Summer Training at
Plasmagen Biosciences Pvt. Ltd.
(April 17-June 9, 2012)

Plasma Product therapy in India: Facts and Fiction
&
Blood Banking Services in India: Facts and Fiction

By
Jignesh Bhatt

Under the guidance of
Dr. Monika Choudhary

Post Graduate Diploma in Pharmaceutical Management
2011-2013

IIHMR JAIPUR

Institute of Health Management Research,
Jaipur
2012

INSTITUTE OF HEALTH
MANAGEMENT RESEARCH
1, Prabhu Dayal Marg
Sanganer Airport, JAIPUR - 302 011, INDIA
Tel. : 3924700, 2791431-32
Fax : 91-141-3924738
E-mail : iihmr@iihmr.org
URL : http://www.iihmr.org
Gram : HEALTHINST

Certificate

This is to certify that Jignesh Bhatt has undergone summer training in Plasmagen Biosciences Pvt. Ltd. 17th April to 9th June, 2012

The candidate carried out all the studies related to summer training himself. His approach to the studies has been sincere, scientific, and analytical. This summer training in partial fulfillment of the course requirement is recommended for the award of Post Graduate Diploma in Pharmaceutical Management.

I wish his success in all future endeavors.

RSodani

Dr .P. R. Sodani

(Dean Academics and student affairs)

Monika

Dr. Monika Choudhary

(Assistant Professor)

TABLE OF CONTENTS

LIST OF TABLES

Acknowledgement

I would like to express my heartiest thanks to *Dr. Ranjeet Ajmani* "*CEO of PlasmaGen Biosciences Pvt. Ltd."*for granting me an opportunity to undergo summer training in their esteemed organization. The project report on "Plasma *Products Therapy and Blood Banking Services in India: Facts and Fiction"* has been compiled involving the hard work of many. Now is the time to express my heartiest gratitude towards them.

First of all I am highly thankful to my project guide *Dr. Amit Jha (Product Manager of PlasmaGen Biosciences) and Nipun Garg (National Manager Plasma Procurement and business Development of PlasmaGen Biosciences* ***),*** Who took a lot of pain to supervise this project work. Their guidance, advice, timely suggestion, explicit decision, attention had been privilege for me. I have no words to express my heavy debt of gratitude to them for their encouragement and relevant criticism time to time.

Furthermore, completion of this project was not possible without the valuable suggestions of my faculty mentor *Dr. Monika Choudhary.* Whose guidance helped me a lot during project.

I would like to express my special gratitude and thanks to *Ms. Arthi* (HR *Manager of PlasmaGen Biosciences).*for mailing me time to time and keeping me updated with all the latest updates and instructions on behalf of the company.

Last but not the least from the bottom of my heart I wish to thank my parents, friends for their kind co-operation and encouragement which help me in completion of this project. My thanks and appreciations also go to my colleague in developing the project and people who have willingly helped me out with their abilities.

CHAPTER 1

EXECUTIVE SUMMARY

CHAPTER 1

EXECUTIVE SUMMARY

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 such as IVIG, Human Albumin, Anti-D, Hepatitis and Tetanus Immunoglobulin 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. Despite the fact that all Plasma products are life saving drugs & the last line of defence for many doctors, many patients refrain from buying it as their price are well beyond the reach of many poor people's 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. Therefore the plasma market is not a very favourable place to do business in since the option of minimization of production costs doesn't hold over here.

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 (Ahmedabad,Anand,Vadodara,Surat). I seeked to determine the demand, consumption pattern, personal preferences, 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. 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 are 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 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.

CHAPTER 2

ORGANISATION PROFILE

CHAPTER 2

ORGANISATION PROFILE

The study is conducted by Plasmagen Biosciences pvt. ltd. an offshoot of Trigenesis Lifesciences situated in 160,KCI Chambers,2^{nd} Floor,5^{th} Main Road,Chamarajapet,Bangalore-560018 which is a pharmaceutical company dealing in protein therapy & plasma products for Indian & global markets. 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.

The following few paras are a brief introduction of its parent company Trigenesis Lifesciences, its history and its business activities.In the history of Indian Pharmaceutical Lifesciences industry , one name is worth a reckon i.e Trigenesis Lifesciences (P) Ltd. It is the dominant and vital arm of RSM group having diversified business areas such as Textile clothing’s, Finance consulting and Plastic additives & mouldings along with pharmaceuticals.

In the realm of success, today RSM group earns a standing as one of the top 20 well trounced conglomerate business group of the Indian Inc. with group turnover exceeding Rs 1600 million. RSM pharmaceuticals, the Flag Ship Company of the group struck its roots in the Indian pharmaceutical distribution and marketing industry in 1987 and presently is one of the top 5 distribution houses, employing around 500 people having an annual turnover of Rs. 500 Million. RSM group is built on the sturdy pillars of reliability, sound infrastructure, operational expertise and financial stability.

The success of RSM group in the distribution sector has given a strong footage for Trigenesis Lifesciences (P) Ltd - A business venture destined to the noble cause of social welfare in the emergency and critical care segment.

The Therapeutic Marvels include:

- Biological Plasma products
- Hormonal Therapy
- Recombinant Therapeutics
- Sterile anti infective

- Oncology
- Antibiotics lyophilised
- Anaesthetics
- Endocrinal Steroids
- Cardiovascular drugs
- Nutritional Supplements

CHAPTER 3

PROBLEM STATEMENT

CHAPTER 3

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 such as IVIG, Human Albumin, Anti-D, Hepatitis and Tetanus Immunoglobulin all 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.

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 & implementation.

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.

CHAPTER 4

BACKGROUND OF THE STUDY

CHAPTER 4

BACKGROUND OF THE STUDY

Plasma products such as IVIG, Human Albumin, Anti-D, Hepatitis and Tetanus Immunoglobulin are all very expensive in the market because their only source is Human Blood & blood donors charge a hefty sum of money for any donation of blood they make. Despite the fact that all Plasma products are life saving drugs & the last line of defence 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. Therefore the plasma market is not a very favourable place to do business in since the option of minimization of production costs seldom works over here.

The study is conducted by Plasmagen Biosciences pvt. ltd. an offshoot of Trigenesis Lifesciences which is a pharmaceutical company dealing in protein therapy & plasma products for Indian & global markets .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 of business for them, as it sets foot into the plasma market on their own.

During my market survey on doctors of reputed hospitals throughout the western region of India, my objectives had been to determine the demand, the consumption pattern, personal preferences and quality & availability of currently available Blood plasma brands in that area. This is going to give us an idea of the current market scenario prevalent in those cities which will serve as vital information of the market where business is intended to be done. The following few pages are a detailed account along with graphical representations of all the responses I have gathered during my field-work in those cities. The intentions are to portray a close reflection of the plasma market scenario in that area and come up with new business prospects and ways to counter the limitations of trade in plasma market.

OBJECTIVES OF THE STUDY

- To determine the demand, consumption pattern and personal preference of the doctors for plasma products.
- To determine the quality and availability of plasma products brands.

CHAPTER 5

METHODOLOGY

CHAPTER 5

METHODOLOGY

The project undertaken is a market survey of the demand, consumption pattern & personal preferences of doctors, paramedical staffs, 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 Ahmedabad, Anand, Vadodara and Surat.

5.1 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 which constitute a tenth of my total responses.

- For IVIG I have consulted Haematologists, Nephrologists, Oncologists, Neurologists, and Immunologists.
- For Human Albumin I have consulted Haematologists, Nephrologists, Oncologists, Cardiologists, Gastroenterologists, and Pulmonologists.
- For Anti-D I have consulted Gynaecologists only.
- For Hepatitis B Immunoglobulin I have consulted Physician (MD), Gastroenterologists, Nephrologists, Organ Transplant.
- For Tetanus Immunoglobulin I have consulted Internal Medicine, Physician MD and Paediatrics.

5.2 HOSPITALS I HAVE VISITED :

V. S. Hospital, Civil Hospital, Rajasthan Hospital, Sterling Hospital, Shalby Hospital, IKDRC, Civil hospital campus in Ahemdabad. Shree Krishna Hospital in Anand. S. S. G. Hospital, Kashiben Patel Children Hospital, Narhari Hospital, Bhailal Amin General Hospital, Jamna Bai General Hospital in Vadodra. SMIMMER Hospital, Nirmal Hospital, New Civil Hospital in Surat.

5.3 DATA COLLECTION :

- Data collection for most of my respondents had been through Questionnaire made by me with the help of my ever helpful mentor Mr. Subhasish Hazra of Plasmagen Biosciences Pvt. Ltd.

- Approach: Qualitative & Quantitative data collection
- Tool: Semi-Structured questionnaire

- Technique: Survey method (face to face interview)

5.4 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 & Simple random sampling is used while meeting random doctors as they come, in a hospital visited. There is also a preplanned and fixed statistical design, i.e., to use compound bar diagrams for every question to represent our findings. Observational Design is also well structured since the same questionnaire prepared by us had been used all throughout our research work. So these are some of the reasons for including our market survey under a descriptive research design.

5.5 SAMPLING :

Judgement sampling or Non-Probability sampling had been majorly used in selecting samples for my market research since a doctor, list constituting the top doctors in the western region of India, had been provided to me in word and excel format from the company.

Apart from this I have also used Simple Random Sampling while meeting doctors randomly as they come in any hospital I had visited.

The total number of responses for me had been 109. Product wise it will be like the following:

- 67 for IVIG
- 55 for Hepatitis B Immunoglobulin
- 59 for Albumin
- 41 for Anti D Immunoglobulin
- 35 for Anti Rabies Immunoglobulin
- 2 for Factor VII
- 10 for Factor VIII
- 39 for Tetanus Hyper Immunoglobulin

5.6 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.

5.7 DATA MANAGEMENT:

Information will be collected on questionnaire itself in field and then will be entered in the database.

- **Data Processing:-**

Qualitative data:-

Sorting: Similar responses will be grouped

Coding: Each group of responses will be assigned a specific code

Quantitative data:-

Manual compilation of the data collected through questionnaire.

- **Data entry:-**

MS excel spread sheets.

- **Data Representation & Analysis:-**

MS excel will be used for graphical representation and for analyzing the data.

