DONOR MANAGEMENT MANUAL

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DOMAINE project

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English revision
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ISBN
978-90-815585-1-8

Graphic design
www.studioduel.nl

Co-funding
This manual arises from the DOMAINE project, which received co-funding from the European Union, in the framework of the Public Health Programme.

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PREFACE

Dear reader,

Almost 50 blood establishments from 34 European countries have contributed to the manual in front of you, by sharing their information in the 'voluntary, non-remunerated' way, characteristic of the world of blood donation. The manual, therefore, brings together knowledge and experience in blood donor management from all over Europe.

The manual highlights the result of the second of three stages of the European DOnor MAnagement IN Europe project, called DOMAINE. The project is co-funded by the European Commission. The first stage comprised a Europe wide survey on donor management, the results of which are extensively used throughout this manual. The third stage will comprise constructing a training programme on donor management for donor managers. The training programme can be expected to build on this present manual in an organic way.

Blood donor management is the very first of many steps in the blood transfusion chain. Doing things correctly here will facilitate all subsequent parts of the transfusion chain and make blood transfusion therapy safer and cheaper. Doing things incorrectly at this very first step will affect the entire chain, often in an irreparable way.

We are convinced that using this manual will help blood establishments set up or adjust their policies and organisations in ways that will ensure a consistently safe and sufficient blood supply for their many patients.

For that reason, we fully support the DOMAINE participants' wish to be successful in disseminating the knowledge of this manual and in enhancing the management of blood donation throughout Europe.

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President of the European Blood Alliance

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EBA European Blood Alliance

ISBT SITS

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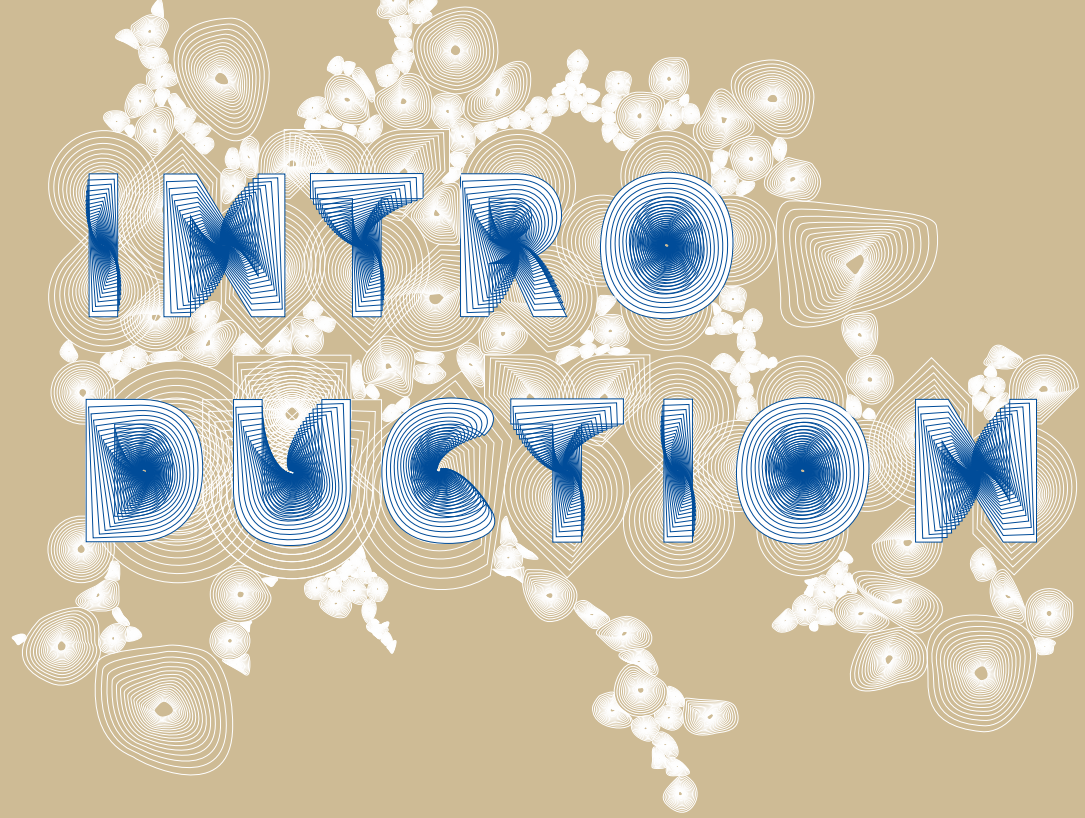

CHAPTER 01

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SECTION 1.1

GENERAL INTRODUCTION

1.1.1 History

Serious attempts to transfuse blood from animals to humans or between humans date back to the 15th, 16th and 17th centuries. One of the first and famous, but badly documented, examples of attempting to transfuse someone with the blood of others is that of Pope Innocentius VIII in 1492. It did not help him, and it did the donors no good either, as Pope Innocentius VIII and all three donating young shepherds died in the transfusion process. All ensuing attempts invariably failed and led to an official ban on transfusions in 1670.

In 1818, James Blundell, a British gynaecologist, was the first physician to try experiment-based blood transfusions from a donor directly into a patient. Only at the beginning of the 20th century, after Karl Landsteiner's discovery of blood groups did blood transfusions gradually become more successful.

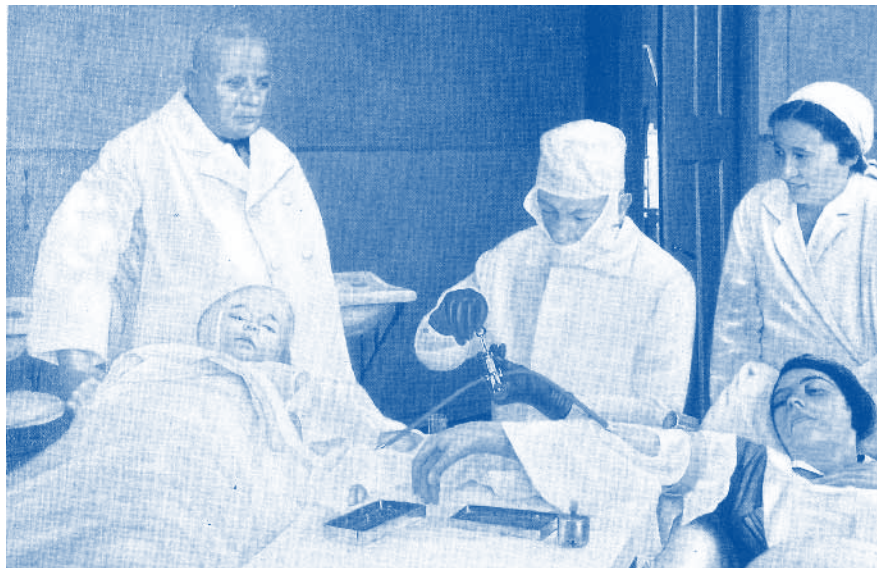

Figure 1. Painting of an early blood transfusion (The Hague, Netherlands, A.C. van der Lee, 1933)

Blood banking: An important aspect of blood banking is the ability to store collected blood units. To that end, the use of anticoagulants, which were developed somewhat earlier, is indispensable.

It was not until the 1940's that Charles Drew set up the first successful blood bank for wounded soldiers at the front lines. After World War II, in many countries, a lot of blood banks were established. Physicians, together with others, more or less successfully managed to set up small scale blood banks, usually in a hospital setting. Sometimes governments took responsibility and organised blood banks on a larger scale. International cooperation on harmonising procedures and product specifications advanced with difficulty.

Initial demands: In the early days of blood transfusion, the demand for blood products was not high and enough donors were available. Apart from detailing their specific blood group, individual donor characteristics were not an issue, and donor eligibility was not a real problem. Those days are now behind us.

Over the last decades many developments have taken place. Today in Europe, only a few countries are not able to supply enough red blood cell units to hospitals [1, 2]. WHO uses the number of 10 red cell concentrates per 1,000 inhabitants per year as a minimum requirement for adequate health care [1]. In 2004, the number of blood collections throughout Europe per 1,000 inhabitants per year was 42 and varied from 3 to 74 [2]. Cultural differences and educational levels are likely factors to explain this variance [3].

Requirements for blood: Various groups of patients benefit from blood transfusions. Their needs arise from trauma, surgery, and blood diseases such as leukaemia, sickle cell anaemia or thalassaemia. Other patient groups, such as patients with haemophilia or immunoglobin deficiencies, benefit from blood derived therapeutic products. Blood establishments throughout Europe now collect over 20,000,000 units of whole blood from 13,000,000 donors per year. Donor eligibility has now become a demanding and crucial factor in the blood transfusion supply chain, due, amongst others, to increasingly strict selection criteria.

European medical practices rely on a safe and sufficient blood supply. Blood establishments are responsible for that supply. To fulfil their duty, they need to maintain a sufficient number of eligible donors. Good Donor Management starts here and is defined as that set of actions that leads to a sufficient and reliable donor base selected from the general population. To achieve that objective, this manual aims to provide guidance for donor managers in blood establishments.

1.1.2 EU guidelines in blood banking

Many blood banking standards have already been established to comply with European rules. However, these European directives deal predominantly with technical and medical matters.

General standards: EU Directive 2002/98/EC [4] sets general standards for the quality and safety of human blood and blood components.

Technical standards: More detailed norms on technical requirements have been laid down in Directive 2004/33/EC [5].

Quality systems: Specifications relating to quality systems are found in Directive 2005/62/EC [6].

Traceability: Details on traceability requirements and notification of serious adverse events and reactions are found in Directive 2005/61/EC [7].

With the directives' technical and medical focus, little guidance is available for the 'soft' side of managing the relationship with donors. Eligibility criteria certainly exist, but there are no rules on how to find or treat donors.

Donors are of paramount importance to the blood supply. In the absence of artificial blood products, there is no alternative to donor blood (products). However, to date, the role of blood donor management across Europe has not been critically evaluated. Only a few effective practices have been identified. Over the last few years there has been a growing need for European cooperation in the field of donor management. Blood donors with different blood types are required as patients, and their diseases, increasingly migrate all over Europe.

1.1.3 DOMAINE

The DOnor MAnagement IN Europe, or DOMAINE Project has been set up to provide the guidance needed in donor management. Blood establishments from 18 European countries [8], the Thalassaemia International Federation and a representative from the South-eastern Europe Health Network joined forces in DOMAINE. The project has received co-funding from the European Union in the framework of the Public Health Work Programme [9].

Mission statement: DOMAINE's general objective is to help to create a safe and sufficient blood supply, by comparing and recommending good donor management practice.

DOMAINE survey: In 2008, DOMAINE began to survey current blood donor management practices in European blood establishments. The insights derived from this study have been used extensively to develop the current DOMAINE Donor Management Manual.

The manual is advisory rather than mandatory. The authors realise that in donor management there is no general 'best practice'. However, good elements in donor management do exist. Like the ingredients of a recipe, put together in the right order and in the right amounts, they result in a delicious meal. Otherwise, the result is a meal that no one will eat.

What is more, in order to meet the local taste, adding local flavour to the recipe is essential. The same goes for the manual. Local circumstances must be taken into account when compiling the elements of good practice of donor management. Cultural, organisational and budgetary differences always involve 'local flavour' to get the proper effect.

Notwithstanding these differences, European blood establishments share basic principles. The first and by far the most important feature of donor management is that we are dealing with people whose autonomy and individual rights must be respected. Donors give their valuable blood and, in return, the only thing we give them is a 'good feeling' with the knowledge that they are contributing to the overall welfare of their fellow citizens.

1.1.4 DOMAINE and other European projects

Several organisations in blood transfusion throughout Europe have joined forces in projects that are co-funded by the European Union. Three of these projects are related to DOMAINE, but focus on different parts of the blood transfusion chain.

