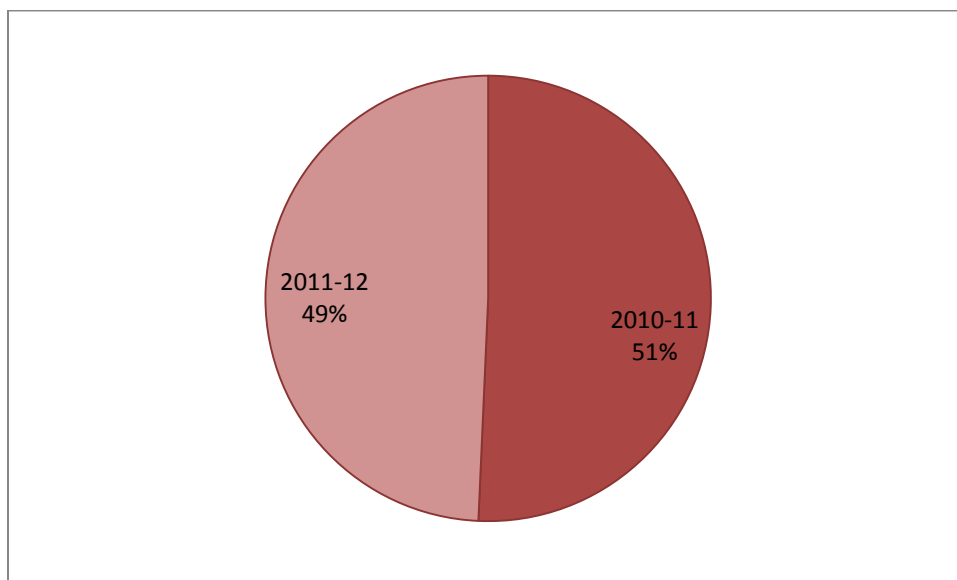
TRANSFUSION-TRANSMISSIBLE INFECTIONS :

1). FOR HIV :



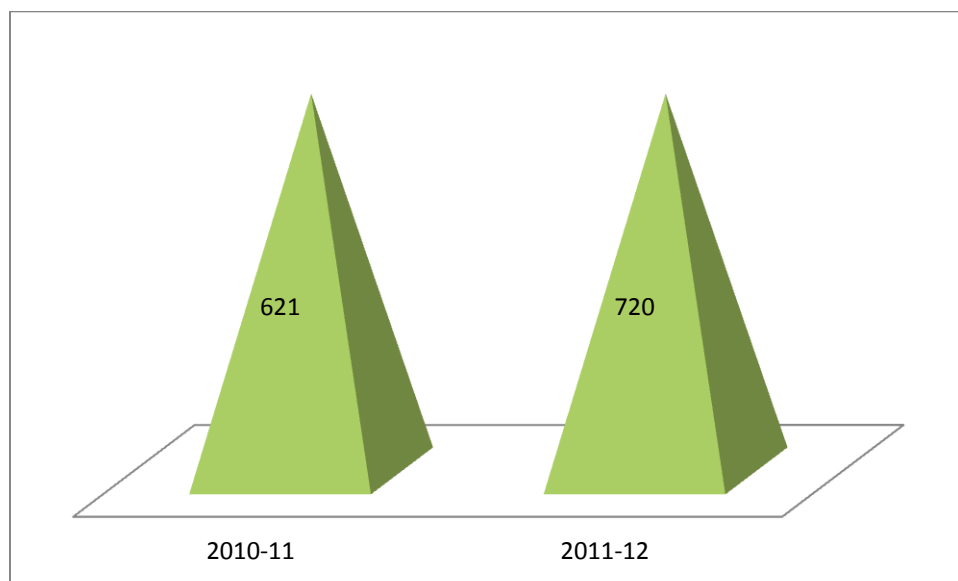
<u>TTI'S (YEAR)</u>	<u>NO.</u>
2010-11	249
2011-12	247

2). FOR HBV :