CHAPTER 6

OBERVATION, ANALYSIS AND FINDINGS

CHAPTER 6

OBERVATION, ANALYSIS AND FINDINGS

6.1 FOR IVIG

Opinion of doctors regarding brand prefrrence

a) No specific brand

b) Bharat Serum

c) Reliance

d) Fusion

e) Reliance and Baxter

f) Reliance and Intas

g) Reliance and Bharat Serum

Opinion of doctors regarding safety issues of the product

a) Purity

b) Purity and Infection

c) Purity and Allergy

d) Allergy

e) Allergy and Transmittable Disease

Opinion of doctors regarding how do they trust on blood plasma products

a) Products itself

b) Company’s image/Safety record

c) Long term relationship

d) Any other factor

e) Products itself and Company’s image/Safety record

f) Company’s image/Safety record and Long term relationship

Opinion of doctors regarding major issues in prescribing to the patients

a) Cost

b) Cost and Quality

c) Efficacy

d) Cost and Reactions

e) Reactions

f) Cost and Availability

Sample Size and Total number of Responses for IVIG:-

Question No.	1	2	3	4	5	6	7	8	9	10	11	12
Sample size	67	67	67	67	67	67	67	67	67	67	67	67
No. Of Respondent	67	67	66	64	66	64	13	66	66	65	64	50

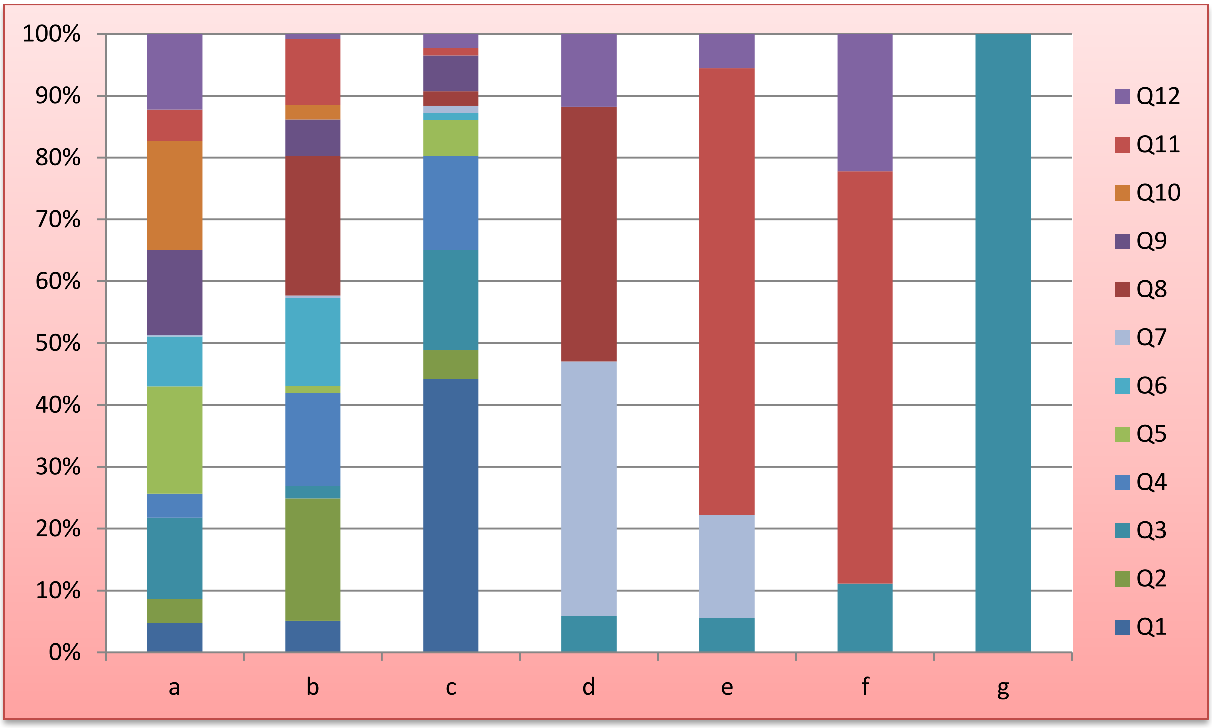
Pictorial Representation of the above tabulated values of IVIG

IVIG

(Values in brackets 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	13	44	13	58	27	1	0	46	59	17	41
	23.88	19.4	65.67	20.31	87.87	42.18	7.69	0	69.69	90.76	26.56	82
b	13	50	5	38	3	36	1	57	15	6	27	2
	19.4	74.62	7.46	59.37	4.54	56.25	7.69	86.36	22.72	9.23	42.18	4
c	38	4	14	13	5	1	1	2	5		1	2
	56.71	5.97	20.89	20.31	7.57	1.56	7.69	3.03	7.57		1.56	4
d			1	0			7	7			0	2
			1.49	0			53.84	10.6			0	4
e			1				3				13	1
			1.49				23.07				20.31	2
f			1								6	2
			1.49								9.37	4
g			1									
			1.49									



Analysis and Findings

1. There are 23.88 % of the doctors ,who are using IVIG ,have less than 3 years of experiences.19.4% of the doctors ,who are using the same, have 3 to 7 years of experiences and 56.71 % 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 74.62% of the doctor'sopinion) but all doctors are not extremely satisfied because only 19.4% of the doctors said availability is excellent and 5.97% of the doctors said that availability is poor.

3. 65.67% of the doctors did not prefer any specific brand they prescribe spontaneously, 7.46% prefer Bharat Serum's brand, 20.89% prefer Reliance's brand, 1.49% prefer Fusion's brand.

4. Doctors prefer a particular brand mainly for availability (59.37%) and. 20.31 % of the doctors are concerned with the quality of the product, i.e, they opt for better product option and 20.31% doctors are influenced by pricing.

5. 58% doctors are prescribing IVIG less than 10 vials per month per patient, 4.54 % of the doctors are using 10 to 20 vials per month per patient and 7.57 % 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 56.25% of them opted for the option “critical” and 42.18% of them opted for the option “very critical”. Only 1.56% of the doctors consider it to be not critical.

7. While using these product 53.84% of the doctors found allergic reactions. 23.07% of the doctors found both allergic reaction and transmittable disease 7.69% of the doctors feel that the products should be purified and should be free from infectivity.7.69% of the doctors found allergic reaction and also feel that products should be purified and 7.69% of the doctors feel that products should be purified.

8. 86.36% of the doctors are satisfied with the existing brands but important is that 0% of the doctors are highly satisfied and 3.03% of the doctors not satisfied with currently available brands and 10.6% of the doctors think that the product’s brands need to be improved.

9. 69.69% of the doctors think that the pricing of the currently available IVIG brands is expensive and 22.72 % of them think that it is affordable and 7.57 % of them think that it is not affordable.

10. 90.76% of the doctors think that awareness programs about blood and plasma products are needed but 9.23 % of them think that no awareness program is needed.

11. 26.56 % of the doctors rely on the product itself and 42.18% of the doctors rely on companies brand images and safety record, 1.56% of the doctors relies on long term relationship. 20.31% of the doctors rely on both products and companies brand images and safety record and 9.37% of the doctors rely on companies brand images/safety record and long term relationship.

12. While prescribing the medicine 82% of the doctors are concerned about the cost and 4% are concerned about cost and quality, 4% of the doctors concerned about efficacy, 4% of the doctors concerned about cost and the infections, 2% of the doctors concerned about reactions and 4% of the doctors concerned about cost and availability.

6.2 FOR HEPATITIS B IMMUNOGLOBULIN

Opinion of doctors regarding brand preference

a) No specific brand

b) Bharat Serum

c) Reliance

d) Reliance and Bharat Serum

Opinion of doctors regarding safety issues of the product

a) Allergy

b) Allergy and Infection

c) DCGI-FDA endorsement, GCP GMP followance, Accreditation

Opinion of doctors regarding how do they trust on blood plasma products

a) Products itself

b) Company's image/Safety record

c) Long term relationship

d) Any other factor

e) Products itself and Company's image/Safety record

f) Company's image/Safety record and Long term relationship

Opinion of doctors regarding major issues in prescribing to the patients

a) Cost

b) Cost and infection

c) Availability, Safety and Affordability

d) Infections

e) Cost and Availability

Sample Size and Total number of Responses for Hepatitis B:-

Question No.	1	2	3	4	5	6	7	8	9	10	11	12
Sample size	55	55	55	55	55	55	55	55	55	55	55	55
No. Of Respondent	55	55	55	36	55	55	13	55	55	55	55	46

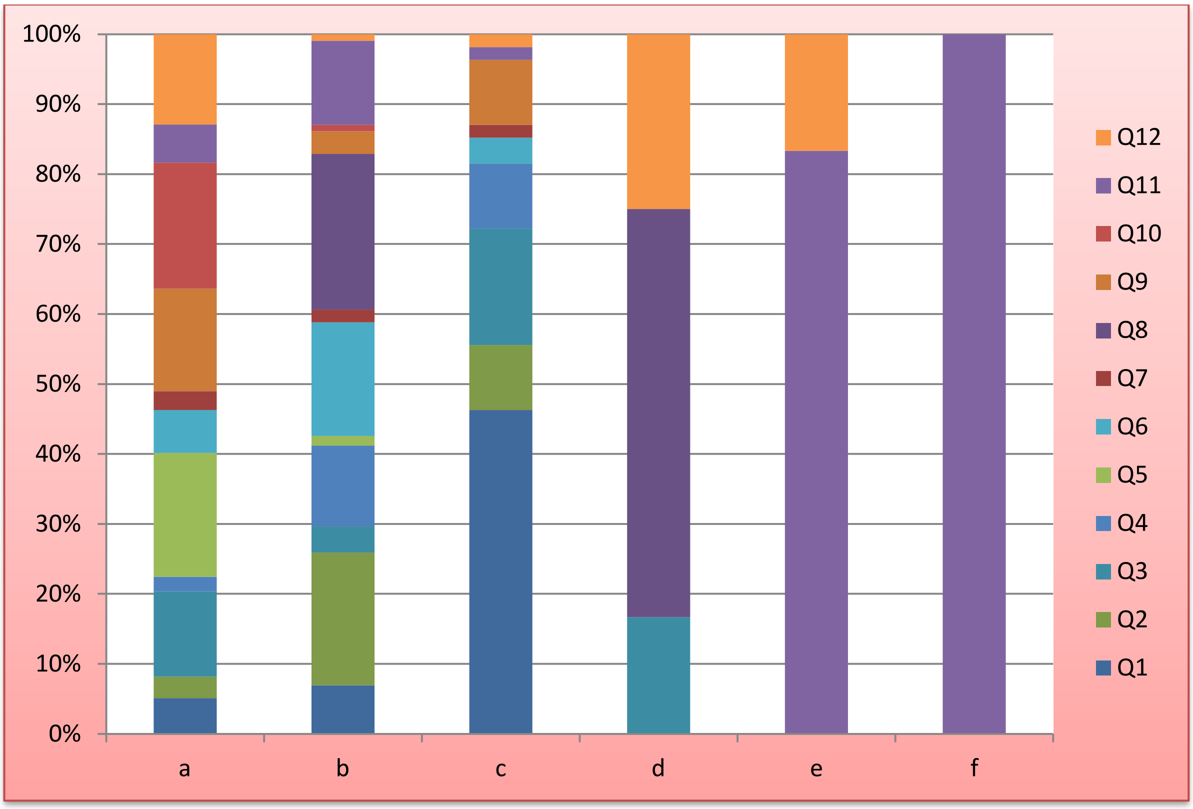
Pictorial Representation of the above tabulated values of Hepatitis B

Hepatitis B

(Values in brackets 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	15	9	36	6	52	18	8	0	43	53	16	38
	27.27	16.36	65.45	16.66	94.54	32.72	61.53	0	78.18	96.36	29.09	82.6
b	15	41	8	25	3	35	4	48	7	2	26	2
	27.27	74.54	14.54	69.44	5.45	63.63	30.76	87.27	12.72	3.63	47.27	4.34
c	25	5	9	5	0	2	1	0	5		1	1
	45.45	9.09	16.36	13.88	0	3.63	7.69	0	9.09		1.81	2.17
d			2	0				7			0	3
			3.63	0				12.72			0	6.52
e											10	2
											18.18	4.34
f											2	
											3.63	



Analysis and Findings

1. There are 27.27 % of the doctors ,who are using Hepatitis B immunoglobulin ,have less than 3 years of experiences.27.27% of the doctors ,who are using the same, have 3 to 7 years of experiences and 45.45 % 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 74.54% of the doctors' opinion) but all doctors are not extremely satisfied because only 16.36% of the doctors said availability is excellent and 9.09% of the doctors said that availability is poor.