1. The EU-Q-Blood-SOP Project that ended in 2008 has formulated a set of SOPs to be used in blood banking. The project developed a pan-European standard operating procedure (SOP) methodology reflecting European best practice within the area addressing the quality and safety of blood. It had the following core activities [10].

- Assessing the existence of SOP manuals and guidelines currently used in the 16 blood services involved in the project in order to identify (A) international and national SOP manuals already in place and (B) the current inspection practice
- Developing a manual to assist blood establishments to develop and implement their own SOPs
- Testing this new SOP methodology among the partner institutions
- Producing this manual in five languages and distributing it to the participating blood establishments

2. The European Blood Inspection Project (EuBIS, 2008-2010) is developing and implementing commonly accepted criteria and standards to ensure equivalent recognition of inspection of blood establishments among EU Member States. It will deliver this through the development of a manual that will define the following [11].

- Common criteria and standards for the inspection of blood establishments
- Requirements for the implementation or expansion of quality management systems to be inspected
- The development of inspection checklists which closely follow Directive 2002/98/EC and its technical annexes
- Evaluation criteria for inspections and a benchmark system for deviations and improvements

3. The EU Optimal Blood Use Project (EUOBUP, 2007-2010) intends to develop a pan-European standard for optimal blood use. It shares best practice on training in optimal use of blood components by developing and sharing a toolkit that can be used by a partnership of staff in blood establishments, hospital blood banks and hospitals' therapeutic departments, for the benefit of patients. Also, it will provide a network of benchmarking on blood use in European hospitals. This project will seek to identify good practice and start the development of a European quality management system for the therapeutic use of blood components, through the following steps [12].

- Surveying the current situation in participating states in order to identify variations across Europe in blood usage, adverse effects, therapeutic practices and training
- Developing a toolkit in the form of a manual that will facilitate best practice implementation across Europe, raising awareness and training of health care staff about the use of blood components
- Developing a project website that will facilitate the sharing of best practice, the provision of a critically reviewed evidence base for optimal transfusion practice

SECTION 1.2

STRUCTURE OF THE MANUAL

1.2.1 The importance of a donor management manual

The process of donor management involves many factors that blood establishments should take into account in order to provide the right number and types of blood products needed for transfusion. These aspects include the following.

- Development and usage of donor recruitment strategies
- Organisation of blood donor sessions
- Development and usage of retention strategies
- Blood donor data management
- Donor counselling and donor care

Simply summing up and describing these activities may be interesting, but will have little practical effect. Personnel, equipment, housing, ICT, quality systems and finances must also be included and considered and this Donor Management Manual provides such an opportunity.

The DOMAINE project surveyed blood donor establishments throughout Europe, analysing their organisation and practices and identifying the strengths and weaknesses of the various systems (see Chapter 2). For historical, cultural, political and other reasons, European blood donor management practices vary widely. No clear conclusions regarding best practices that would apply universally can be reached. However, this manual does contain information on practices that have proven to be effective.

The authors hope and expect that this information will be helpful for organising and improving important donor management activities in the following ways.

- **Encourage** organisations to evaluate critically their processes and procedures
- **Share** information and suggestions from European donor management units
- **Support** units in developing their existing structures
- **Learn** from and communicate more widely innovative practices developed throughout Europe
- **Suggest** ways to enhance the performance of their organisations
- **Anticipate** future challenges that may arise within specific cultural contexts

1.2.2 DOMAINE training programme

Complementary to the Manual, the DOMAINE project will develop a training programme in order to disseminate the information to blood establishments in all European countries. As local circumstances of donor management vary from country to country and from region to region, this training programme will offer possibilities for adaptation to the local situation. The training programme will be available by mid-2011.

1.2.3 Manual set-up

This Donor Management Manual contains three parts: general aspects, donor management in practice, and supporting issues. Each part is divided into chapters, describing various aspects of donor management.

Part 1. General aspects

2. **Survey results.** An abstract which highlights several findings of the 2008 DOMAINE survey on current blood donor management practices throughout Europe.

3. **Architecture and infrastructure** of blood establishments, including organisational structures, financial aspects and performance indices.

4. **Donor base.** Data Management has become more and more important in the entire donor management process where a transparent data base and good use of the data is crucial.

Part 2. Donor Management in practice

5. **Donor recruitment**, including strategies and practical aspects. Analogous to the marketing approach of general economics, this chapter presents a marketing system, applicable in both donor recruitment and donor retention.

6. **Donor retention.** Using the same marketing principles as in Chapter 5, this chapter discusses the important aspect of how to retain donors.

7. **Collection** including organisation of collections, invitations, donor selection and donor deferral management.

8. **Adverse events and reactions** which can take place in the donor management process. This chapter gives advice for establishing donor counselling services.

9. **Multiple-transfused patients.** A rising phenomenon in the world of blood transfusion is patients' need of many transfusions over a prolonged period of time.

10. **Special situations -** donor management in disaster situations and dealing with the media.

Part 3. Supporting issues

11. **Human resources management,** including qualification requirements and training aspects.

12. **Information technology.** Basic aspects of donor and donation data management, and technical issues on hardware and software are discussed in this chapter.

13. **Ethical considerations** in donor management, both general and specific in nature and including ethico-legal issues.

Appendices: EU Commission Directives and useful websites.

References

1 The WHO standard indicating levels of sufficient blood supply to hospitals for basic needs lies at 10 red blood cell units per 1,000 inhabitants. Source: World Health Organisation (2009) *Global blood safety and availability. Facts and figures from the 2007 Blood Safety Survey.* Retrieved March 17 2010 from http://www.who.int/mediace ntre/factsheets/fs279/en/index.html

2 Van der Poel CL, Janssen MP & Borkent-Raven B (2007). *Report on the collection, testing and use of blood and blood components in Europe in 2004*. Council of Europe, European Committee (Partial Agreement) on Blood Transfusion

3 Kort de W, Wagenmans E, Dongen van A, Slotboom Y, Hofstede G & Veldhuizen I (2010). Blood collection and supply: just a matter of money? *Vox Sanguinis, 98*(3), e201-e208. doi: 10.1111/j.1423-0410.2009.01297.x

4 Directive 2002/98/EC of the European Parliament and of the Council of 27 January 2003 setting standards of quality and safety for the collection, testing, processing, storage and distribution of human blood and blood components and amending Directive 2001/83/EC. Official Journal of the European Union, L33, 8/02/2003, p.30

5 Commission Directive 2004/33/EC of 22 March 2004 implementing Directive 2002/98/EC of the European Parliament and of the Council as regards certain technical requirements for blood and blood components. Official Journal of the European Union, L91, 30/03/2004, p.25

6 Commission Directive 2005/62/EC of 30 September 2005 implementing Directive 2002/98/EC of the European Parliament and of the Council as regards Community standards and specifications relating to a quality system for blood establishments

7 Commission Directive 2005/61/EC of 30 September 2005 implementing Directive 2002/98/EC of the European Parliament and of the Council as regards traceability requirements and notification of serious adverse reactions and events. Official Journal of the European Union, L256, 1/10/2005, p.32

8 Austria, Belgium, Cyprus, England, Estonia, Finland, France, Germany, Hungary, Ireland, the Netherlands, Northern Ireland, Malta, Portugal, Scotland, Slovenia, Switzerland and Wales

9 Public Health Work Programme 2007, action 2.1.2.4 Safety of blood, tissues and cells, organs, which promotes the quality, safety and availability of substances of human origins (blood) used for therapeutic purposes associated with their collection, processing, distribution and use

10 Retrieved March 17 2010 from www.eu-q-blood-sop.de/pages/objectives.php

11 Retrieved March 17 2010 from www.eubis-europe.eu/objectives.php

12 Retrieved January 26 2010 from www.betterblood.org.uk/EUOptimalBloodUse Project/ReasonfortheProject/ObjectivesoftheProject/tabid/110/Default.aspx

DOMAINE SURVEY ON DONOR MANAGEMENT IN EUROPE

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CHAPTER 02

SECTION 2.1

DOMAINE SURVEY ON DONOR MANAGEMENT IN EUROPE

2.1.1 Introduction

The DOMAINE project surveyed current blood donor management practices throughout Europe in 2007. European blood establishments were asked to provide information on their donor management practices. Many of the results have been incorporated throughout the chapters of this manual. This section describes the methodology used and gives a synopsis of the important results.

2.1.2 Content of the questionnaire

The DOMAINE project developed a questionnaire in order to gain information on various topics in donor management. At the outset, topics such as donor recruitment and retention strategies, deferral procedures and blood bank policy regarding patients requiring long-term transfusion were to be included. The questionnaire also addressed issues pertaining to blood donor characteristics and the composition of the donor population with respect to age and the number of donations.

For constructing the questionnaire, several perspectives were sought from various stakeholders:

- **Blood establishments:** Personal interviews with professionals from several European blood establishments were carried out. The interviews served to gather information and ideas on a more general level on the specific topics of donor management to be included
- **Blood donors:** To ascertain the blood donor perspective, a representative of the International Federation of Blood Donor Organisations (IFBDO) was interviewed as well. The topics were also discussed with the Dutch Donor Association
- **Blood recipients:** Opinions on blood establishments in relation to the blood recipients were gathered by face-to-face interviews with representatives of the Thalassaemia International Federation

The information gathered in the interviews served to construct a list of items pointing to similarities and differences in donor management. These items were then used to design the DOMAINE questionnaire which contained questions on topics mentioned in Table 1.

Table 1. List of topics addressed in the DOMAINE questionnaire

Organisation	Aspects related to the blood establishment organisation (including associations with the Red Cross, presence of donor associations, staff and quality assurance related aspects, certification)
Donor population	Description of the donor population: numbers and kind of donors, and numbers and kind of donations
Processes	Aspects related to the donation process (including the number of collection locations, opening times of blood sessions, percentages of whole blood collected during weekdays and the weekend, non-remuneration, eligibility, medical screening, invitation methods)
Donor recruitment	Aspects related to donor recruitment (including recruitment criteria, factors making recruitment more difficult, recruitment methods and activities, motives for becoming a donor addressed in the various recruitment campaigns, information materials)
Donor retention	Different features of donor retention (including retention practices, donor retention strategies targeting specific donor groups, expressions of gratitude rewarded to the donor, waiting times, donor complaint procedures, most common complaint issues, donor satisfaction)
Donor deferral	Aspects of donor deferral (including deferral criteria and deferral policies, temporary and permanent deferrals, total deferral rate, donor counselling, available information for donors on deferral)
Patients	Aspects related to donor management for patients with special transfusion needs (including strategies for this type of donor management, patients groups involved, donor panels, information for donors about special blood needs, special recruitment procedures)

2.1.3 Logistics and time frame of the DOMAINE Survey

In October 2008, the finalised version of the DOMAINE questionnaire was sent to 48 blood establishments in the 34 European countries represented in the European Committee on Blood Transfusion (CD-P-TS, Council of Europe). For DOMAINE, the United Kingdom was divided into Scotland, Northern Ireland, Wales and England. The number of European countries addressed, totalled 37. Not all countries were EU member states.

In countries participating in the DOMAINE project, the questionnaire was completed by the DOMAINE member and, if applicable, by other blood establishments responsible for an important part of the country's blood supply. In countries not represented in DOMAINE, the questionnaire was sent to the delegate of the European Committee on Blood Transfusion, with a request to complete it themselves and to distribute it to other blood establishments, if they were responsible for an important part of the national blood supply.

Response

Out of the 48 questionnaires sent out, 42 questionnaires were completed and returned, a response rate of 87.5% (42/48). Out of the 37 countries included in the survey, completed questionnaires were received from 35 different countries, a response rate of 94.6% (35/37).

After an iterative process of commenting and a plenary discussion with all the DOMAINE participants, the DOMAINE team finalised the survey report in June 2009.