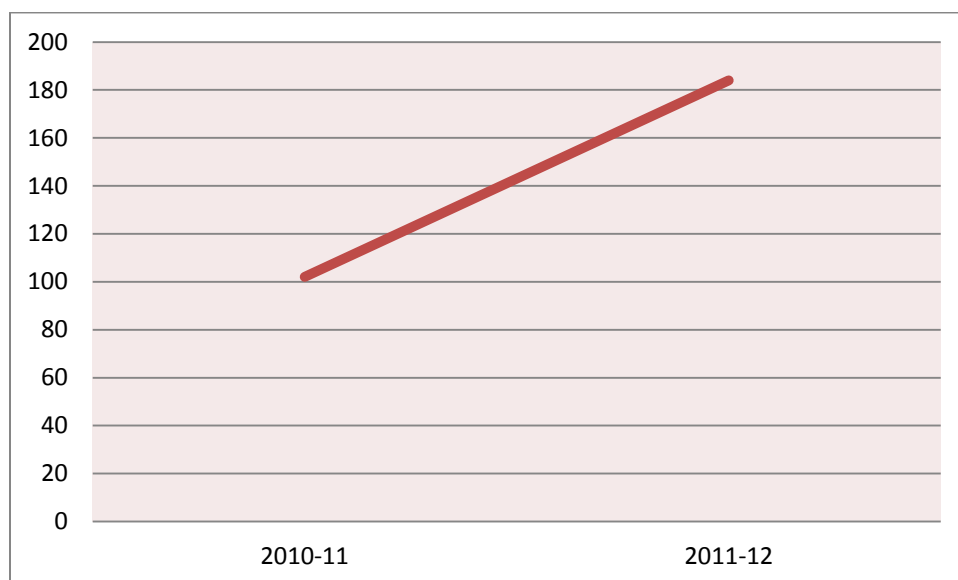
<u>TTI'S (YEAR)</u>	<u>NO.</u>
2010-11	869
2011-12	845

3). FOR HCV :



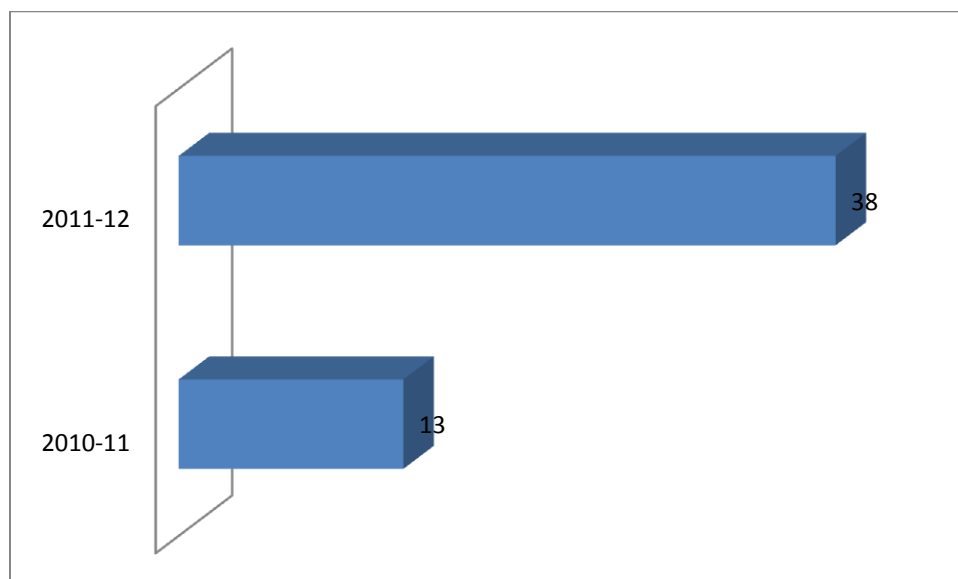
<u>TTI'S</u>	<u>NO.</u>
2010-11	621
2011-12	720

4). FOR SYPHILIS :