3. 65.45% of the doctors did not prefer any specific brand they prescribe spontaneously, 14.54% prefer Bharat Serum's brand, 16.36% prefer Reliance's brand, and 3.63% prefer both Reliance and Bharat Serum's brand.

4. Doctors prefer a particular brand mainly for availability (69.44%) and. 16.66 % of the doctors are concerned with the quality of the product, i.e, they opt for better product option and 13.88% doctors are influenced by pricing.

5. 94.54% doctors are prescribing Hepatitis B immunoglobulin less than 10 vials per month per patient, 5.45 % 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 63.63% of them opted for the option “critical” and 32.72% of them opted for the option “very critical”. Only 3.63% of the doctors consider it to be not critical.

7. While using these product 61.53% of the doctors found allergic reactions. 30.76% of the doctors found both allergic reaction and transmittable disease. 7.69% of the doctors feel that the products should be accredited by regulatory agencies.

8. 87.27% of the doctors are satisfied with the existing brands but important is that 0% of the doctors are highly satisfied and 12.72% of the doctors think that the product’s brands need to be improved.

9. 78.18% of the doctors think that the pricing of the currently available Hepatitis B immunoglobulin brands is expensive and 12.72 % of them think that it is affordable and 9.09 % of them think that it is not affordable.

10. 96.36% of the doctors think that awareness programs about blood and plasma products are needed but 3.63 % of them think that no awareness program is needed.

11. 29.09 % of the doctors rely on the product itself and 47.27% of the doctors rely on companies brand images and safety record, 1.81% of the doctors relies on long term relationship. 18.18% of the doctors rely on both products and companies brand images and safety record and 3.63% of the doctors rely on companies brand images/safety record and long term relationship.

12. While prescribing the medicine 82.6% of the doctors are concerned about the cost and 4.34% are concerned about cost and infection, 2.17% of the doctors concerned about availability, safety, affordability, 6.52% of the doctors concerned about the infections, and 4.34% of the doctors concerned about cost and availability.

6.3 FOR ALBUMIN

Opinion of doctors regarding brand preference

a) No specific brand
b) Bharat Serum
c) Reliance
d) Reliance and Baxter
e) Baxter

Opinion of doctors regarding safety issues of the product

a) Allergy
b) Allergy and Infection
c) DCGI-FDA endorsement, GCP GMP followance, Accreditation

Opinion of doctors regarding how do they trust on the blood plasma products

a) Products itself
b) Company’s image/Safety record
c) Long term relationship
d) Any other factor
e) Products itself and Company’s image/Safety record
f) Company’s image/Safety record and Long term relationship
g) Products itself and Long term relationship

Opinion of doctors regarding major issues in prescribing to the patients

a) Cost
b) Cost and availability
c) Cost, infection and allergy
d) Availability, safety and affordability
e) Safety
f) Allergy and infections

Sample Size and Total number of Responses for Albumin :-

Question No.	1	2	3	4	5	6	7	8	9	10	11	12
Sample size	59	59	59	59	59	59	59	59	59	59	59	59
No. Of Respondent	59	59	59	40	59	59	12	59	59	59	59	47

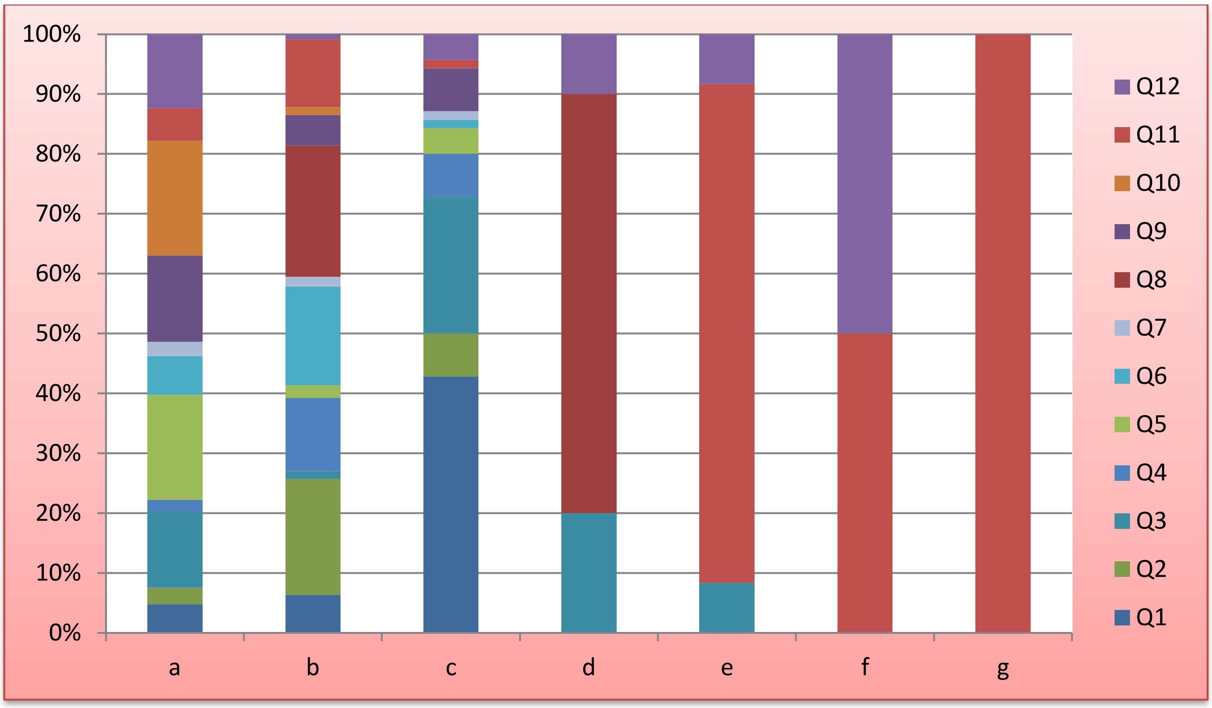
Pictorial Representation of the above tabulated values of Albumin

Albumin

(Values in brackets 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	8	37	6	51	19	7	0	42	56	16	36
	23.72	13.55	62.71	15	86.44	32.2	58.33	0	71.18	94.91	27.11	76.59
b	15	46	3	29	5	39	4	52	12	3	27	2
	25.42	77.96	5.08	72.5	8.47	66.1	33.33	88.13	20.33	5.08	45.76	4.25
c	30	5	16	5	3	1	1	0	5		1	3
	50.84	8.47	27.11	12.5	5.08	1.69	8.33	0	8.47		1.69	6.38
d			2	0				7			0	1
			3.38	0				11.86			0	2.12
e			1								10	1
			1.69								16.94	2.12
f											4	4
											6.77	8.51
g											1	
											1.69	



Analysis and Findings

1. There are 23.72 % of the doctors ,who are using Albumin ,have less than 3 years of experiences.25.42% of the doctors ,who are using the same, have 3 to 7 years of experiences and 50.84 % 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 77.96% of the doctors' opinion) but all doctors are not extremely satisfied because only 13.55% of the doctors said availability is excellent and 8.47% of the doctors said that availability is poor.

3. 62.71% of the doctors did not prefer any specific brand they prescribe spontaneously, 5.08% prefer Bharat Serum's brand, 27.11% prefer Reliance's brand, and 3.38% prefer both Reliance and Baxter and 1.69% prefer only Baxter's brand.

4. Doctors prefer a particular brand mainly for availability (72.5%) and. 15 % of the doctors are concerned with the quality of the product, i.e, they opt for better product option and 12.5% doctors are influenced by pricing.

5. 86.44% doctors are prescribing Albumin less than 10 vials per month per patient, 8.47 % of the doctors are using 10 to 20 vials per month per patient and 5.08 % 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 66.10% of them opted for the option "critical" and 32.2% of them opted for the option "very critical". Only 1.69% of the doctors consider it to be not critical.

7. While using these product 58.33% of the doctors found allergic reactions. 33.33% of the doctors found both allergic reaction and transmittable disease. 8.33% of the doctors feel that the products should be accredited by regulatory agencies.

8. 88.13% of the doctors are satisfied with the existing brands but important is that 0% of the doctors are highly satisfied and 11.86% of the doctors think that the product's brands need to be improved.

9. 78.18% of the doctors think that the pricing of the currently available Albumin brands is expensive and 20.33 % of them think that it is affordable and 8.47 % of them think that it is not affordable.

10. 94.91% of the doctors think that awareness programs about blood and plasma products are needed but 5.08 % of them think that no awareness program is needed.

11. 27.11 % of the doctors rely on the product itself and 45.76% of the doctors rely on companies brand images and safety record, 1.69% of the doctors relies on long term relationship. 16.94% of the doctors rely on both products and companies brand images and safety record and 6.77% of the doctors rely on companies brand images/safety record and long term relationship and 1.69% of the doctors rely on both product itself and long term relationship.

12. While prescribing the medicine 76.59% of the doctors are concerned about the cost and 4.25% are concerned about cost and availability, 6.38% of the doctors concerned about cost, infections and allergy. 2.12% of doctors concerned about availability, safety, affordability, 2.12% of the doctors concerned about safety, and 8.51% of the doctors concerned about allergy and infections.