SECTION 2.2

SURVEY RESULTS

2.2.1 Introduction

The DOMAINE survey report contains all survey data and a descriptive analysis of this data. The structure of the report follows the list of topics mentioned in Table 1 in the previous section. This section highlights the most important results. For reasons of confidentiality, data shows no names of countries or blood establishments. Appropriate parts of this section reappear in the other chapters, supplemented there with extra, more detailed results.

2.2.2 Organisation

All the organisations that returned the questionnaire were non-commercial organisations. Remarkably, twenty percent of the respondents reported the presence of a commercial blood establishment in their country. More than half of all respondents were governmental (state) public bodies. Other respondents were either hospital-based blood establishments or non-governmental, not-for-profit organisations (see Figure 1). More than 80% of the organisations were independent. Other organisations were part of a larger organisation such as the Red Cross or a hospital. Nearly 60% of the organisations had a connection with the Red Cross. These organisations were either Red Cross organisations themselves or cooperate with the Red Cross. In the latter case, often Red Cross departments were responsible for donor recruitment or donor retention activities, or the Red Cross provides volunteers for recruitment and blood collection activities. Chapter 3 deals organisational aspects in more detail.

More than half of the countries had donor associations, either at a local level (17%), a national level (17%) or at both a local and a national level (26%). For the most part, these donor associations promoted blood sessions and were involved in donor recruitment and retention activities.

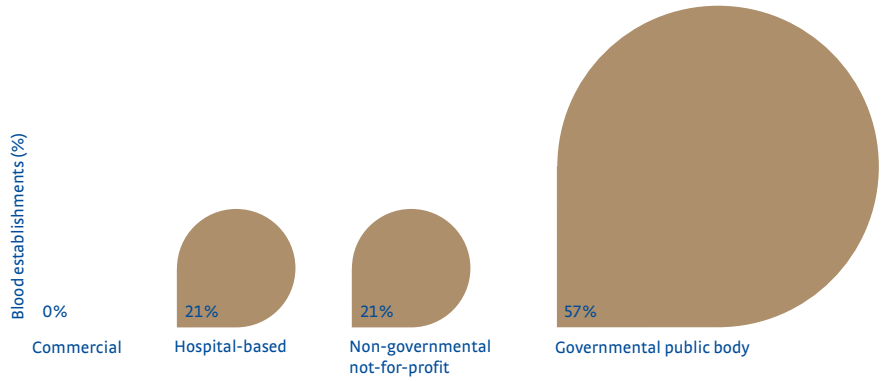

Figure 1. Type of organisation (42 responding blood establishments)

2.2.3 Donor population

As it was difficult to extract reliable data concerning the donor population from data processing systems, only approximately 50% of the respondents were able to provide data on the composition of the donor population. The responding blood establishments reported that the mean age of male donors was 38.3 years, whereas the mean age of female donors was 37.4 years. The average number of donations per donor in 2007 was 1.6 including first time donors and 1.9 excluding first time donors. The composition of the donor population in terms of donor types varied considerably between countries. Figure 2 shows an anonymised example of the proportions of types of donors in the donor population. Furthermore, survey data showed that many blood establishments got most of their donations from donors who made a small number of donations in their lifetimes: one to five donations. Only a few blood establishments had a high percentage of donors making many life-time donations. A more comprehensive description of the donor base is discussed in Chapter 4.

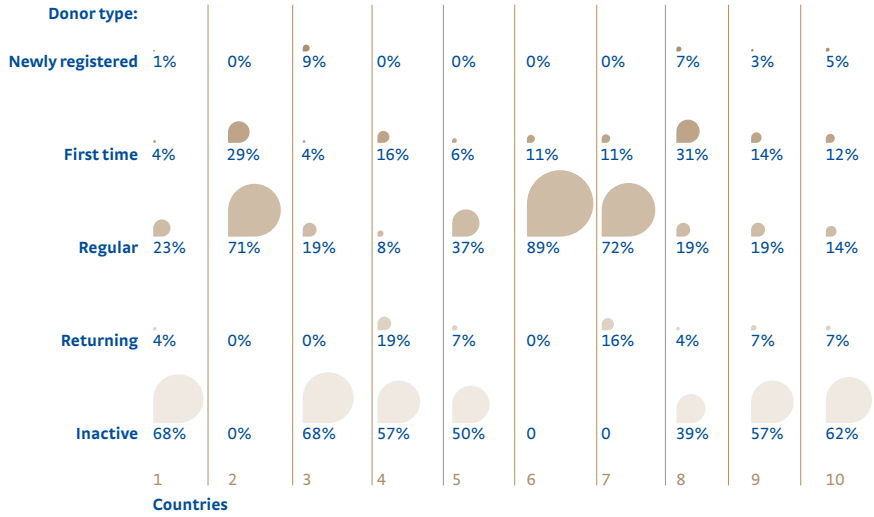

Figure 2. Example of proportions of donor type in donor populations

2.2.4 Processes

Invitation methods: Letters and telephone calls were the most frequently used personal methods to invite a donor for donation. Email and SMS messages were less often used. More general ways of inviting donors were notifications by (local) media, used by more than 75% of blood establishments. In more than 80% of cases donors were allowed to walk in for donation without having received a notification. Invitation of donors is one of the topics in Chapter 5.

Collection venues: Blood establishments collected blood in three kinds of collection venues: fixed sites, mobile sites and mobile vehicle sites (see glossary for definitions). Fixed sites comprised on average 1.5% of all collection locations; mobile sites, on average 85% and mobile vehicle sites, 13.5% of all collection locations. All blood establishments had blood sessions on weekdays. On the weekend, 55% of the responding blood establishments offered blood sessions. More details on venues can be found in Chapter 7.

Medical screening: In 45% of the responding blood establishments the medical screening for a first time donor differed from the screening of regular donors. The majority of them used an extended and more detailed questionnaire (see Section 7.5).

Red cell stock: For 44% of the responding blood establishments, their red cell stock was perceived sufficient for 365 days per year. The remaining 56% did not perceive themselves to have a sufficient stock 365 days a year, with insufficient stock days ranging from 5 to 130.

Remuneration and compensation: Figure 3 shows the percentages of European blood establishments that did or did not remunerate their donors for their donation. Figure 4 illustrates the kind compensation (other than remuneration) that donors received for time or expenses. Remuneration and compensation are also topics of Chapter 13.

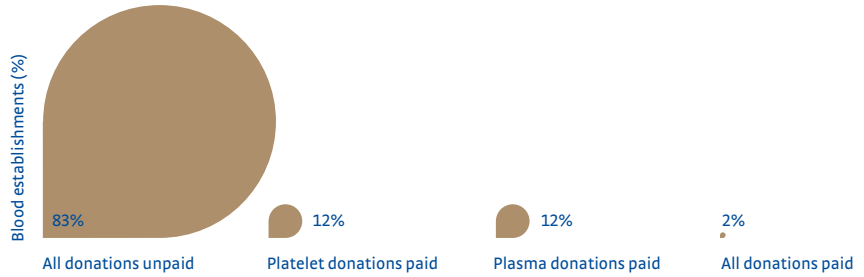

Figure 3. Remuneration of donations to the donor (41 responding blood establishments)

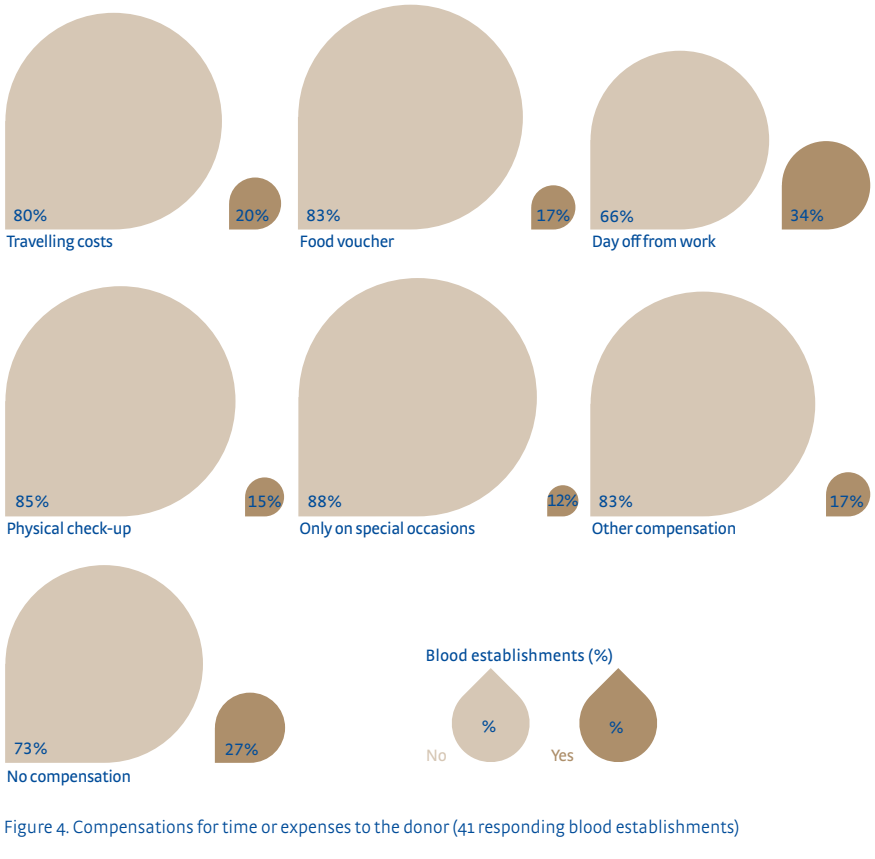

Figure 4. Compensations for time or expenses to the donor (41 responding blood establishments)

2.2.5 Donor recruitment

The survey showed that the most effective donor recruitment methods were not necessarily the methods most often used. Donor recruitment methods reported as being most effective were national commercials on radio and TV, donor-recruits-donor campaigns, local radio and TV commercials, advertisements in newspapers and recruitment in large companies. However, donor recruitment methods used most often were websites, leaflets, recruitment in large companies, local commercials on radio and TV and awareness programmes in schools. More than half of the blood establishments targeted their donor recruitment at special groups, such as young donors, ethnic minorities or persons with a specific blood group.

Chapter 5 discusses the various aspects of recruitment in more detail.

2.2.6 Donor retention

Donor retention rates varied considerably across the EU. As a way to retain donors, all blood establishments offered expressions of gratitude to the donor, ranging from thank-you letters and ceremonies, to medals, medical check-ups and small gifts.

Retention methods that were indicated as most effective were phone calls to the donor and direct, personal donor contact.

A high show rate during blood sessions was considered beneficial to ensure a sustainable blood supply. Where donors did not show up when invited, almost 70% of the blood establishments undertook action, predominantly by sending a second invitation or making a phone call to the no-show donor (see Figure 5).

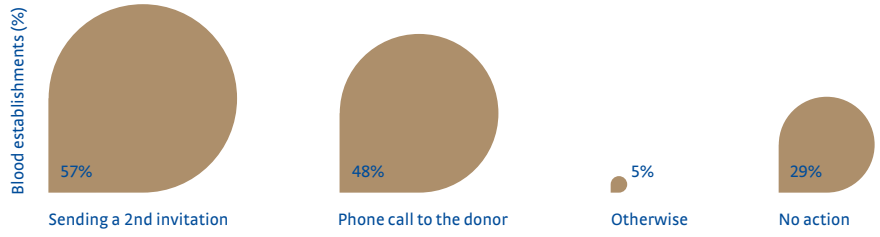

Figure 5. Actions taken in case a donor does not show up when invited (41 responding blood establishments)

Donor retention had a strong link with donor satisfaction. The latter was monitored by 76% of blood establishments. The most frequent donor complaints in European blood establishments concerned waiting times being too long. Other common complaints focused on logistical problems at the blood centre: opening hours, parking facilities and locations.