<u>TTI'S</u>	<u>NO.</u>
2010-11	102
2011-12	184

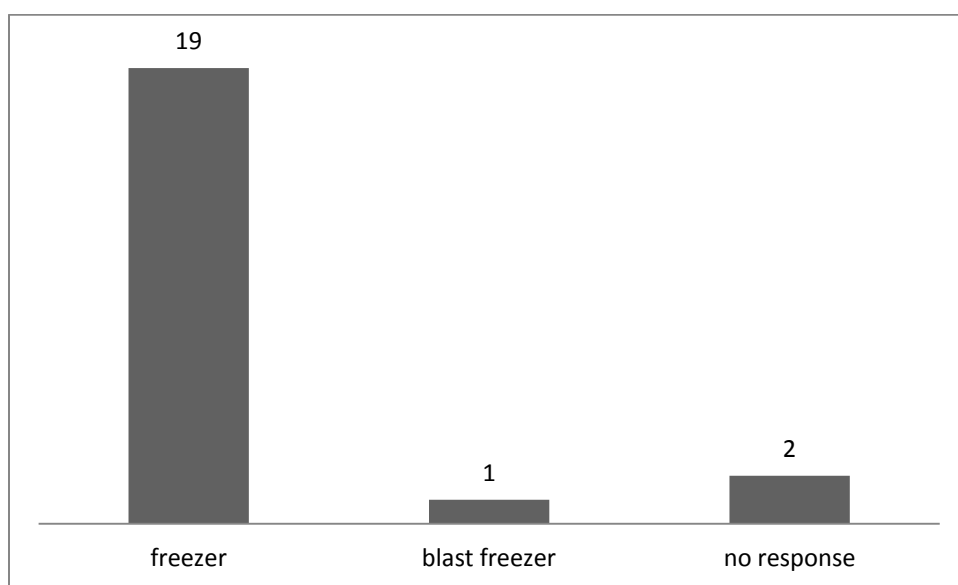
5). FOR MALARIA:



<u>TTI'S</u>	<u>NO.</u>
2010-11	13
2011-12	38

INFERENCE 15: graph representing the no. Of preparation and storage of plasma and it was found that it is freezer used most by all most all blood banks than it was blast freezer , 2 in no. while cold room wasn't used by any of the blood banks while there were 2 blood banks who did not responded to this question.

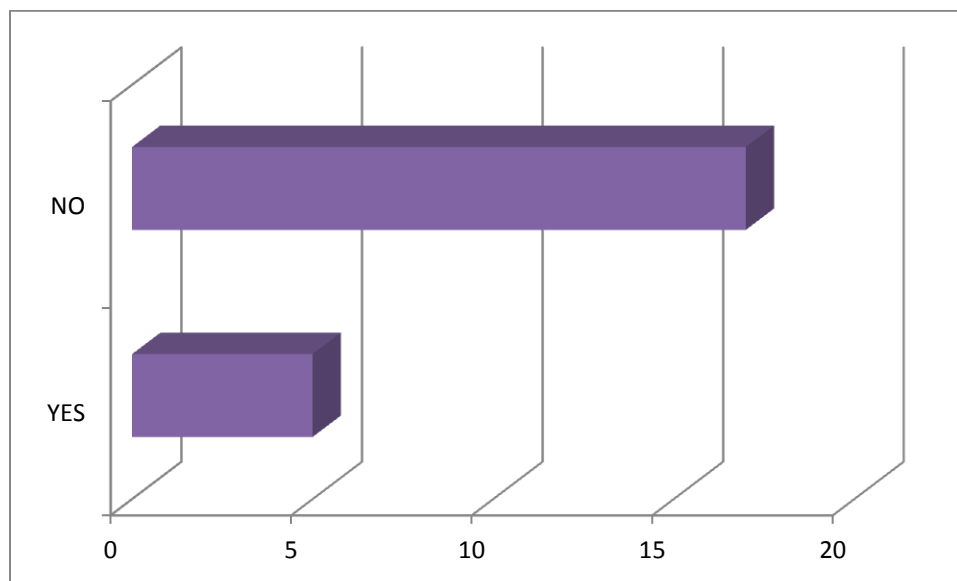
NO. OF FREEZERS AND BLAST FREEZER USED IN PREPARING AND STORING PLASMA :



<u>STORAGE OF PLASMA</u>	<u>%</u>	<u>NO.</u>
FREEZER	81.82	18
BLAST FREEZER	9.09	2
COLD ROOM	0	0
NO RESPONSE	9.09	2

INFERENCE 16 : graph predicting cryoprecipitate preparation and it was found that 17 blood banks were not involved in making of cryoprecipitate while 5 responded yes to this question.