6.4 FOR ANTI D IMMUNOGLOBULIN

Opinion of doctors regarding brand preference

a) No specific brand

b) Bharat Serum

c) Reliance

Opinion of doctors regarding safety issues of the product

a) Allergy

b) Allergy and Infection

c) DCGI-FDA endorsement, GCP GMP followance, Accreditation

Opinion of doctors regarding how do they trust on blood plasma products

a) Products itself

b) Company's image/Safety record

c) Long term relationship

d) Any other factor

e) Products itself and Company's image/Safety record

f) Company's image/Safety record and Long term relationship

g) Products itself and Long term relationship

Opinion of doctors regarding major issues in prescribing to the patients

a) Cost

b) Cost and availability

c) Cost, infection

d) Availability, safety and affordability

e) Allergy and infections

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
Sample size	41	41	41	41	41	41	41	41	41	41	41	41
No. Of Respondent	41	41	41	39	41	41	8	41	41	41	41	28

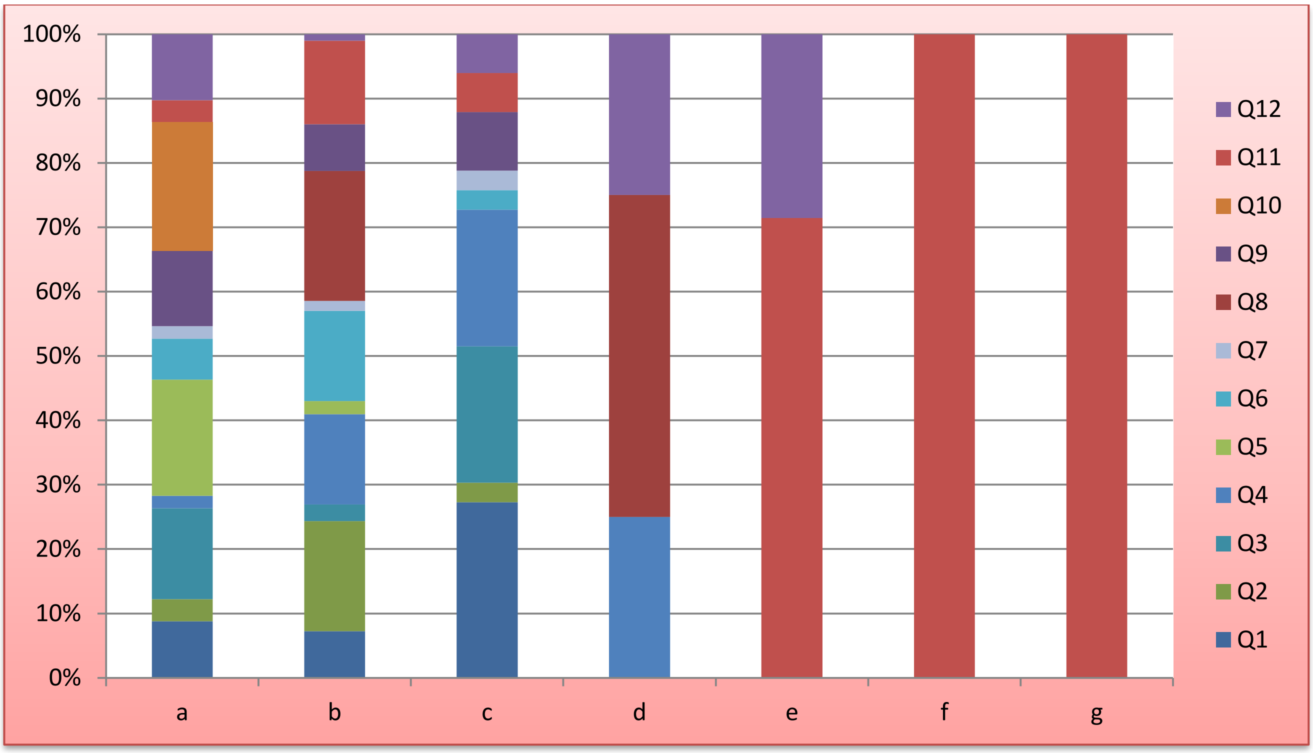
Pictorial Representation of the above tabulated values of Anti D Immunoglobulin

Anti D immunoglobulin

(Values in brackets 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	18	7	29	4	37	13	4	0	24	41	7	21
	43.9	17.07	70.73	9.75	90.24	31.7	50	0	58.53	100	17.07	75
b	14	33	5	27	4	27	3	39	14	0	25	2
	34.14	80.48	12.19	65.85	9.75	65.85	37.5	95.12	34.14	0	60.97	7.14
c	9	1	7	7	0	1	1	0	3		2	2
	21.95	2.43	17.07	17.07	0	2.43	12.5	0	7.31		4.87	7.14
d				1				2			0	1
				2.43				4.87			0	3.57
e											5	2
											12.19	7.14
f											1	
											2.43	
g											1	
											2.43	



Analysis and Findings

1. There are 43.90 % of the doctors ,who are using Anti D immunoglobulin ,have less than 3 years of experiences.34.14% of the doctors ,who are using the same, have 3 to 7 years of experiences and 21.95 % 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 80.48% of the doctors' opinion) but all doctors are not extremely satisfied because only 17.07% of the doctors said availability is excellent and 2.43% of the doctors said that availability is poor.

3. 70.73% of the doctors did not prefer any specific brand they prescribe spontaneously, 12.19% prefer Bharat Serum's brand, 17.07% prefer Reliance's brand.

4. Doctors prefer a particular brand mainly for availability (65.85%) and. 9.75 % of the doctors are concerned with the quality of the product, i.e, they opt for better product option and 17.07% doctors are influenced by pricing and 2.43% of the doctors concerned about other factors.

5. 90.24% doctors are prescribing Anti D Immunoglobulin less than 10 vials per month per patient, 9.75 % 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 65.85% of them opted for the option “critical” and 31.70% of them opted for the option “very critical”. Only 2.43% of the doctors consider it to be not critical.

7. While using these product 50% of the doctors found allergic reactions. 37.5% of the doctors found both allergic reaction and transmittable disease. 12.5% of the doctors feel that the products should be accredited by regulatory agencies.

8. 95.12% of the doctors are satisfied with the existing brands but important is that 0% of the doctors are highly satisfied and 4.87% of the doctors think that the product’s brands need to be improved.

9. 58.53% of the doctors think that the pricing of the currently available Anti D immunoglobulin brands is expensive and 34.14 % of them think that it is affordable and 7.31 % 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. 17.07 % of the doctors rely on the product itself and 60.97% of the doctors rely on companies brand images and safety record, 4.87% of the doctors relies on long term relationship. 16.94% of the doctors rely on both products and companies brand images and safety record and 12.19% of the doctors rely on companies brand images/safety record and long term relationship and 2.43% of the doctors rely on both product itself and long term relationship.

12. While prescribing the medicine 75% of the doctors are concerned about the cost and 7.14% are concerned about cost and availability, 7.14% of the doctors concerned about cost and infections. 3.57% of doctors concerned about availability, safety, affordability and 7.14% of the doctors concerned about allergy.

6.5 FOR ANTI RABIES IMMUNOGLOBULIN

Opinion of doctors regarding brand preference

a) No specific brand

b) Bharat Serum

c) Reliance

Opinion of doctors regarding safety issues of the product

a) Allergy

b) Allergy and Infection

c) DCGI-FDA endorsement, GCP GMP followance, Accreditation

Opinion of doctors regarding how do they trust on blood plasma products

a) Products itself

b) Company's image/Safety record

c) Long term relationship

d) Any other factor

e) Products itself and Company's image/Safety record

f) Company's image/Safety record and Long term relationship

Opinion of doctors regarding major issues in prescribing to the patients

a) Cost

b) Cost and availability

c) Cost, infection and allergy

d) Allergy and infections

e) Safety

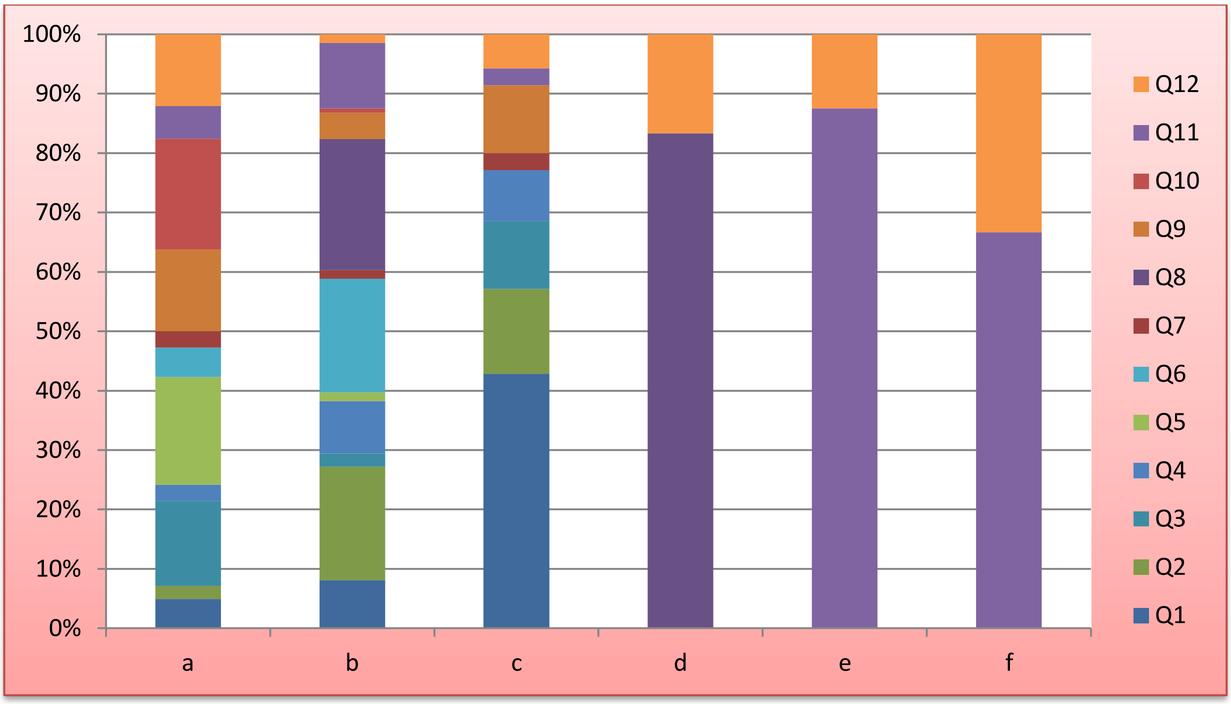
f) Availability, Safety and Cost

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
Sample size	35	35	35	35	35	35	35	35	35	35	35	35
No. Of Respondent	35	35	33	20	35	35	8	35	35	35	35	29

Pictorial Representation of the above tabulated values of Anti Rabies Immunoglobulin

Anti Rabies Immunoglobulin												
(Values in brackets 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	9	4	26	5	33	9	5	0	25	34	10	22
	25.71	11.42	78.78	25	94.28	25.71	62.5	0	71.42	97.14	28.57	75.86
b	11	26	3	12	2	26	2	30	6	1	15	2
	31.42	74.28	9.09	60	5.71	82.85	25	85.71	17.14	2.85	42.85	6.89
c	15	5	4	3			1	0	4		1	2
	42.85	14.28	12.12	15			12.5	0	11.42		2.85	6.89
d				0				5			0	1
				0				14.28			0	3.44
e											7	1
											20	3.44
f											2	1
											5.71	3.44



Analysis and Findings

1. There are 25.71 % of the doctors ,who are using Anti Rabies immunoglobulin ,have less than 3 years of experiences.31.42% of the doctors ,who are using the same, have 3 to 7 years of experiences and 42.85 % 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 74.28% of the doctors' opinion) but all doctors are not extremely satisfied because only 11.42% of the doctors said availability is excellent and 14.28% of the doctors said that availability is poor.