Chapter 6 discusses donor retention aspects in more detail.

2.2.7 Donor deferral

In European blood establishments, the total deferral rate (percentage of all attending donors deferred temporarily or permanently) varied from 6% to 28%. Most blood establishments (86%) provided their donors with information on the deferral period, i.e. the date when they were eligible to donate again. Also, most blood establishments (93%) had specified processes for the management of the deferral process, most often laid down in SOPs (86%) and/or algorithms, decision trees or flow charts.

Most blood establishments had special programmes to encourage the return of deferred donors. Most widely used methods were both on-session encouragement to return for a next donation (45%) and the routine invitation a donor automatically receives, either by regular mail (45%), phone (19%) or email (12%). About a quarter of the blood establishments had specific programmes for donors deferred due to their low haemoglobin levels.

Section 7.6 discusses donor deferral in more detail.

2.2.8 Donor management for patients with special transfusion needs

More than half of the blood establishments had a special policy or strategy for donor management of patients with special transfusion needs, ranging from registrations of rare blood typing to special donor panels. About 30% had special recruitment procedures for donors. Various patient groups were involved, such as thalassaemia, leukaemia, neonatals, myelodysplastic syndrome patients and stem cell transplantations.

Chapter 9 discusses in more detail the special situation of patients with different needs for blood transfusion.

Note

This chapter and the chapters to follow quote several parts of the DOMAINE survey report, written in 2009. Confidentiality of the results did not allow publication of the full report.

ARCHITECTURE AND INFRASTRUCTURE

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CHAPTER 03

SECTION 3.1

ORGANISATION OF BLOOD ESTABLISHMENTS

3.1.1 Organisational structure

The collection and processing of blood products is heavily regulated, but there is no law, directive or rule on how to organise blood establishments. In some countries laws exist that prescribe who or which establishment should collect and process blood products. And today indeed, not surprisingly, blood establishments in Europe vary widely in the way they are organised. The DOMAINE survey on donor management in Europe (see Chapter 2) has established that there are 12 European countries that have one single type of blood establishment. Three countries have only hospital based blood establishments. Nine countries have nationwide organisations, organised in several forms.

- Five countries have one governmental blood establishment
- Three countries have one national Red Cross blood establishment
- One country has one national, independent blood establishment

In all the other 25 countries that responded, any organisational combination of the aforementioned types of establishments occurs. The extreme diversity of organisations observed is probably even wider, as the organisational unit within the different organisations could be further divided into additional geographic levels: national, regional or local. In addition, recruitment of donors, collection of blood and processing of blood into components may each be carried out by separate organisations, as is actually the case in a limited number of countries. Many times the efforts of volunteers, either individually or through volunteer organisations such as the Red Cross Society have proved to be invaluable.

This manual gives no general recommendation on how to organise a blood establishment. There simply is no 'best practice' at hand. The way health care is organised, or even political relations may determine the best possible way to organise the blood supply in a particular environment. The remainder of this chapter deals with managerial aspects of blood establishments. Correlating the managerial aspects with the local situation will help a blood establishment to function properly.

SECTION 3.2

PROCESS STEPS IN DONOR MANAGEMENT

3.2.1 Introduction

Donor management for collecting blood products is a chain process. Each step in this chain represents a set of actions to be taken in order to finally get the required amount of suitable blood products. Since this manual deals with donor management, this section starts with recruiting donors and it will stop where donor management stops: when the blood establishment has taken blood products (whole blood, aphaeresis products/blood components, test tubes) from donors and has supplied these to the (blood establishment's) processing units. This section will also pay attention to the after care of donors, but will not include information on the testing for infectious diseases and blood component processing outside the collection department.

This section describes the discrete steps in donor management. It serves as a basis for section 3.3, which includes a brief overview of cost items in each donor management step and section 3.4, which goes into more detail on the cost centres of the processes: what cost items can be identified in each donor management step, and what are the consequences of this accounting for a blood establishment's budget? Section 3.5 discusses practical consequences of competition in donor management.

3.2.2 Donor management in five steps

Donor management distinguishes five steps in its chain. Each step represents a distinct set of actions for blood establishments. The figures in this section depict the steps in relation to their effect on the donor base. The donor base comprises the pool of all registered donors on which the blood establishments rely for the blood supply. Throughout this section, several notions on donor management and donor types occur. In Chapter 4 the definitions of the terms used here are discussed into more detail. The steps discussed are as follows.

- Recruitment
- Invitation
- Donor Selection
- Donation Procedures
- Donor Retention

3.2.3 Step 1 Recruitment

Recruitment involves the necessary set of actions that help people to become blood donors. Not everybody in the general population (**a** in Figure 1) is willing to become a donor. Characteristically, part of the general population is willing to become a donor, and this subpopulation is named prospective donors (**b** in Figure 1). The number of prospective donors that exist in the general population is usually unknown. One part of the recruitment step is to enlarge blood donorship awareness among such prospective donors through general, non-individual actions. Another part of recruitment typically involves both individual and non-individual actions that should get prospective donors to actually become donors. Chapter 5 deals with the recruitment process in more detail.

An important aspect in donor management is registration of donors in a donor data base. Typically, the registration of donors is a back office activity. Some blood establishments first register recruited donors and invite them afterwards for their first donation. In many countries, however, both registration of donors and their first donation takes place during their first visit. Where prospective donors themselves contact a blood establishment in their neighbourhood, they may be registered directly as donors. Either way, adding donors to the donor data base changes (increases) the set of registered donors (**c** in Figure 1). As will be explained in Chapter 4, several types of donors are included in this donor data base, such as newly registered donors, first time donors, regular donors, returning donors and inactive donors. The stopped donors refer to people who have been part of the donor base, but have been removed therefrom, for example, because they are no longer eligible to donate. Registration is an ongoing process, necessary to have an accurate and up-to-date understanding of the composition of the donor base.

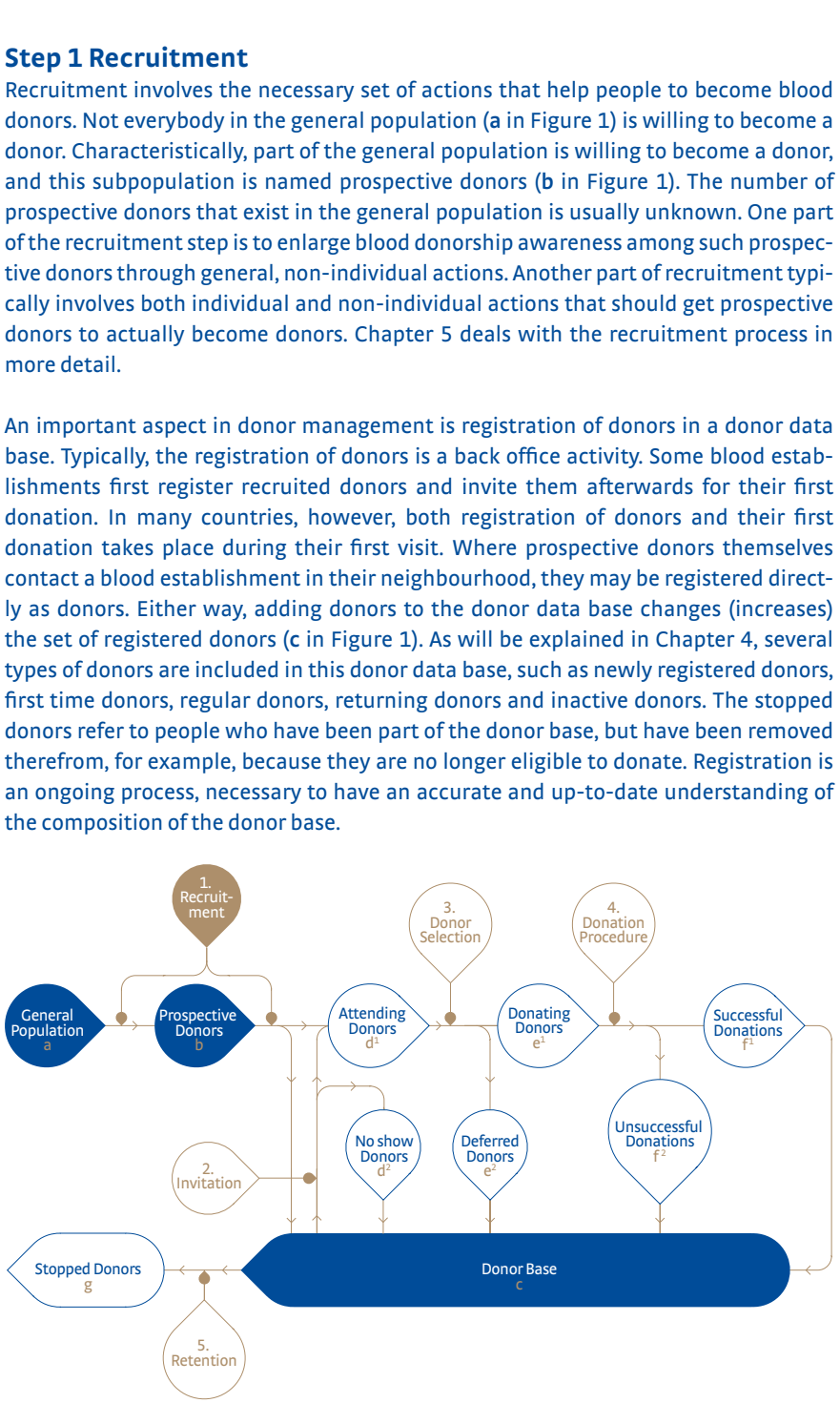

Figure 1. The first step in donor management, Recruitment in relation to the subpopulations onto which it exerts its effect.

3.2.4 Step 2 Invitation

Invitations to donors can be either personal or general in nature. The number of personally invited donors is a known quantity in contrast to the number of donors invited in a more general way, such as through advertisement or via the local radio. In this manual, the population of invited donors covers both personally and generally invited donors. In addition, uninvited, spontaneously visiting donors, including prospective donors, are a well known phenomenon almost everywhere, see Step 1, Recruitment.

All people visiting a collection centre are called attending donors (**d1** in Figure 2). This group of people includes those who visit the collection centre spontaneously and are registered as donors on the spot. On the other hand, not all those who are invited will show up, resulting in the population of no-show donors (**d2** in Figure 2).

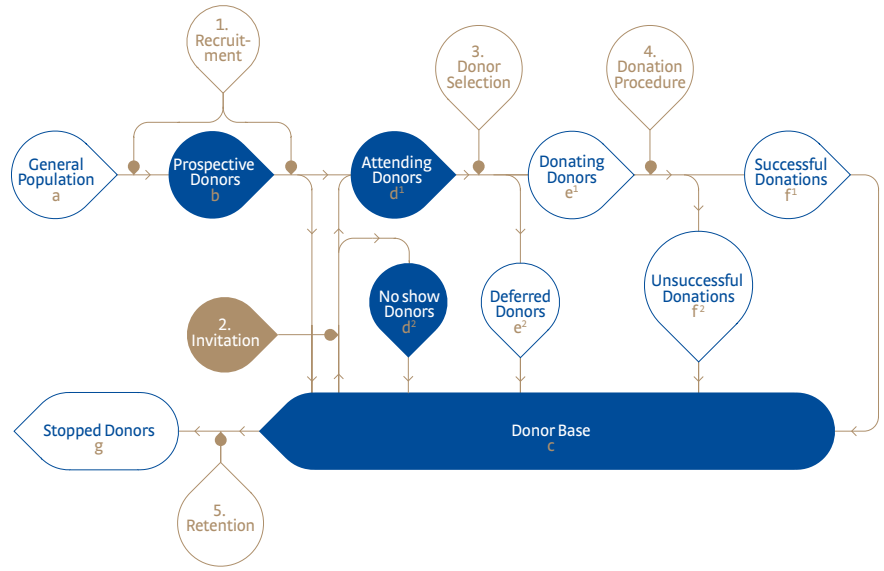

Figure 2. The second step in donor management: Invitation in relation to the subpopulations onto which it exerts its effect.