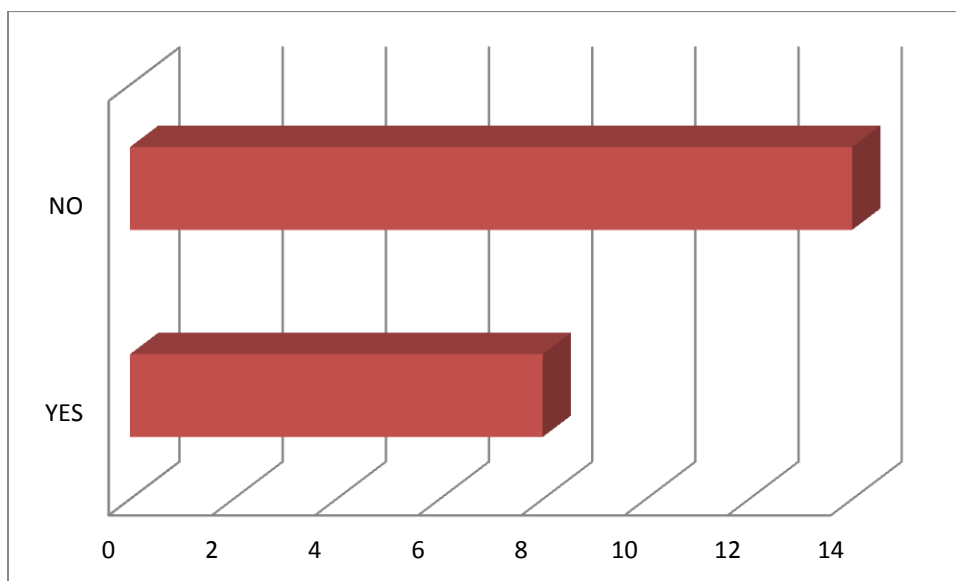
CRYOPREPARATION :



<u>CRYOPREPARATION</u>	<u>%</u>	<u>NO.</u>
YES	5	22.73
NO	17	77.27

INFERENCE 17 : representing the graph for Hemophiliacs patients approaching blood center and it was found that there were 8 blood banks where patients were approaching for blood banks while to rest of the blood center no approach was seen for Anti-Hemophilic factor .

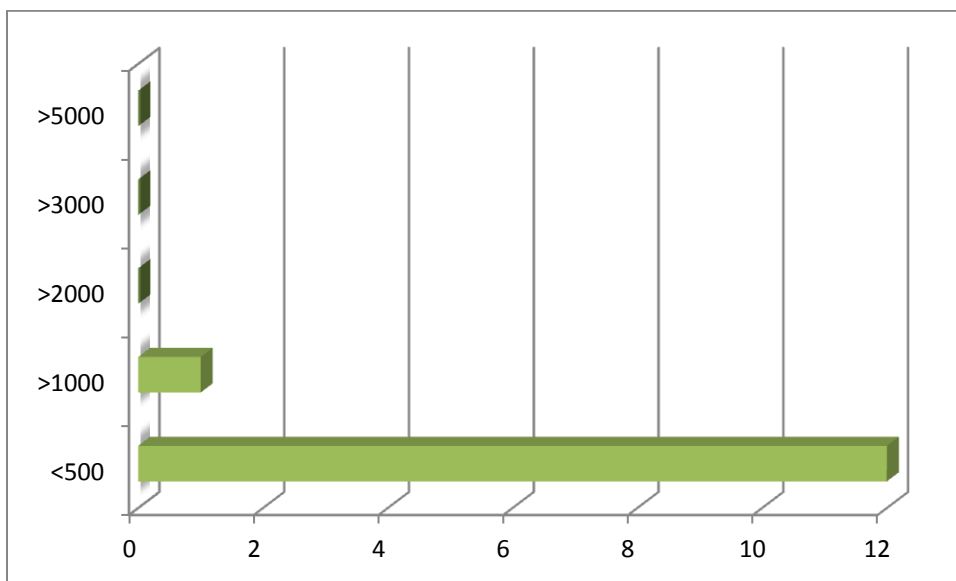
RESPONSES FOR HAEMOPHILIC PATIENTS :



<u>APPROACH OF HAEMOPHILIC PATIENTS</u>	<u>%</u>	<u>NO.</u>
YES	36.36	8
NO	63.64	14

INFERENCE 18 : for maximum storage of plasma at your blood center and it was seen that maximum storage of plasma is <500 which contributes to 98% and 2% contributes to rest of the units .