3. 78.78% of the doctors did not prefer any specific brand they prescribe spontaneously, 9.09% prefer Bharat Serum's brand, 12.12% prefer Reliance's brand.

4. Doctors prefer a particular brand mainly for availability (60%) and. 25 % of the doctors are concerned with the quality of the product, i.e, they opt for better product option and 15% doctors are influenced by pricing.

5. 94.28% doctors are prescribing Anti Rabies immunoglobulin less than 10 vials per month per patient, 5.71 % 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 82.85% of them opted for the option “critical” and 25.71% of them opted for the option “very critical”.

7. While using these product 62.5% of the doctors found allergic reactions. 25% of the doctors found both allergic reaction and transmittable disease. 12.5% of the doctors feel that the products should be accredited by regulatory agencies.

8. 85.71% of the doctors are satisfied with the existing brands but important is that 0% of the doctors are highly satisfied and 14.28% of the doctors think that the product’s brands need to be improved.

9. 71.42% of the doctors think that the pricing of the currently available Anti Rabies immunoglobulin brands is expensive and 17.14 % of them think that it is affordable and 11.42 % of them think that it is not affordable.

10. 97.14% of the doctors think that awareness programs about blood and plasma products are needed.

11. 28.57 % of the doctors rely on the product itself and 42.85% of the doctors rely on companies brand images and safety record, 2.85% of the doctors relies on long term relationship. 20% of the doctors rely on both products and companies brand images and safety record and 5.71% of the doctors rely on companies brand images/safety record and long term relationship.

12. While prescribing the medicine 75.86% of the doctors are concerned about the cost and 6.89% are concerned about cost and availability, 6.89% of the doctors concerned about cost and infections. 3.44% of doctors concerned about availability, safety, affordability and 3.44% of the doctors concerned about allergy and 3.44% of doctors concerned about safety.

6.6 FOR FACTOR VIII

Opinion of doctors regarding brand preference

a) No specific brand
b) Bharat Serum

Opinion of doctors regarding safety issues of the product

a) Allergy
b) Allergy and Infection

Opinion of doctors regarding how do they trust on blood plasma products

a) Products itself
b) Company's image/Safety record
c) Long term relationship
d) Any other factor
e) Products itself and Company's image/Safety record
f) Company's image/Safety record and Long term relationship

Opinion of doctors regarding major issues in prescribing to the patients

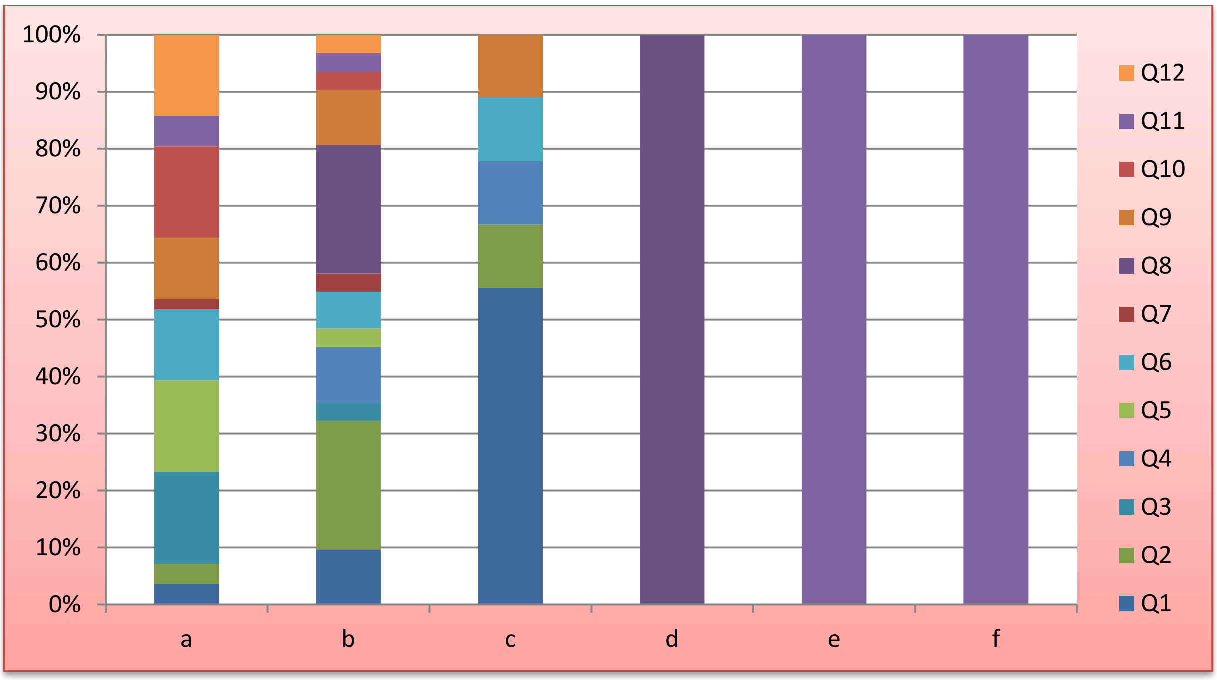
a) Cost
b) Cost and availability

Sample Size and Total number of Responses for Factor VIII:-

Question No.	1	2	3	4	5	6	7	8	9	10	11	12
Sample size	10	10	10	10	10	10	10	10	10	10	10	10
No. Of Respondent	10	10	10	4	10	10	2	10	10	10	10	9

Pictorial Representation of the above tabulated values of Factor VIII

Factor VIII												
(Values in brackets 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	2	9	0	9	7	1	0	6	9	3	8
	20	20	90	0	90	70	50	0	60	90	30	88.88
b	3	7	1	3	1	2	1	7	3	1	1	1
	30	70	10	75	10	20	50	70	30	10	10	11.11
c	5	1		1	0	1		0	1		0	
	50	10		25	0	10		0	10		0	
d				0				3			0	
				0				30			0	
e											4	
											40	
f											2	
											20	



Analysis and Findings

1. There are 20 % of the doctors ,who are using Factor VIII ,have less than 3 years of experiences.30% of the doctors ,who are using the same, have 3 to 7 years of experiences and 50 % 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 did not prefer any specific brand they prescribe spontaneously, 1% prefer Bharat Serum's brand.

4. Doctors prefer a particular brand mainly for availability (75%) and. 25% doctors are influenced by pricing.

5. 90% doctors are prescribing Factor VIII 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 70% of them opted for the option "very critical" and 20% of them opted for the option "critical" and 10% of doctor's opinion is "not critical".

7. While using these product 50% of the doctors found allergic reactions and 50% of the doctors found both allergic reaction and transmittable disease.

8. 70% of the doctors are satisfied with the existing brands but important is that 0% of the doctors are highly satisfied and 30% of the doctors think that the product's brands need to be improved.

9. 60% of the doctors think that the pricing of the currently available Factor VIII brands is expensive and 30 % of them think that it is affordable and 10 % of them think that it is not affordable.

10. 90% of the doctors think that awareness programs about blood and plasma products are needed.

11. 30 % of the doctors rely on the product itself and 10% of the doctors rely on companies brand images. 40% of the doctors rely on both products and companies brand images and safety record and 20% of the doctors rely on companies brand images/safety record and long term relationship.

12. While prescribing the medicine 88.88% of the doctors are concerned about the cost and 11.11% are concerned about cost and availability.

6.7 FOR TETANUS HYPER IMMUNOGLOBULIN

Opinion of doctor regarding brand preference

a) No specific brand

b) Bharat Serum

c) Reliance

Opinion of doctors regarding why are they preferring the specific brand

a) Better Product

b) Availability

c) Pricing

d) Other

e) Better Product and Availability

f) Availability and Pricing

g) Better Product, Availability and Pricing

Opinion of doctors regarding safety issues of the product

a) Allergy

b) Allergy and Infection

c) DCGI-FDA endorsement, GCP GMP followance, Accreditation

Opinion of doctors regarding how do they trust on blood plasma products

a) Products itself

b) Company's image/Safety record

c) Long term relationship

d) Any other factor

e) Products itself and Company's image/Safety record

f) Company's image/Safety record and Long term relationship

Opinion of doctors regarding major issues in prescribing to the patients

a) Cost

b) Cost and availability

c) Cost, Availability and Safety

d) Cost and Infection

e) Safety

f) Reactions

Sample Size and Total number of Responses for Tetanus hyper immunoglobulin:-

Question No.	1	2	3	4	5	6	7	8	9	10	11	12
Sample size	39	39	39	39	39	39	39	39	39	39	39	39
No. Of Respondent	39	39	39	17	39	39	10	39	39	39	39	36