3.2.5 Step 3 Donor Selection

Assessing a donor's eligibility to donate, or donor selection, is an important step in donor management. The process of donor selection is dealt with in more detail in Sections 7.5 and 7.6. It includes the assessment of risky behaviour and disease occurrences, performing biometrics and taking blood samples for screening purposes. However, this manual focuses on the procedural aspects of the donor selection process and does not discuss the required content or criteria of the health assessment. All those attending donors who pass this phase successfully will belong to the population of donating donors (**e1** in Figure 3). The donor selection may lead to deferral resulting into the population of deferred donors (**e2** in Figure 3).

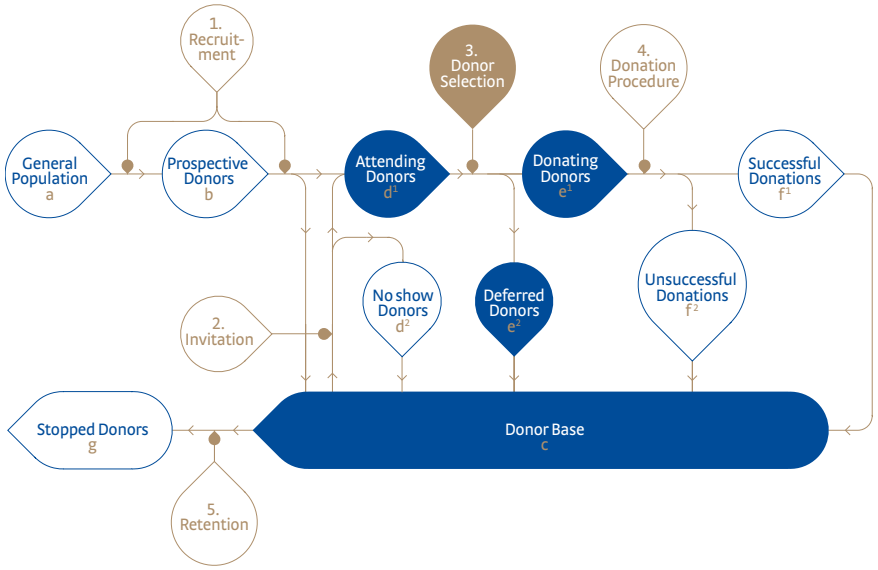

Figure 3. The third step in donor management: Health Assessment in relation to the subpopulations onto which it exerts its effect.

3.2.6 Step 4 Donation Procedure

Donation procedures, Step 4, will produce blood products. The number of donors with successful donating procedures is **f1**. In contrast, a part of the donating procedures (**f2** in Figure 4) are not successful. Unsuccessful venepuncture, insufficient blood flow or fainting of the donor are all examples of unsuccessful donation procedures.

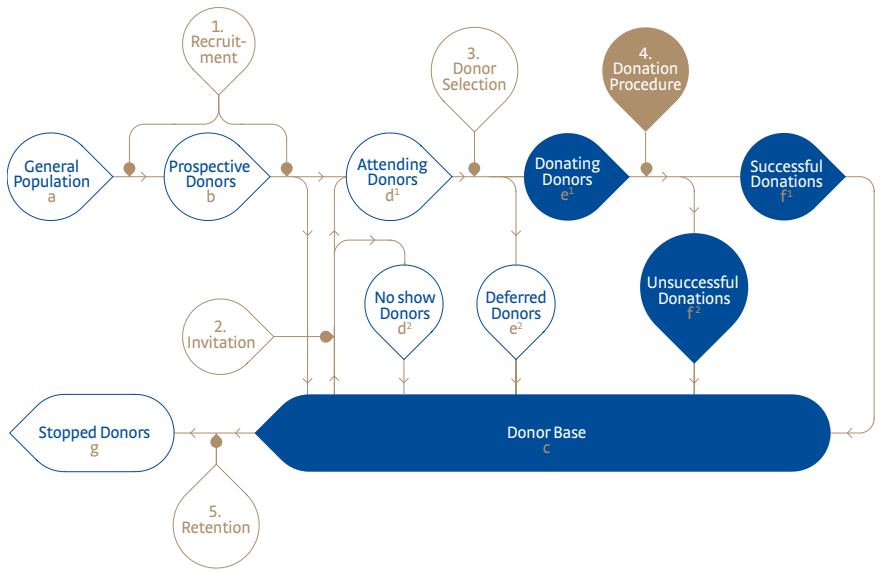

Figure 4. The fourth step in donor management: Donation Procedure in relation to the subpopulations onto which it exerts its effect.

3.2.7 Step 5, Donor Retention

The fifth and final, sometimes underappreciated step in the donor management chain is called retention. The aim of this action is to minimize the population of stopped donors (**g** in Figure 5). Successful retention increases the number of registered donors. Unsuccessful retention actions result in definitely stopped donors, whose data is archived in accordance with prevailing rules and regulations. However, it is known that a substantial part of the stopped donors remain open to encouragement to resume active donorship. Chapter 6 discusses donor retention in more detail.

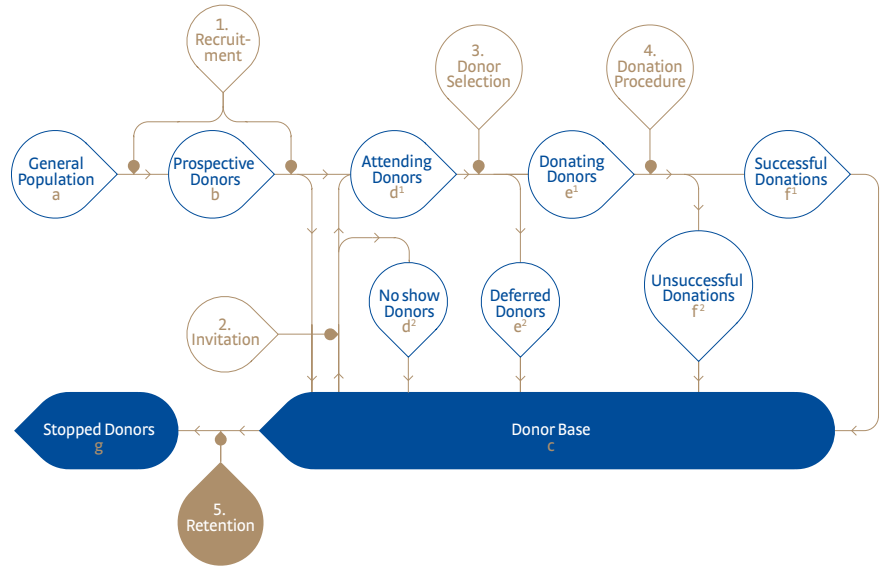

Figure 5. The fifth step in donor management, Retention, in relation to the subpopulations onto which it exerts its effect. See text for further explanation.

3.2.8 The entire donor management process

In general, blood establishments have clustered the donor management steps into organisational units. The precise organisational structure will depend on local, regional or national factors, as well as on the way blood establishments are embedded in the health care system. For example, a blood establishment could set up three organisational units in the donor management department (see Figure 6).

- **Collection Centre(s)**, where Steps 3 and 4 take place. Depending on the way collections are organised, collection sites are located throughout the blood establishment's region
- **A Public Affairs Unit** (including donor marketing) for Steps 1 and 5. The radius of action coincides with the blood establishment's region, while the base of operations will probably be located near the Back Office
- **A Back Office,** including supporting units and management, for all managerial work, including Step 2. As a rule, a blood establishment will use one or few locations to accommodate Back Office activities

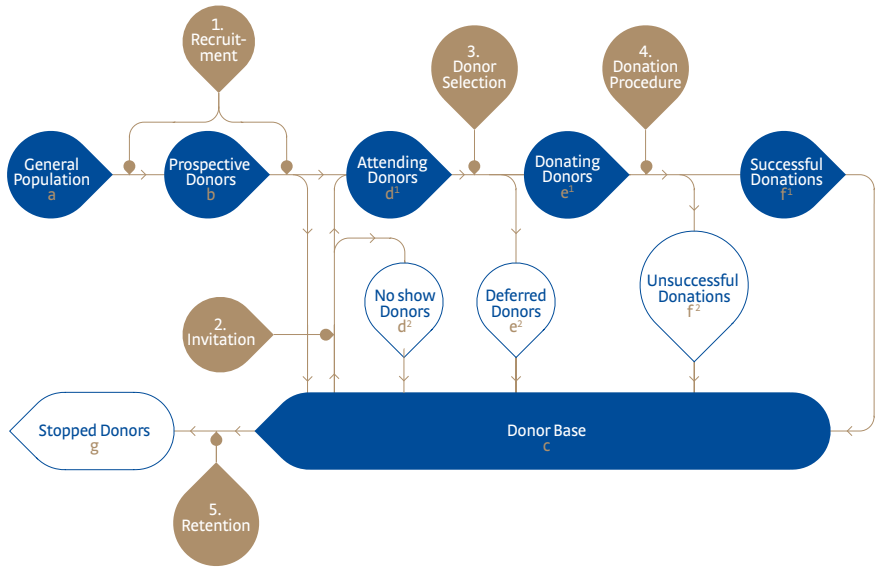

Figure 6. All five steps in donor management in relation to the subpopulations onto which they exert their effect.

SECTION 3.3

PERFORMANCE INDICATORS (PIs)

3.3.1 Introduction

While running a blood establishment, from time to time, donor management performance needs to be reviewed. To this end, one needs to compare the actual achievements with the targets set beforehand (effectiveness). One may also want to compare actual achievements with their costs (efficiency). In addition, one may compare the results to those of other units within the blood establishment or to those of other blood establishments (benchmarking).

Performance Indicators: Using Performance Indicators (PIs) is the way to do this. It is of the utmost importance that PIs are calculated in an unambiguous way, using clear and unequivocal definitions and terms. This section defines and elaborates donor management PIs. For the definitions of the different types of donors, applied here and used to describe the donor base, see Section 4.1.

A further prerequisite in assessing PIs is the availability of a validated data system. This system should contain unequivocal data remembering the old adage: 'garbage in, garbage out'. Chapter 9 deals in more detail with data management.

Apart from regular PIs, such as the blood establishment's financial results, or Human Resources Management (HRM) data, specific indicators on donor management can also be very useful for adjusting the organisation's strategy or future planning. This section sets out a set of general PIs that may be used to this end. Detailed PIs related to specific steps of the donor management chain, as described in section 3.2, are discussed in their chapters throughout this manual.

Trend prediction: Once gathered on a routine basis, PIs may be used to calculate trends. Straightforward plots of PIs against time are extremely useful in assessing upward or downward trends. Since seasonal effects often occur, plots of 12-months' averages help to adjust these seasonal effects.

3.3.2 General PIs, related to donor management

General PIs should, at a glance, give donor managers an understanding of the state of donor management in their blood establishment (also see Chapter 11). These general PIs are the so called Key Performance Indicators, or KPIs. Important KPIs are the following:

Donor base KPIs

- The total number of registered donors
- Number and percentage of donors
  - In the total population of the blood establishment's service area
  - In the population, eligible for donation, of the blood establishment's service area
- Number and percentage of
  - Inactive donors in the donor base in a given year
  - All types of whole blood and aphaeresis donors in the donor base
  - Donors with known red cell sub typing
  - Donors with known HPA-typing
  - Donors with known HLA-typing

Donation KPIs

- Number of donations collected
  - Per 1,000 inhabitants in the service area of the blood establishment
  - As a percentage of the total number of donations required to fulfil the demand by hospitals in the service area
  - As a percentage of the number of donations set as target otherwise

- The number of successful donations per full time equivalent (fte) members of the donor team, or its reciprocal:
- The total number of *fte* in the donor management per 1,000 donations
- Percentage of donations realised in a fixed site as opposed to those realised in mobile sites or mobile vehicle sites
- Number of donations per donor (per year)
- Total number of donations divided by the total number of donors who made at least one donation
- Percentage of donations stemming from first time donors

General management KPIs

- Financial PIs in accordance with general accountancy rules. These PIs are not further specified here (see general text books on this matter). The next section on financial aspects elaborates some of these PIs
- Total costs per 1,000 donations. Section 3.4 presents more details on costs of donor management.
  - Percentage of total costs of cost items in each step
- Human Resource Management PIs in accordance with generally accepted HRM PIs; in particular the following.
  - Number of employees in donor management (full timers, part timers, freelance workers)
  - Age distribution
  - Years of employment
  - Turnover
  - Absenteeism

These PIs are not specified further in this section.