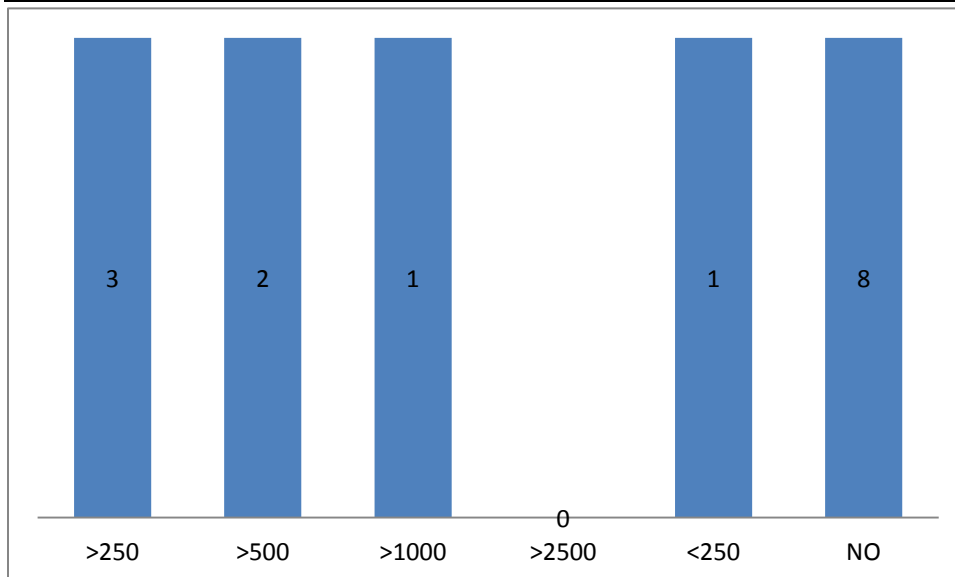
STORAGE OF PLASMA:



<u>MAXIMUM STORAGE</u>	<u>%</u>	<u>NO.</u>
<u>>5000</u>	<u>0</u>	<u>0</u>
<u>>3000</u>	<u>0</u>	<u>0</u>
<u>>2000</u>	<u>0</u>	<u>0</u>
<u>>1000</u>	<u>2</u>	<u>1</u>
<u><500</u>	<u>98</u>	<u>12</u>

INFERENCE 19. Depicts monthly average availability of surplus plasma units with various responses that were observed monthly with zero response in the range of >2500 and there were 8 blood banks with no response that there have been no surplus plasma available with them.

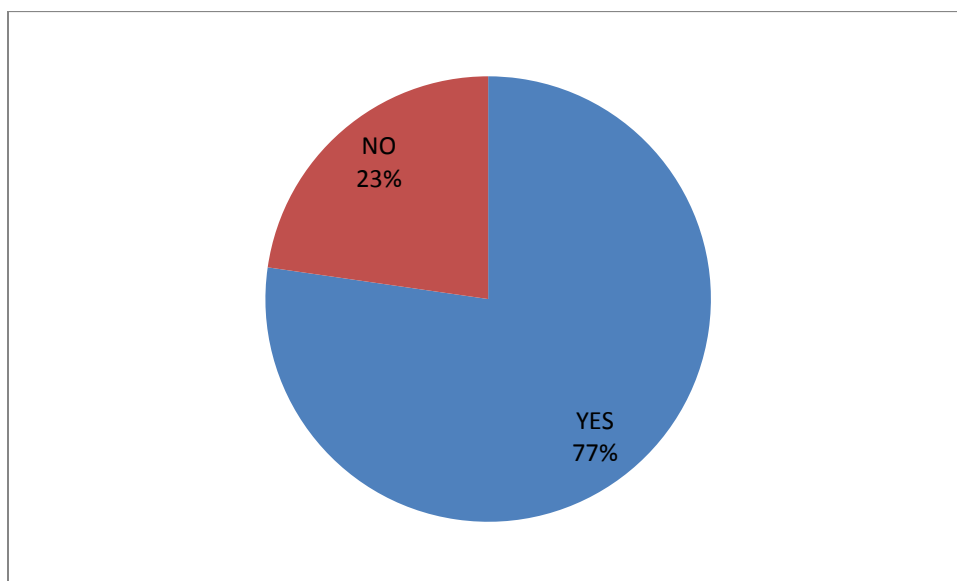
MONTHLY AVERAGE AVAILABILITY OF SURPLUS PLASMA UNIT:



<u>MONTHLY AVERAGE AVAILABILITY</u>	<u>%</u>	<u>NO.</u>
>250	20	3
>500	13.90	2
>2000	6.70	1
>3000	0	0
>5000	6.70	1
NO SURPLUS PLASMA	53.50	8

INFERENCE 20. Consortium between blood banks and plasma fractionation company would help all concerns were agreed by 17 (77.27%) blood banks while this would not help any purpose were thought by 5 (22.73%) blood banks.

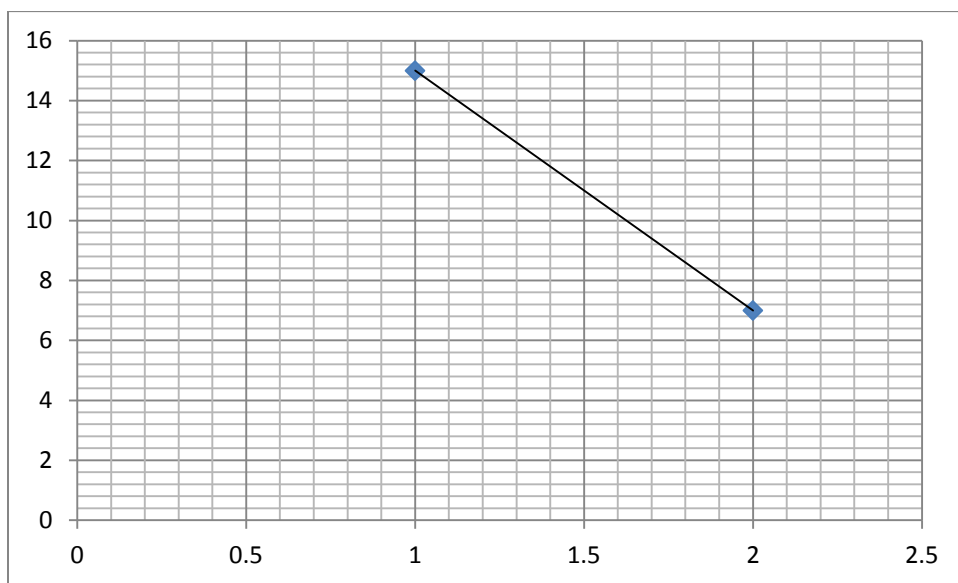
RESPONSES TO CONSORTIUM:



<u>CONSORTIUM FORMATION</u>	<u>%</u>	<u>NO.</u>
YES	77.27	17
NO	22.73	5

INFERENCE 21. Surplus plasma available can be utilized for fractionation was agreed by 15 blood banks that contributes to 68.18% out of 22 total blood banks visited while rest did not agreed to provide surplus plasma available with blood banks for fractionation that contributes to 31.81% .