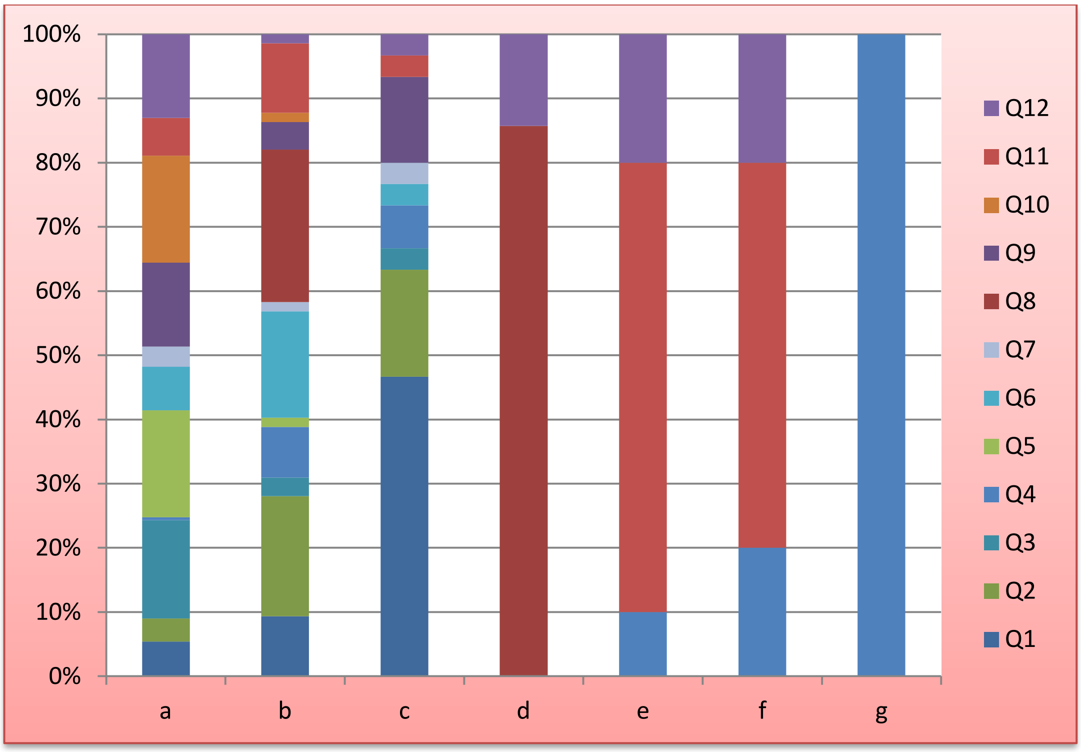
Pictorial Representation of the above tabulated values of Tetanus hyper immunoglobulin

Tetanus hyper immunoglobulin

(Values in brackets 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	12	8	34	1	37	15	7	0	29	37	13	29
	30.76	20.51	87.17	5.88	94.87	38.46	70	0	74.35	94.87	33.33	80.55
b	13	26	4	11	2	23	2	33	6	2	15	2
	33.33	66.66	10.25	64.7	5.12	58.97	20	84.61	15.38	5.12	38.46	5.55
c	14	5	1	2	0	1	1	0	4		1	1
	35.89	12.82	2.56	11.76	0	2.56	10	0	10.25		2.56	2.77
d				0				6			0	1
				0				15.38			0	2.77
e				1							7	2
				5.88							17.94	5.55
f				1							3	1
				5.88							7.69	2.77
g				1								
				5.88								



Analysis and Findings

1. There are 30.76 % of the doctors ,who are using Tetanus hyper immunoglobulin, have less than 3 years of experiences.33.33% of the doctors ,who are using the same, have 3 to 7 years of experiences and 35.89 % 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 66.66% of the doctors' opinion) but all doctors are not extremely satisfied because only 20.51% of the doctors said availability is excellent and 12.82% of the doctors said that availability is poor.

3. 87.17% of the doctors did not prefer any specific brand they prescribe spontaneously, 10.25% prefer Bharat Serum's brand, 2.56% prefer Reliance's brand.

4. Doctors prefer a particular brand mainly for availability (64.7%) and. 5.88 % of the doctors are concerned with the quality of the product, i.e, they opt for better product option and 11.76% doctors are influenced by pricing, 5.88% doctors influenced by product and availability, 5.88% of doctors influenced by availability and pricing and 5.88% of doctors influenced by product, availability and pricing.

5. 94.87% doctors are prescribing Tetanus hyper immunoglobulin less than 10 vials per month per patient, 5.12 % 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 58.97% of them opted for the option “critical” and 38.46% of them opted for the option “very critical “and 2.56% said “not critical”.

7. While using these product 70% of the doctors found allergic reactions. 20% of the doctors found both allergic reaction and transmittable disease. 10% of the doctors feel that the products should be accredited by regulatory agencies.

8. 84.61% of the doctors are satisfied with the existing brands but important is that 0% of the doctors are highly satisfied and 15.38% of the doctors think that the product’s brands need to be improved.

9. 74.35% of the doctors think that the pricing of the currently available Tetanus hyper immunoglobulin brands is expensive and 15.38 % of them think that it is affordable and 10.25% of them think that it is not affordable.

10. 94.87% of the doctors think that awareness programs about blood and plasma products are needed.

11. 33.33 % of the doctors rely on the product itself and 38.46% of the doctors rely on companies brand images and safety record, 2.56% of the doctors relies on long term relationship. 17.94% of the doctors rely on both products and companies brand images and safety record and 7.69% of the doctors rely on companies brand images/safety record and long term relationship.

12. While prescribing the medicine 80.55% of the doctors are concerned about the cost and 5.55% are concerned about cost and availability, 2.77% of the doctors concerned about cost and infections. 2.77% of doctors concerned about availability, safety, affordability and 2.77% of the doctors concerned about allergy and 5.55% of doctors concerned about safety.

CHAPTRE 7

CONCLUSION

CHAPTER 7
CONCLUSION

From this market research project I found that there is no specific brand preference of the doctors. They prescribe the brand which is easily available to the patients. Plasma products are made out of human plasma the human plasma is considered to be critical criteria for the products. Plasma products are expensive so the major issue in prescribing to the patients is cost. Hypersensitivity is the major safety issue which is kept in the mind by the prescriber during prescribing their patients. The consumption of the plasma products is less.

CHAPTER 8

ANNEXURE

CHAPTER 8

ANNEXURE

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.

1) IVIG – 0.5gm, 1gm, 2.5gm, 5gm
2) Hepatitis's B Immunoglobulin 100 IU/200IU
3) Albumin - 20%100ml,5%100ml.LS-20%100 ml
4) Anti D immunoglobulin
5) Anti Rabies Immunoglobulin
6) Factor VII
7) Factor VIII
8) Factor IX
9) Fibrin sealant
10) Factor VIII +VWF
11) Tetanus Hyper Immunoglobulin
12) Anti Thrombin III
13) Fibrinogen
14) Prothrombin complex

6. 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.

7. Any safety issues for these products?

8. Your opinion on the quality of currently available ____________ brands?

a. Highly satisfied b. satisfied c. Not satisfied d. Need improvement

9. Pricing of currently available _________ brands?

a. Expensive, b. Affordable, c. Not Affordable.

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

a. Yes b. No.

11. 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 (   )

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

BLOOD BANKING SERVICES IN INDIA: FACTS AND FICTION

CHAPTER 1

BLOOD BANKS AND BLOOD TRANSFUSION SERVICE

CHAPTER 1

BLOOD BANKS AND BLOOD TRANSFUSION SERVICE

In India, blood collection, storage and issue of blood for transfusion are done mainly in the blood banks attached to hospitals, run mostly by the state and central governments. Voluntary agencies and private blood banks also carry out significant proportions of blood banking activities. There are a total of 2465 licensed blood banks in India. Out of them, about 55% are from public sector, 25% are from non government organizations (NGO), 8% blood banks are managed by Indian Red Cross Society and rest are from corporate and profit making sector.

Though the voluntary donations are increasing (45% in 2002 to 53% in 2008) this is very common in hospital based government and private blood banks leading to all sort of malpractices. Many blood banks show replacement donations as voluntary donations on record. It is difficult to track later.
In India, the ratio of use of blood components to whole blood is 15:85, while globally it is 90:10. This shows how poorly equipped we are. Many blood banks in India still not equipped to make components. They also try to malign the one those who separate components attaching religious values. Most of the blood banks issue whole blood. Even majority doctors prescribe whole blood, without understanding advancement in transfusion medicine. As a result they contribute to shortage of blood in the country and also overburden the patient unnecessarily causing harm at times. Blood Transfusion reactions are common in whole blood transfusions.

A well organised Blood Transfusion Service (BTS) is a vital component of any health care delivery system. An integrated strategy for Blood Safety is required for elimination of transfusion transmitted infections and for provision of safe and adequate blood transfusion services to the people. The main component of an integrated strategy include collection of blood only from voluntary, non-remunerated blood donors, screening for all transfusion transmitted infections and reduction of unnecessary transfusion.

The Blood Transfusion Service in the country is highly decentralised and lacks many vital resources like manpower, adequate infrastructure and financial base. The main issue, which plagues blood banking system in the country, is fragmented management. The standards vary from State to State, cities to cities and centre to centre in the same city. In spite of hospital based system, many large hospitals and nursing homes do not have their own blood banks and this has led to proliferation of stand-alone private blood banks.

The blood component production/availability and utilisation is extremely limited. There is shortage of trained health-care professionals in the field of transfusion medicine.

For quality, safety and efficacy of blood and blood products, well-equipped blood centres with adequate infrastructure and trained manpower is an essential requirement. For effective clinical use of blood, it is necessary to train clinical staff. To attain maximum safety, the requirements of good manufacturing practices and implementation of quality system moving towards total quality management, have posed a challenge to the organisation and management of blood transfusion service.

Advantages of component therapy are:

- the recipient can be treated with only those blood components that are lacking, reducing the occurrence of adverse transfusion reactions;
- more than one patient can be treated with blood components derived from one donation;
- therapeutic support for patients with special transfusion requirements can be provided, for example, plasma that often is not directly needed for transfusion can be used manufacturing of Factor VIII concentrate for Haemophilia A patients;
- Improved quality and functional capacity of each component when varied storage conditions and shelf lives were applied.

CHAPTER 2

ORGANISATION PROFILE

CHAPTER 2

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 pharmaceutical company dealing in protein therapy & plasma products for Indian & global markets. 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.

The following few paras are a brief introduction of its parent company Trigenesis Lifesciences, its history and its business activities.In the history of Indian Pharmaceutical Lifesciences industry , one name is worth a reckon i.e Trigenesis Lifesciences (P) Ltd. It is the dominant and vital arm of RSM group having diversified business areas such as Textile clothing's, Finance consulting and Plastic additives & mouldings along with pharmaceuticals.

In the realm of success, today RSM group earns a standing as one of the top 20 well trounced conglomerate business group of the Indian Inc. with group turnover exceeding Rs 1600 million. RSM pharmaceuticals, the Flag Ship Company of the group struck its roots in the Indian pharmaceutical distribution and marketing industry in 1987 and presently is one of the top 5 distribution houses, employing around 500 people having an annual turnover of Rs. 500 Million. RSM group is built on the sturdy pillars of reliability, sound infrastructure, operational expertise and financial stability.

The success of RSM group in the distribution sector has given a strong footage for Trigenesis Lifesciences (P) Ltd - A business venture destined to the noble cause of social welfare in the emergency and critical care segment.