The following HRM PIs also have added value.

- Training level of all workers
- Number of volunteers in donor management
- Number of volunteer hours spent in donor management
- Ratio of donor contact hours of the donor team to the total of paid hours of the donor teams

SECTION 3.4

FINANCIAL ASPECTS

3.4.1 Introduction

This section describes some financial aspects of each of the donor management steps. Therefore, the starting point will be Activity Based Costing, or ABC [1]. In this ABC, often applied in business organisations, the necessary output, input and cost drivers, such as personnel, materials and equipment are defined for each process step. In donor management, we have the following five steps, defined earlier.

1. Recruitment
2. (Registration and) Invitation
3. Donor Selection
4. Donation Procedure
5. Donor Retention

Budgeting: At the outset, for budgeting there are targets and performance indicators. The target in its simplest form is to collect in time enough blood products of good quality. The way to reach that target is paved with performance indicators (PIs) defined in general in Section 3.3. After having quantified the PIs, one can easily calculate the accompanying costs. If, for example, the number of required new donors is known, costs can be calculated for their recruitment by multiplying this number with the costs per newly registered donor. This calculation is made for the key PIs. Subsequently, the total budget for the Donor Management Unit may be calculated.

To get a balanced budget, a donor manager must have a detailed knowledge of all the cost items related to each activity, itemised below. However, we will not itemise these in terms of the absolute amount of euros, but rather in terms of the relative costs of personnel, equipment, materials and supporting issues. This section will not give a detailed budget for a specific blood establishment or collection centre.

Another important aspect here is the policy of costing items regardless of who is actually paying for them. 'There is no such thing as a free lunch' is a well known quotation illustrating that every action or good, represents a value for which someone has to pay the price, either in euros, energy or raw materials.

3.4.2 Cost centres, budgeting. Who is paying?

Table 1 shows the relative size of the cost items per step. The total costs are standardised, amounting to 100%. The number in each cell represents the indicative percentage of that item on a blood establishment's total costs. However, the financial system for blood establishments differs widely throughout Europe. Therefore, it is not possible to derive a standard budget for a blood establishment from this table. The table does allow for relative comparisons between blood establishments.

Table 1. Relative impact of cost items on total donor management costs. The numbers given are indicative, rounded percentages. From this table one may infer that, looking at the steps, in adding up to 42% step 4 Donation Procedure is the most costly one. Conversely, looking at cost items, personnel is the most costly part in adding up to 32%.

		Personnel	Equipment	Materials	Housing	IT-system	Transport/ Logistics	Quality Assurance	Overheads General items			Totals
									Facility Mgt	HRM	Executive Mgt	
1. Recruitment		2	0	4	1	0	1	0	0	1	0	9
Registration (Back Office)		5	1	0	1	2	0	1	0	1	1	12
2. Invitation (Back Office)		1	1	1	0	1	1	0	0	0	0	5
Reception		2	1	2	1	1	0	0	1	1	0	9
3. Health assessment		4	1	2	1	2	0	2	1	1	1	15
4. Donation procedure		16	3	8	4	2	1	2	1	2	3	42
5. Retention		2	0	4	0	0	1	0	0	1	0	8
Other activities e.g. Research												PM
Totals		32	7	21	8	8	4	5	3	7	5	100

Costs for a specific blood establishment mentioned may be different for other blood establishments, because they impact a blood establishment's budget to a lesser extent. Personnel and material costs differ widely in Europe, thereby rendering a cost comparison between countries problematic. In addition, costs made are not always charged to a blood establishment. Two important examples of costs not charged to a blood establishment are the phenomena of volunteers and sponsorship.

Volunteers

The DOMAINE survey found that 76% of the blood establishments do use the help of volunteers. However, the extent to which blood establishments deploy volunteers differs throughout Europe.

Volunteer tasks: The tasks that volunteers are allowed to perform by blood establishments are manifold and vary in complexity. Commonly, volunteers perform recruitment, registration and reception activities. Driving, building up a mobile collection unit, inviting donors, announcing blood drives, and working in call centre are also common activities for volunteers. The effect on the budget of working with volunteers is that personnel costs for the blood establishment go down: volunteers are paid no salary, although small compensations and gifts – either personal or to the organisation to which they belong – are the rule rather than the exception.

Sponsorship

It is not uncommon that blood establishments do not have to pay rent when they use the premises of hospitals, firms or housing facilities owned by schools or organisations such as the Red Cross. Sometimes sponsorship is done by firms or organisations – either in the form of money or goods and consumables – which can be helpful in recruiting new donors or alleviating waiting times.

Both the use of volunteers and the fact that sponsorship does occur, must be borne in mind if some kind benchmarking is to be performed. Filling in Table 1 in a given situation can be helpful in assessing performance indicators.

3.4.3 Important budgeting notions

Some budgeting notions often recur. Although a series of text books is available on each of these notions, just a short description of them is given here and the interested reader is referred to text books on accounting.

Cash flow and capital costs

The capital costs are the costs incurred on the purchase of buildings and equipment to be used in donor management; in other words, the total cost needed to bring the collection of blood products in a blood establishment to an operational status. However, capital costs are not limited to the initial construction of the collection centre or back office buildings. For example, the purchase of a new aphaeresis apparatus that will last for years is a capital cost as well. Capital costs do not include labour costs except for the labour used for things like the construction of the building. Unlike operating costs, capital costs are one-time expenses, although payment may be spread out over many years in financial reports and tax returns. Capital costs are fixed and are, therefore, independent of the level of output.

A fixed collection centre's capital costs include the purchase of the land on which the centre is built, legal expenses and the cost of securing permits. It also includes the cost of the equipment needed to run the centre, the centre's construction, financing and commissioning the centre incurred prior to operation.

Capital costs do not include the cost of drinking water, electricity or heating once the centre enters operation, or any taxes on the blood products that are produced. They also do not include the labour used to run the centre or the labour and supplies needed for maintenance.

Fixed and variable costs

Fixed costs are incurred independent of the output level of the system. For example, the mortgage paid for the building of a collection centre or the back office remains the same, regardless of the number of donations actually collected.

In contrast, operating costs vary with the output level. Disposables are an obvious example of variable costs. Usually personnel costs are fixed per *fte*. However, the number of *fte* actually hired may vary.

Direct and indirect costs

Direct costs include the costs made purely for the core processes in donor management and they include fixed and variable costs. Important items of the direct costs are the personnel costs for the time (hours) directly spent in core activities; for example, in the collection activities, direct hours are those working hours within the timeframe that donors can visit the donor session, i.e. the opening hours.

Indirect hours, which are (fully or partially) paid hours for the staff, may include the following.

- Travelling time of the donor staff
- Time needed for setting up and breaking down the mobile collection site
- Training hours
- Meetings
- Holidays, vacation, sick leave

3.4.4 Cost items

Each step in the donor management chain requires one or more of the following relevant cost items, see Table 1. Again, it is stressed that this list is not a list of cost items paid by the blood establishment itself; it could also include costs paid by others or other organisations.

Personnel
Personnel directly involved in the action mentioned. It does not include personnel costs of supporting activities, such as staff in the field of quality assurance, IT, transport and overheads.
- Euros per *fte* per year

Equipment
Apparatus; furniture. Depending on the amount and life span involved, either total direct investment costs or depreciation costs must be used.
- Investment costs
- Depreciation costs and/or interest

Materials: consumables, disposables
- Direct purchasing costs

Housing
Housing costs relate to the costs made for the buildings owned by the blood establishment, for locations not owned; for mobile collection units and for collection vehicles.
- Mortgage/interest costs per m2
- Purchasing costs; depreciation costs of mobile units and collection vehicles
- Rent
- Electricity, heating, water

IT-system
To run an IT-system, specialised personnel and equipment are needed. In addition, a special Blood Bank Information System is in use (see Chapter 12).
- IT-personnel
- Hardware
- Software

Transport/logistics
Transport includes that of materials, disposables, collection staff, blood products, test tubes.
- Drivers
  - Personnel costs
- Cars, transport vehicles
  - Purchasing costs; interest

Quality Assurance
Modern blood banking cannot do without specialised quality systems, such as Good Manufacturing Practice or GMP, requiring specialised personnel.
- QA-personnel costs
- QA-system costs
- Inspections (internal/external): direct extra costs

Overheads
This part includes other costs, not specified in other cost items.
- Facility management
  - Housekeeping; catering
  - Personnel costs
  - Maintenance costs
  - Purchasing costs
- Human Resource Management, HRM (see Chapter 11)
  - HRM-personnel costs
  - Training costs: personnel and materials
  - Recruiting costs
  - Executive management, including (financial) office work.
  - Insurance costs
- Donor costs, not specified elsewhere, including compensation or remuneration costs (if applicable)

In benchmarking different units or blood establishments, the kind of collection must be taken into account. Collecting whole blood units involves less time than other kind of collections, such as aphaeresis procedures. Table 2 lists time factors to be used when collection centres are to be compared, where, in this example, as a rule of thumb, one *fte* staff in the collection department is expected to carry out 1,800 whole blood collection procedures per year. This may vary, depending on the ratio of direct and indirect working hours and on the number of donors visiting the collection centre.

Table 2. Benchmarking personnel costs between two collection centres requires knowledge of the number and kinds of collections. In this example Centre A performs as many collection procedures as Centre B. However, Centre A requires 18 fewer fte personnel than Centre B, because they do not collect plasma for fractionation through aphaeresis.

	Number of collections		Time factor	Calculated units	
	Centre A	Centre B		Centre A	Centre B
Whole blood	220,000	160,000	1.0	220,000	160,000
Plasma for transfusion (aphaeresis)	10,000	15,000	2.0	20,000	30,000
Plasma for fractionation (aphaeresis)	0	50,000	1.6	0	80,000
Blood components (aphaeresis)	1,250	1,000	3.0	3,750	3,000
Therapeutic procedures (aphaeresis)	0	250	12.0	0	3,000
Total	231,250	231,250		243,750	276,000
Personnel in fte			1,800	135 fte	153 fte

3.4.5 Concluding remark

Sometimes, blood establishments undertake other activities, which may or may not be related to donor management. The following are the most important.

- Advising donors on life style issues
- Research, more or less scientific: market research, behavioural research, biomedical research

These items are not included here, but may be added.

SECTION 3.5

COMPETITION FROM PRIVATE COMPANIES

3.5.1 Introduction

Competition is popping up only fairly recently in the world of blood collection. With the growth and rise of the European market, however, the general and political debate on accepting competition is strengthening. This section discusses aspects that deserve attention in this debate. It includes a subsection on the view of the European Blood Alliance (EBA), which was published on their website in 2009. A third subsection deals with possible consequences of competition for donor management in particular.