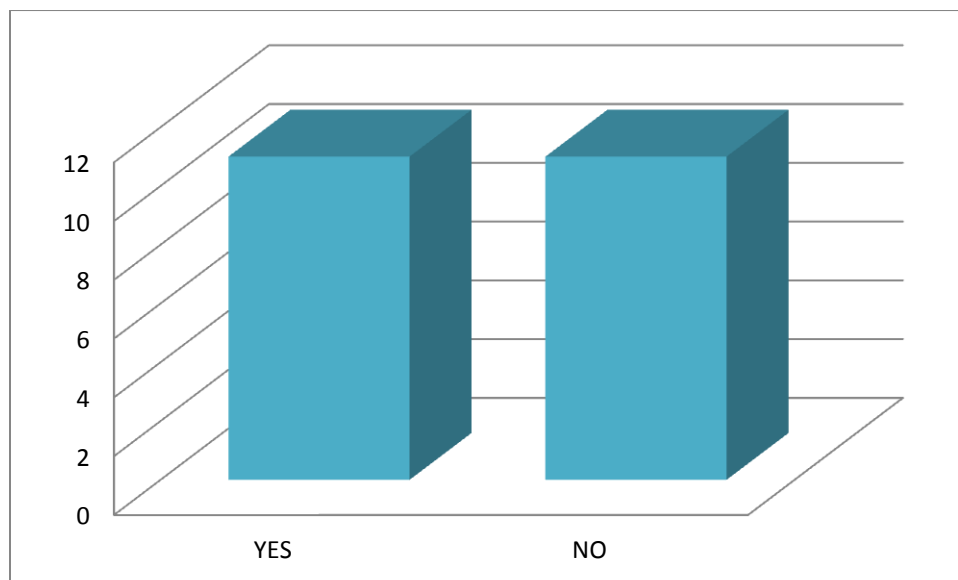
PLASMA UTILIZATION FOR FRACTIONATION:



<u>PLASMA UTILIZATION</u>	<u>%</u>	<u>NO.</u>
YES	68.18	15
NO	31.82	7

INFERENCE 22 .In response to surplus plasma utilization for fractionation, 11 (50%) responded that yes they would like to give surplus plasma available for plasma fractionation while 11 (50%) said that they would not provide surplus plasma for utilization.

% SHOWN FOR BLOOD CENTER GIVING PLASMA FOR FRACTIONATION:



<u>PLASMA FOR FRACTIONATION</u>	<u>%</u>	<u>NO.</u>
YES	50	11
NO	50	11

CONCLUSIONS

- The project entitled “Blood and plasma products in India” was conducted all over India and the regions covered by me was the western region of India and the major territories covered were Bareilly, Rudrapur, Moradabad, Agra, Aligarh.
- In all the hospitals covered under this survey, a similar trend was observed in all the cities, which was very useful in revealing the current scenario of plasma products in India.
- Quality of product is the critical factor which rules the Bio-pharmaceutical and Pharmaceutical system. The nature of market complaints vary in many ways. Considering the types of market complaints, it is necessary to keep on improving the system with latest innovative process and concept like quality by design and PAT (Process Analytical Technology). This will ensure that company believes in adapting the best for the customers.
- Market complaints systems are a powerful platform to connect consumers direct to the manufacturers. It is beneficial to both the parties. It gives consumers the freedom and right to complain about the unwanted products. At the same time, it helps us to improve on our products and understand the need of customers.
- Each organization undergoes strict regulatory procedures before it is marketed so the proper market research can help us to develop the quality and growth of the organization.

FOR BLOOD BANKS:

After researching in various blood banks around the cities:

Blood collection is the most challenging part among the duties of a blood bank

This project was taken up to know the actual scenario of blood bank in India. With the data obtained from the blood banks we came to know that demand is outpacing supply.

The core problem faced by blood banks is blood collection which is causing a severe deficit in the blood needs of our country. We must emphasize on the need for awareness and motivation among the general public to donate blood.

And also as the components making blood banks are less in no. So blood banks must combine with each other and must work in group to serve the nation as a whole.

RECOMMENDATIONS:

- Sales team of company should make extra efforts to make the product known to each and every doctor by conducting campaigning.
- Still some of the doctors are having doubt about the safety issue of these products and some are even not aware what should be the safety issues to be followed for these products so each and every doctor must be made 100% clear about the safety issues of these products.
- Promotional activities, educational events and awareness programmes need to be conducted at regular intervals.
- Some market surveys should be continued by the company to actually know the market scenario and keep themselves up-dated with their competitors and strategy followed by them.
- Company should try to meet the current unmet needs of the population and provide people more economical products with best services and should try to fill the voids in terms of:
 - ✓ Awareness,
 - ✓ Non-availability and
 - ✓ Pricing issues.