The Therapeutic Marvels include:

- Biological Plasma products
- Hormonal Therapy
- Recombinant Therapeutics
- Sterile anti infective

- Oncology
- Antibiotics lyophilised
- Anaesthetics
- Endocrinal Steroids
- Cardiovascular drugs
- Nutritional Supplements

CHAPTER 3

OBJECTIVES OF THE STUDY

CHAPTER 3

OBJECTIVES OF THE STUDY

- To evaluate the present scenario of blood banks and find out the gap between the demand and supply of plasma.
- To determine availability of surplus plasma with the blood banks.
- To study the requirement of formation of a consortium between blood bank and plasma fractionation company.

CHAPTER 4

METHODOLOGY

CHAPTER 4

METHODOLOGY

4.1 Research Design

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

4.2 Sampling

- Study area: Ahmedabad, Anand, Vadodara, Surat
- Method: Simple random sampling
- Sample size: 19 Blood banks

4.3 Data collection

- Approach: Quantitative data collection
- Tool: Structured questionnaire
- Method: Survey method
- Technique: face to face interview

4.4 Data Management

Information will be collected on questionnaire itself in field and then will be entered in the database.

- Data Processing: - Manual compilation of the data collected through questionnaire.
- Data entry: - MS word and MS excel spread sheets.
- Data Representation & Analysis: - MS excel will be used for graphical representation and for analyzing the data.

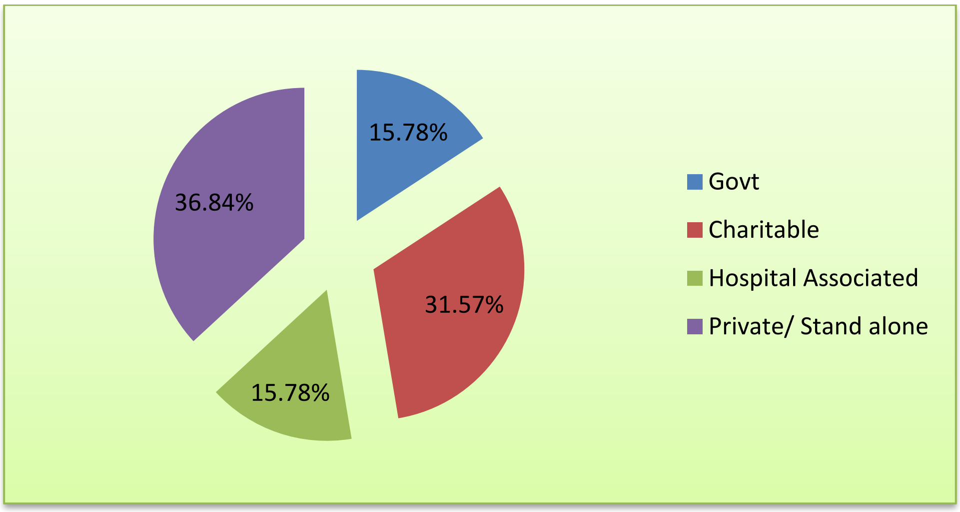
CHAPTER 5

OBSERVATION, ANALYSIS AND INTERPRETATION

CHAPTER 5

OBSERVATION, ANALYSIS AND INTERPRETATION

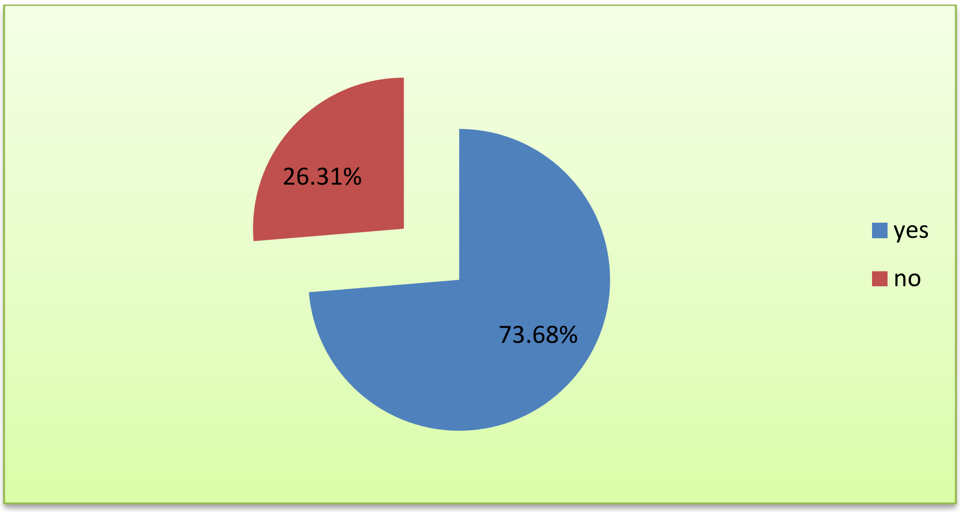
5.1 Nature of blood banks



Sample size- 19   No. of Respondent-19

Interpretation: - In 4 of the cities 36.84% blood banks are private, 31.57% are charitable, 15.78% are hospital associated and 15.78% are government blood banks.

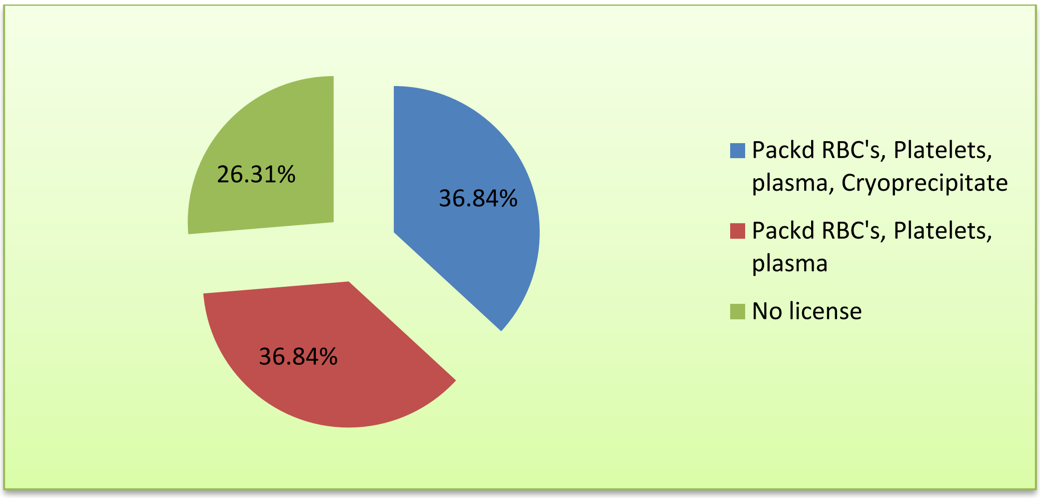
5.2 Blood banks which have permission to conduct blood collection camps



Sample size- 19   No. of Respondent-19

Interpretation: - 73.68% of blood banks having permission to conduct blood collection camps and 26.31% are not having permission to conduct blood collection camps.

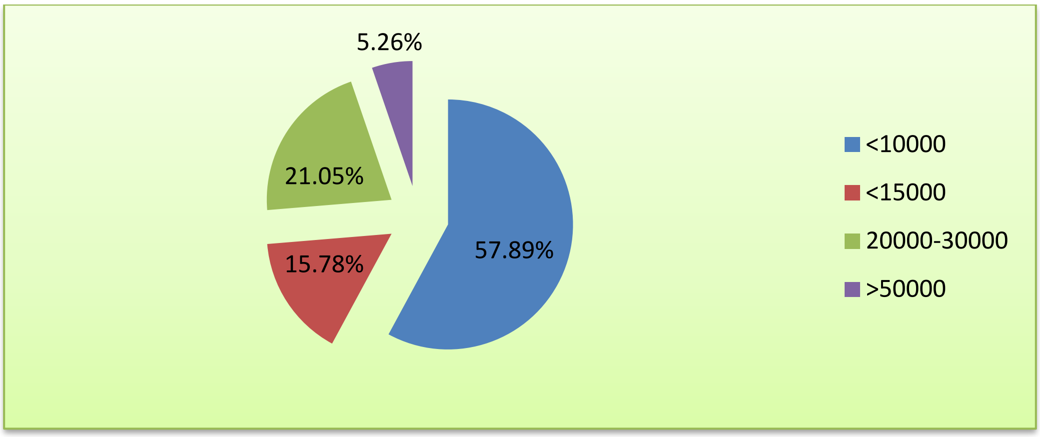
5.3 Blood centres which have license to prepare



Sample size- 19   No. of Respondent-19

Interpretation: - 36.84% of blood banks have license to prepare Packed RBC's, Platelets, plasma, Cryoprecipitate, 36.84% of blood banks have license to prepare Packed RBC's, Platelets, plasma and 26.31% of blood banks have no license of componentization.

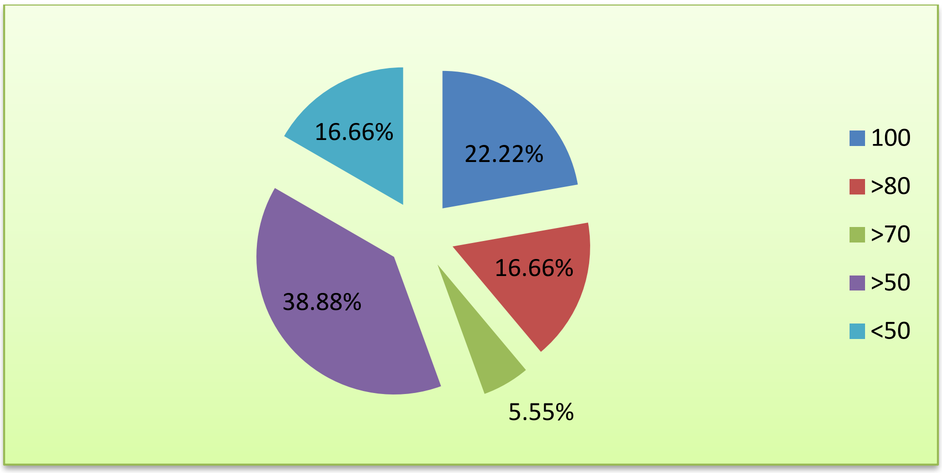
5.4 Total blood collection for the year 2011-2012



Sample size- 19   No. of Respondent-19

Interpretation: - In year 2011-2012 57.89% of blood banks collect <10000 units of blood, 21.05% collect 20000-30000 units of blood, 15.78% collect <15000 units of blood and only 5.26% collect >50000 units of blood.