3.5.2 Competition for blood products

Until now, competition for whole blood collections has historically been limited. However, the DOMAINE survey results show that commercial blood establishments now exist in 20% of the European countries. These countries include both EU member states and non-EU member states, and commercial organisations that collect and process plasma are active in these countries. The production and distribution of plasma derived pharmaceuticals is a market oriented, international business, where the laws of competitive commerce fully apply. An important distinction, therefore, should be made between blood (component) collection for direct patient use and collection of blood (components) as raw material for pharmaceuticals, predominantly plasma.

In general, the supply of blood products for direct use in patients through blood establishments is not a market oriented activity. Most European countries have blood establishments that are organised on a regional or on a national level. In those countries, regionally or national self-supporting systems exist, and competition between blood establishments does not yet occur, or only so on an occasional basis.

Effects of competition: However, the debate on introducing competition in the field of blood supply for direct use in patients is growing throughout Europe. Pricing of blood components and access to donors are the major arguments for starting this debate. For example, prices for blood components differ to a great extent between European countries. Insurers and hospital managers ask questions on how these differences are to be explained or could be diminished. In addition, pharmaceutical industries want to have equal access to (plasma) donors, which is not yet allowed in many countries.

Questions of rights: Many countries have assigned the exclusive rights on recruiting donors and collecting blood components to blood establishments, sometimes even by law. This does not preclude competition on supplying blood products to hospitals in different regions or countries. A blood establishment in country X might possess the monopoly on collecting blood in that country, preventing competition on donors

within country X. However, it is conceivable that a hospital in country X is allowed to retrieve blood products from country Y.

In yet another system, free competition on both donors and blood products exists. This system allows anybody to set up an organisation for collecting blood products or blood components that are sold to either hospitals or industries.

Reality of competition: Given the mere fact that there is a demand for products or services, competition is likely to occur. This is true for commercial enterprises and non-profit-making enterprises. Until now it has been felt that commercialisation of body parts, such as organs, tissues and blood has strong moral implications that need to be approached with great caution. Therefore, non-remuneration of donors – the suppliers of these products – still is the written basic principle accepted throughout Europe (see Box 1). However, in the plasma derived pharmaceutical business, paid donors do occur throughout the world, including the Americas and Europe. It is in this situation that competition for donors occurs between blood establishments, in relation to collecting blood (components) for direct use in patients, on the one hand, and organisations collecting plasma as a raw material for the pharmaceutical industries on the other.

Box 1. Definition of 'voluntary, unpaid blood donation' by the Council of Europe [2]:

'Donation is considered voluntary and non-remunerated if the person gives blood, plasma or cellular components of his/her own free will and receives no payment for it, either in the form of cash, or in kin which could be considered a substitute for money. This would include time off work other than reasonably needed for the donation and travel. Small tokens, refreshments and reimbursements of direct travel costs are compatible with voluntary, non-remunerated donation'.

Cherry picking: Of course, it is not necessarily the case that a new player will aim to provide the whole range of services or products. An organisation could decide to collect and produce profitable components ('cherry picking'), leaving out products that are too expensive to produce, e.g. HLA-typed platelet concentrates or red blood cell concentrates from donors having rare blood groups.

Charity competition: Competition in a not-for-profit environment is not uncommon. An important example is the competition that exists between charity organisations. The charity-market is huge, but there are limits to the amount of money people are willing to donate for charity purposes. Depending on many factors, people decide to donate money to one or some aid organisations. Consequently, aid organisations try to attract as many benefactors as possible. True competition exists there. Competing for blood donors is not a common feature yet.

Although similarities between the profile of blood donors and of charity fund contributors exist, differences are known as well [3]. In addition, large, self explanatory differences exist regarding the act of donating either parts of your own body or 'just' money. Giving money does not entail intrusion of one's body; it can be done at home, and there are no fears to be overcome.

3.5.3 Regulatory aspects, European Blood Alliance point of view

One should consider that competition in the collection (testing and processing) of blood, as well as in the provision of blood components to hospitals within the EU, must be carried out in such a way as to safeguard the security of the supply, the blood components, and the efficacy of the transfusion process itself. In order to achieve this, the European Blood Alliance has stated that it seems vital to adhere to the following principles [4].

Voluntary and non-remunerated blood donation: The EU should continue its advocacy of the principle that donors of blood for transfusion should be voluntary and non-remunerated, as defined by the Council of Europe. This should apply to all donors of blood components that are transfused in the EU, whether the donors are resident within or outside the EU. This rule must be applied even if the blood were to be collected outside the EU. This principle is strongly supported by the EU and WHO in order to enhance blood safety, avoid past mistakes and, above all, minimise patient risk. If some of the blood components are derived from paid donors, product labelling should make clear whether particular blood components are derived from 'paid' or 'unpaid' donors.

Compliance with EU Commission Directives: Any new blood component supplier to an EU state must comply with all the terms of the EU Blood Directive. This should be enforced by the State, even when that State has not yet transposed the Directive into its law. If a State fails to do this, it could allow its blood supply service to be severely damaged and patients could be put at risk, even before the terms of the Directive become operative in the state concerned.

Inspections: Any blood establishment collecting, testing or processing blood components for use in an EU State (even if the establishment is situated outside the EU) should be subject to regular inspections by the regulator in the receiving State. The regulator should be required to take account of the epidemiology of the population from which the blood is collected. If this does not happen, the safety standards enshrined in the Blood Directive would be undermined.

Full obligations: Any new blood component supplier to an EU State should be required to take its share of high cost hospitals and products and meet the full obligations of a normal not-for-profit blood service (e.g. meeting peak demand, providing the full range of blood components, including specialist products; providing an advice service on product use, etc.). If the new entrant cannot fulfil these obligations, it must fully remunerate the existing not-for-profit service to act as a 'supplier of last resort'

and to carry out these essential services on its behalf. If the State government does not ensure that this happens, the capacity of the not-for-profit service could become eroded through financial pressure, as could lose its most economic donors and hospitals. Essential products and hospitals may, under these conditions, not be supplied. This would cause deterioration of health care and long-term problems for the State government concerned.

Infrastructure: Member States must ensure that the infrastructure required to provide both a comprehensive and modern blood transfusion service remains in place in a form that is both sustainable and capable of being updated continually in the light of new technology, medical developments and health threats.

Guarantee against claims in case of withdrawal: Any blood service operating within the EU should provide a guarantee that it could meet any legal claims found against it or fund the cost of disruption caused if it were to withdraw abruptly from the market (e.g. to fund the cost of finding new donors, etc.). If such a guarantee were not to be entered into, the State government could be left with substantial costs if the company were to enter into liquidation or to otherwise cease trading in the State concerned.

3.5.4 Competition and donor management

Where competition on blood donors occurs, donor management is likely to change. Some aspects of donor management need special attention. The following, non-exhaustive list of aspects could be considered.

1. Blood and plasma supplies

As indicated in a recent consensus statement, however, not fully endorsed by the participants in the meeting [5], the coexistence of two independent collection systems, one for blood and one for plasma, in the same region or country, could create a risk of shortage in the supply of blood components. Cooperation between the blood and plasma sectors is important to ensure that the best community outcomes are achieved including sufficient blood (products) supply for patients. These principles have been underlined in a recent resolution from the World Health Organization on availability, safety and quality of blood products [6]. This resolution *urges* member states 'to take all the necessary steps to establish, implement and support nationally coordinated, efficiently managed and sustainable blood and plasma programmes'.

2. Requested/potential donor base

To a certain extent, hospital and industry demand together determine the donor base needed to fulfil the total demand for blood products. However, the product range and market share of the blood establishment in question are the sole determinants for the qualitative and quantitative requirements of the donor base needed, not the total demand for blood products in that region or country. For example, if a blood establishment decides to produce only apheresis plasma and only non-sub typed ABO-red cell and platelet concentrates for the lowest possible price, then the donor base will be essentially different from the donor base needed to produce the full range of blood products and blood components. In addition, one may expect that pricing of blood products between the two blood establishments is likely to be different. Blood establishments producing only certain commodities probably will be able to set lower prices compared to blood establishments that produce the full range of blood products. Differential pricing will be the likely consequence, where prices for rare blood products inevitably will rise dramatically (see also Subsection 3.5.2).

3. Quality/safety balance

Minimum quality and safety standards are laid down in European Directives and must be met by each blood establishment. However, a rise in quality assurance inevitably has its price. The precautionary principle (see Chapter 13 for further explanation), by definition, confronts blood establishments with possibly large costs.

However, health gains or prevention of disease may not be easily calculable or obvious. Therefore, in straightened economic circumstances, the precautionary principle will, likely, be the first to be attacked with a subsequent potential rise in patient risk.

A special feature arises regarding donor safety, when donors decide to go shopping among blood establishments. The only sure way to prevent any adverse reactions, e.g. due to frequent donations in different blood establishments will be data exchange on donors between different blood establishments, operating in the area. Blood establishments must take special care on privacy aspects, even more so, when operating in border regions.

4. Cost/service balance

Sensible service is not necessarily costly. If, for example, service to donors is helpful in retaining them, lower recruitment costs will ultimately be the result. This is especially true in the realm of remuneration of donors. Although there is a general consensus regarding non-remuneration of donors, blood establishments have proven to be very creative and resourceful in interpreting this guidance. The DOMAINE survey results show several examples (see Chapter 2).

5. Additional products and services

To remain attractive business partners for hospitals, a blood establishment could decide to offer additional services, leading to conditional sale: e.g.

- Additional and sub typed products: red cells and platelets; rare blood groups
- Stem cells and stem cell processing, including cord blood units
- Product advice; consulting
- Tissues, such as bone, cartilage, skin, muscle tendons, heart valves and corneas

To remain attractive to donors, a blood establishment could offer them services, such as the following.

- Lifestyle advice
- Periodic health check
- Conditional sale (e.g. reduction in insurance premiums)

All these additional services and the change in donor approach could bring about a shift in the composition of the actual donor base. Current knowledge is insufficient to predict either the extent or the direction of this shift.

6. Research and exchange of information

Research can be costly and blood establishments are not likely to pay for it if no return-on-investment is foreseen. Subsequently, exchange of information on donor management or on other sensitive information regarding market share will be labelled as confidential.

3.5.5 Concluding remarks

The introduction of competition in donor management will bring about great changes. These changes will be felt by hospitals/doctors, and donors. Both groups will experience advantages, as well as disadvantages. Hospitals (doctors) are likely to get commodity blood products at lower prices; however, the cost will be much higher prices for specialties. It is beyond the scope of this manual to predict the overall effect.

The same holds for donors. They might experience an increased level of service. However, a change in attitude or motivation cannot be excluded. Blood establishments must anticipate more or less fluctuations in both their client base (shopping hospitals) and donor base (shopping donors). Additional ethical considerations on competition in donor management are discussed in Chapter 13.