FOR BLOOD BANKS:

For blood banks to achieve 100% voluntary donations, it is necessary that the blood banks maintain some sort of communication with the first time donors, because it is easier to convince someone who has already donated blood to donate again and to solve this purpose blood banks should maintain touch with the donors so that donor does not forget about the blood banks altogether.

Another point is the medium by which the blood banks should keep in touch with the donors and hence the proposed suggestion would be to employ the use of website, combined with social networking features, so as to attract large mass of people, who further can invite their friends to join websites, so as to enable wider reach to the website. The website will focus on the need to achieve hundred % voluntary blood donations.

Certain issues which blood-banks should keep in mind are:

- ✓ Optimum blood donor-blood bank relationship.
- ✓ Creating awareness.
- ✓ Assuring the donors that their privacy is valued and acknowledging the donor's contribution by some means during every donation.

Blood banks across the state are like the sons. Each one has their own way of operating. Each one has their own strength - they are the sticks so must work in co-operative manner by helping each other.

“let’s stand together against suffering pain and death” –should be the slogan of all blood banks across india to serve the nation as a whole.

And also there is a large amount of surplus plasma available at almost every blood bank which can be used for componentization. Hence appropriate measures should be taken to discourage or minimize such wastage of blood.

Organisations must purchase surplus plasma if bank is ready to sell it.

LEARNINGS:

- I got the opportunity to apply various theoretical aspects into practical experiences.
- During my summer internship, I got to actually experience how companies functions in different locations.
- I also got to know the importance of skills and knowledge and how important it is to create the right combination of the skills to get success in any project.
- Field work taught me, how important it is to build relationships with the doctors and chemists and how medical representatives interact to achieve their targets for the growth of the companies.

ANNEXURES

➤ QUESTIONNAIRE :

Name:.....

Address.....

.....

.....

City

Ph.No. Mobile :.....

Email:

1. How long you have been using ?

A. Less than 3 yr, b. 3-7 yr, c. More than 7 yr.

2. Availability of product has been...

A. Excellent, b. Good, c. Poor.

3. Any specific brand you prefer...

4. Is it because of

A. Better Product b. Availability c. Pricing d. Other ()

5. What is general consumption pattern?

A. Less than 10, b. 10- 20, c. More than 20.

6. Indications you use it for

7. Because it is a biologic “made out of human plasma”; would you consider source of plasma important criterion in selection of the product?

A. Very critical, b. Critical, c. Not critical.

8. Any safety issues for these products?

9. Your opinion on the quality of currently available brands?

- A. Highly satisfied b. Satisfied c. Not satisfied d. Need improvement

10. Pricing of currently available brands?

- A. Expensive, b. Affordable, c. Not Affordable.

11. Does any awareness program about blood/ plasma products is required for patients / doctors / paramedical staff?

- A. Yes b. No.

12. How do you trust a brand of blood plasma product ?

- A. Product itself b. Company's image / safety record
C. Long term relationship d. Any other factor ()

13. What are the major issues in prescribing plasma products to the patients.

14 Any references, if you would like to give

LIST OF GRAPHS

<u>GRAPH NO.</u>	<u>PAGE NO.</u>	<u>PRODUCT GRAPH</u>
1.	11	IVIG
2.	14	HEPATITIS B IMMUNOGLOBULIN
3.	17	ALBUMIN
4.	20	ANTI-D IMMUNOGLOBULIN
5.	23	ANTI-RABIES IMMUNOGLOBULIN
6.	26	FACTOR VII
7.	29	FACTOR VIII
8.	32	FACTOR IX
9.	35	FIBRIN SEALANT
10.	38	FACTOR VIII + VWF
11.	41	TETANUS HYPER IMMUNOGLOBULIN
12.	44	ANTI-THROMBIN III
13.	47	FIBRINOGEN
14.	50	PROTHROBIN COMPLEX CONCENTRATE