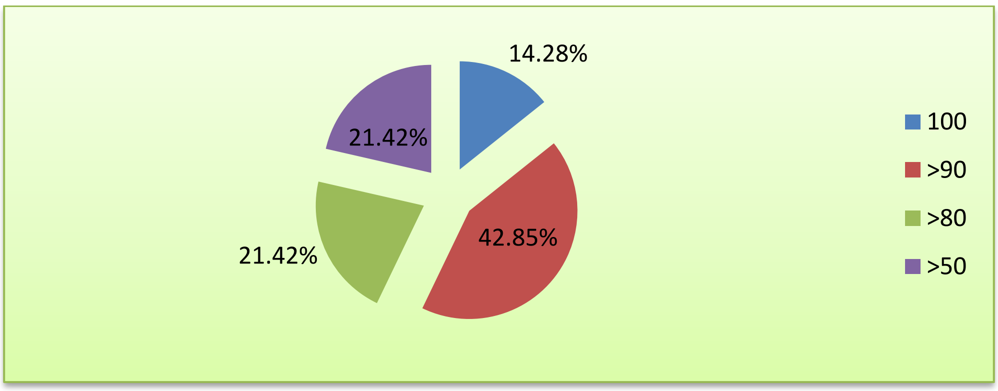
5.5 Voluntary blood collection



Sample size- 19   No. of Respondent-18

Interpretation:- In 22.22% of the blood banks 100% of blood collected through voluntary blood collection, in 38.88% of the blood banks >50%, in 16.66% of the blood banks <50%, in 16.66% of the blood banks >80% and in 5.55% of the blood banks >70% of blood collected through voluntary blood collection.

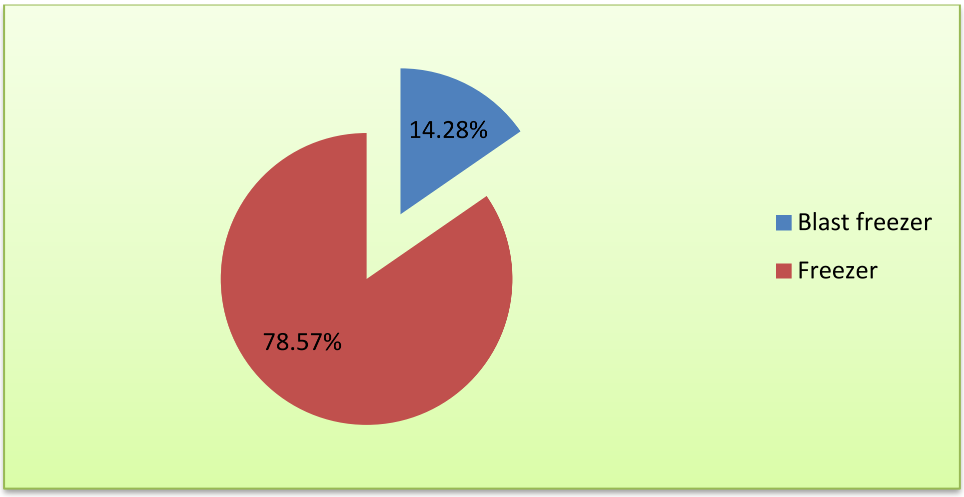
5.6 Blood componentization



Sample size- 19   No. of Respondent-14

Interpretation: - In 14.28%% of the blood banks 100% of blood componentized, in 42.85%% of the blood banks >90%, in 21.42% of the blood banks >80% and in 21.42% of the blood banks >50% of blood componentized.

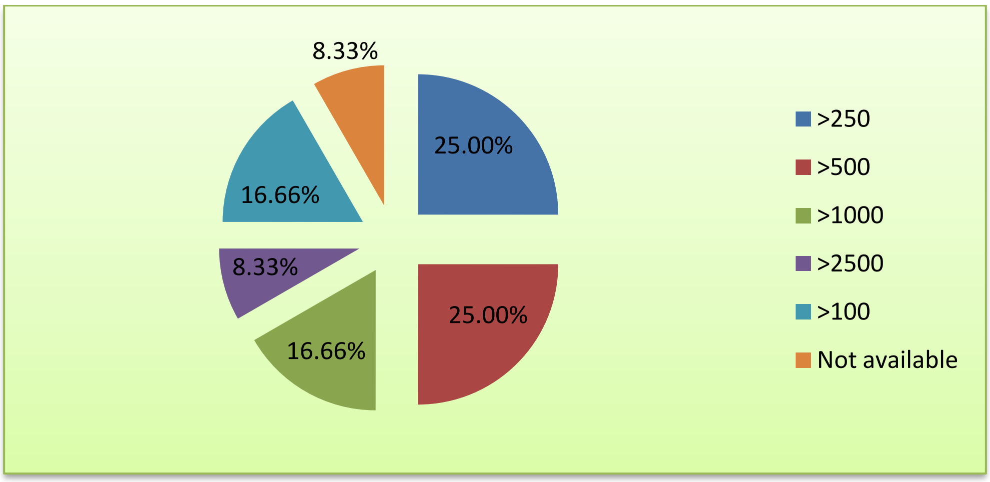
5.7 Storage of plasma



Sample size-14   No. of Respondent-13

Interpretation: - 78.57% 0f blood banks store plasma in freezer and 14.28% of blood banks store plasma in blast freezer.

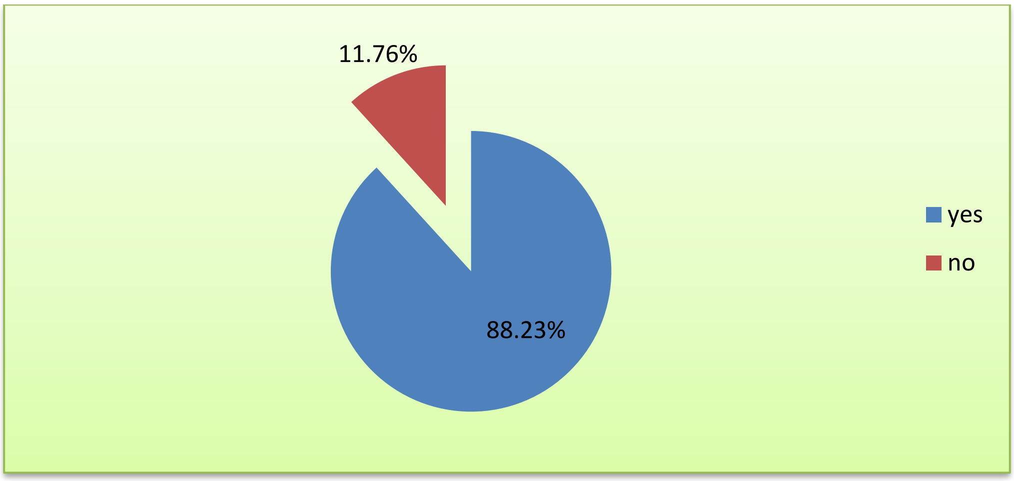
5.8 Average availability of surplus plasma unit



Sample size-14   No. of Respondent-12

Interpretation: - In 25% of blood banks >250 units of surplus plasma available, in 25% blood banks >500 units, in16.66% of blood banks >1000 units, in 8.335 of blood banks >2500 units, in 16.66% of blood banks >100 units and in 8.33% of blood banks no surplus plasma is available.

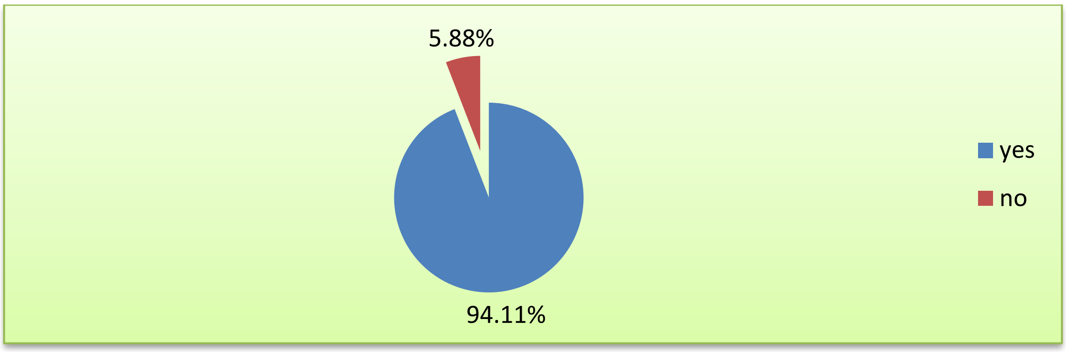
5.9 Forming a consortium between blood banks and plasma fractionation company would help all concern



Sample size-19   No. of Respondent-17

Interpretation: - 88.23% of blood banks said that forming a consortium between blood banks and plasma Fractionation Company would help all concern and 11.76% said no.

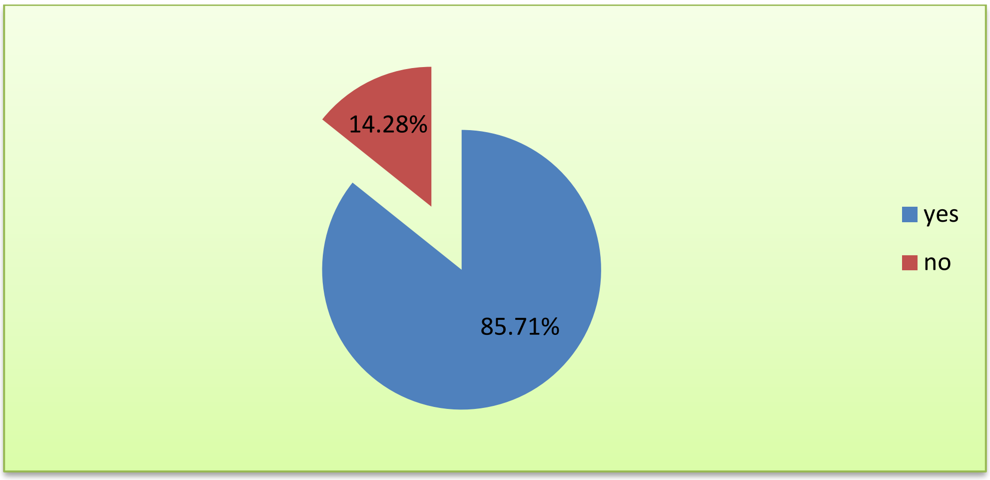
5.10 Surplus plasma available with blood bank can be utilized for fractionation



Sample size-19   No. of Respondent-17

Interpretation: - 94.11% of blood banks agree that Surplus plasma available with blood bank can be utilized for fractionation and 5.88% not agree.

5.11 Blood center like to give plasma for fractionation



Sample size-14   No. of Respondent-14

Interpretation: - 85.71% of blood banks like to give plasma for fractionation and 14.28% of blood banks do not want to give plasma for fractionation.

CHAPTER 6

CONCLUSION

CONCLUSION

91.67% of blood banks in the area under survey have plasma available which can be utilized for fractionation.

As 88.23% blood banks has positively responded for the formation of consortium between blood banks and plasma fractionation company it indicates that surplus plasma is readily available. It indicates that the plasma fractionation market has good potential in coming future.