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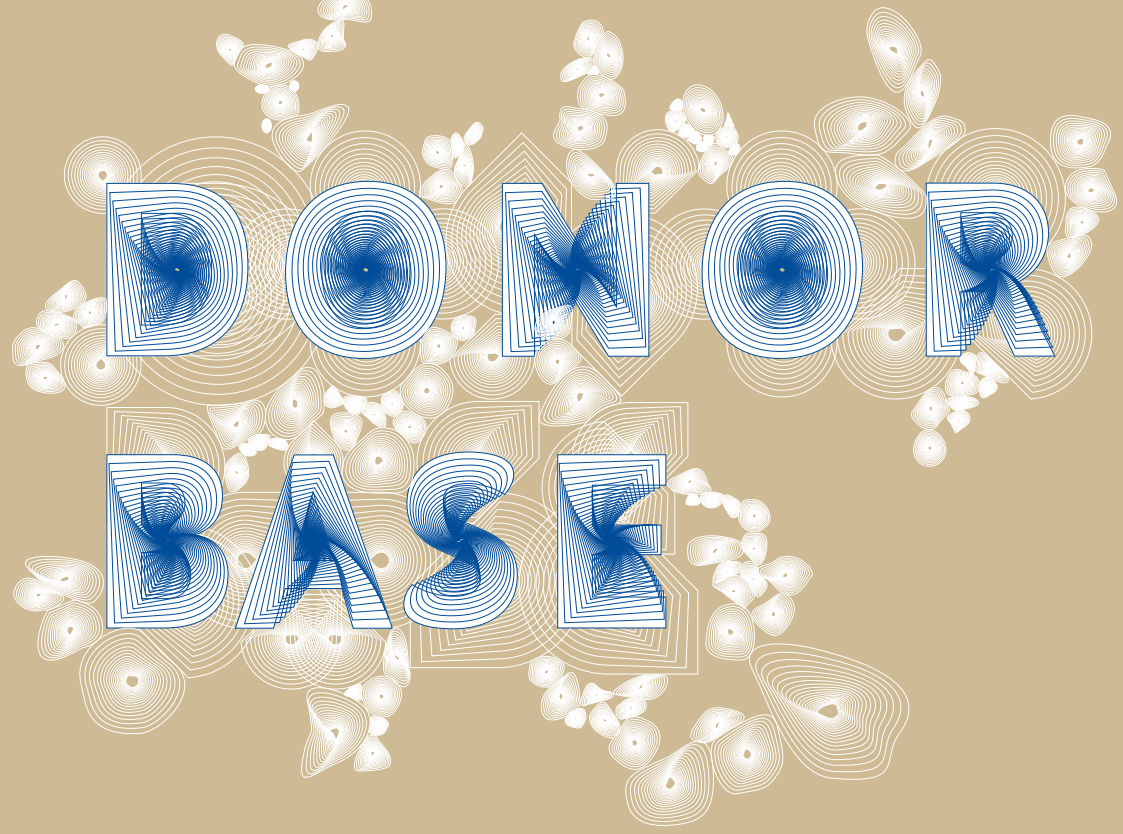

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CHAPTER 04

SECTION 4.1

DEFINITIONS

4.1.1 Introduction

This manual frequently addresses various definitions and types of blood donor and blood donations. To prevent miscommunication, a specific set of definitions pertaining to both blood donors and blood donations is a prerequisite. Applying such a set of definitions allows trends in the donor base to be assessed and benchmarked among blood establishments within or between countries.

The DOMAINE set of definitions builds on the set of definitions laid down in the EU Council recommendation 98/463/EC [1]. However, EU definitions and DOMAINE definitions differ in some respects, and it is important to set out these differences, how these differences have arisen, and the underlying rationale for DOMAINE's adoption of these definitions at this time.

This chapter first outlines the EU and DOMAINE definitions, and then illustrates and compares them. The first section outline is as follows: EU definitions: 4.1.2; DOMAINE definitions: 4.1.3; Detailed comparisons: 4.1.4; Illustration of DOMAINE donor types: 4.1.5; Overview of DOMAINE donor types: 4.1.6; DOMAINE donation types: 4.1.7.

Subsequent subsections further develop the DOMAINE definitions and elaborate on the various types of donations and the current situation in Europe, as gathered from the DOMAINE survey.

4.1.2 European Community Directive definitions

To facilitate comparisons between EU countries on the number of donors, the number of collections, the use of blood products, and safety aspects, the EU has laid down definitions for some specific donor types (EU Council Recommendation 98/463/EC). This set of definitions has been used in addressing macro-economic issues in the blood supply. For example, the Council of Europe has applied them in its questionnaire on the collection, testing and use of blood and blood products in Europe [2].

Table 1: EU definitions of donor types. Since plasma processing organisations use blood products from the same pool of blood donors, the same definitions apply in the so-called Plasma Master File (Guideline on epidemiological data on blood transmissible infections; European Medicines Agency) [3]. However, to serve its specific purpose, the set of EMA definitions includes two additional definitions, also quoted in Table 1.

Table 1. EU definitions and Plasma Master File definitions of donor types

Donor Category	**EU Definition and Plasma Master File Definition**
Donor	A person in normal health with a good medical history who voluntarily gives blood or plasma for therapeutic use.
First time donor	Someone who has never donated either blood or plasma.
Prospective donor	Someone who presents himself/herself at a blood or plasma collection establishment [a] and states his/her wish to give blood or plasma.
Regular donor	Someone who routinely donates their blood or plasma (i.e. within the last two years), in accordance with minimum time intervals, in the same donation centre.
Repeat donor	Someone who has donated before but not within the last two years in the same donation centre.
Donor Category	**Plasma Master File Definition**
First time tested donor	Person whose blood/plasma is tested for the first time for infectious disease markers (with or without donation) without evidence of prior testing in a given blood system. [b]
Repeat tested donor	Person whose blood/plasma has been tested previously for infectious disease markers in a given blood system.

a Blood establishments are defined in Directive 2002/98/EC [4] as 'any structure or body that is responsible for any aspect of the collection and testing of human blood or blood components, whatever their intended purpose, and their processing, storage and distribution when intended for transfusion. This does not include hospital blood banks.' The use of the term 'collection centre' in the [EMA] guideline means a specific site where blood/plasma is collected, including any associated mobile sites.

b In the Plasma Master File, a given blood system means a system that has records of whether a donor has donated before and the results of previous testing.

The actual number of donations and the donation pattern (the time intervals between a donor's donations) of donors determine the donor career and some of its characteristic safety implications. Therefore, quantifying the number of donations and the donation patterns helps to distinguish and understand the different donor types.

Table 2: Cross tabulation of the EU definitions of donor types with the accompanying donation patterns. From this table one may conclude that quantifying the EU definitions into unambiguous donor types is not straightforward. However, donor management requires actual information on the donor base, in order to be able to intervene with timely and adequate recruitment and retention activities.

Table 2. Cross tabulation of EU donor types against the number of donations, using the EU definitions and Plasma Master File definitions

	Donations		
	before 2008	2008	2009
Donor	≥0		
Prospective donor	0		
First time donor	0		
Regular donor	≥0	≥1?[a]	
Repeat donor	≥1	≥0[b]	
First time tested donor	0	0 or 1	
Repeat tested donor	irrelevant	irrelevant	

a No unambiguous number of donations deducible from the definition. A regular donor in this definition may have donated in the present donation centre, another donation centre of the same blood establishment, or elsewhere. In addition, no clear time interval between donations is determined.

b This donor may or may not have donated in the present donation centre, another donation centre of the same blood establishment, or elsewhere.

4.1.3 DOMAINE definitions

The EU set of definitions has shown its applicability in macroeconomic surveys. Donor management goes one step further and requires more detailed information on the actual donor career. To that purpose unequivocal definitions are indispensable. Therefore, based on the EU and Plasma Master File definitions, DOMAINE has formulated an elaborated set of definitions for both *donor types* and *donation types*.

Donor type definitions are presented, discussed and illustrated in subsections 4.1.4 to 4.1.6.
Donation type definitions are formulated in subsection 4.1.7.

DOMAINE donor types

Both the number of donations a person has made and his or her donation pattern form the starting point of good donor management, allowing for adjustments in recruitment and retention strategies. The number of donations is an important dimension that can be used to categorise donors into, for instance, first time donors, regular donors, or donors who are imminently lapsing from the active donor base. The donation pattern gives information on the time intervals between subsequent blood donations.

Advantages of clear-cut donor types

In order to retrieve and manage the information in the donor base properly, the use of an electronic donor data base is almost a prerequisite. Donor managers need to be informed on the actual donor base, both qualitatively and quantitatively, for reasons of planning and forecasting. They need up-to-date information in order to answer their management questions. How many donors are available for a donation today? What is the number of newly recruited donors this year? Is the number of inactive donors increasing?

The composition of the donor base in terms of the different donor types, therefore, provides valuable information about the robustness and composition of the donor base. For example, on the one hand, blood establishments depending strongly on first time donors rely heavily on their donor recruitment activities and data base information may be used for donor recruitment activities. On the other hand, blood establishments with a strong regular donor population will rely on the information in the donor base to decide whether or not to put more energy into donor retention.

Defining donor types

Every donor career begins when a person presents at the blood establishment, either spontaneously or following active recruitment. A donor career may end in different ways: by active discontinuation, through permanent deferral, or through the occurrence of (serious) life events.

Once registered, the new donor may contribute to the blood supply by donating blood. One should realise that a newly registered donor has made no donations yet. However, it is the intention that newly registered donors will make one or (preferably) more donations. Throughout their careers, donors fall into different donor types. Whether or not a person has actually donated blood or not is the easiest countable fact distinguishing donors from non-donors, and also allows for distinguishing donors from each other. Therefore, DOMAINE uses the number of donations as a tool to construct and define the different donor types. The donor types are described in Tables 3 and 4. Table 3 provides a verbatim description of the donor types.

Table 3. DOMAINE definitions describing the composition of the donor data base

Donor type	DOMAINE definition
Donor	Someone who voluntarily gives blood or blood components.
Prospective donor	Someone who states his/her wish to give blood or plasma but is not registered as a donor yet.
Newly registered donor	A donor who has been registered as a donor but who has not donated yet.
First time donor	Someone who has made their first and to date only donation within the last 12 months.
Regular donor	Someone who made at least two donations within the last 24 months. The last donation has been made within the last 12 months.
Returning donor	Someone who has made at least two donations. This donor has made only one donation within the last 12 months AND the interval between the last and the before last donation is more than 24 months.
Lapsing donor	Someone who has made at least one donation within the last 24 months, but NOT within the last 12 months.
Inactive donor	Someone who made at least one donation. This donor has made the last donation NOT within the last 24 months, but is still registered in the donor data base.
Stopped donor	Someone who was registered as a donor and may or may not have made one or more donations, but has subsequently been deregistered as a donor from the donor data base for any reason.

Table 4 cross tabulates the same donor types on the basis of the number and pattern of donations. Blood establishments may thus use the number of donations to determine donor types, which provides them with valuable information for their donor management strategy.

It is important to realise that the information provided by constructing the different donor types from the donor database gives a clear picture of the composition of the donor pool at a specific point in time. To evaluate the donor data base, a 'snap shot' is made of its composition at a specific date. For convenience, in this manual the date is set at December 31st 2009.

Table 4. Cross tabulation of donor types against the number of donations, using DOMAINE definitions

	Donations		
	before 2008	2008	2009
Donor	≥0		
Prospective donor	0		
Newly registered donor	0		
First time donor	0		1
Regular donor	≥0	≥0 (≥2)	≥1
Returning donor	≥1	0	1
Lapsing donor	≥0	1	0
Inactive donor	≥1	0	
Stopped donor	≥0		

4.1.4 Comparison of the DOMAINE and EU definitions

Some of the EU definitions do not allow for a straightforward retrieval of data from the data processing systems holding the relevant donor data. Therefore, building on the EU definitions, the DOMAINE definitions indicate which parameters should be used when retrieving data. The DOMAINE definitions are a further elaboration of the EU definitions, and allow for a translation back to these same EU definitions and vice versa.

Table 5 shows a more detailed comparison between DOMAINE definitions and EU definitions.

Table 5. Differences and similarities between DOMAINE definitions and EU definitions

DOMAINE definition		**EU definition**	**Comment**
Donor	$\supset$[1]	Donor	The DOMAINE definition is broader than the EU definition because it includes persons who are not necessarily in normal health (e.g. for autologous use) AND persons who donate blood components other than plasma (e.g. platelets, white blood cells, stem cells). Moreover, with an informed consent of the donor, the donation OR a part of the donation may be used for other than therapeutic purposes.
Prospective Donor	$\supset$	Prospective Donor	The DOMAINE definition is more broad than the EU definition because it also includes persons who have stated their intention to donate otherwise, e.g. through the internet, general polls/inquiries, or recruitment activities. The DOMAINE number of prospective donors is an unknown quantity and can only be estimated.
Newly Registered Donor	$\subset$	Prospective Donor	A newly registered donor in the DOMAINE definition is a Prospective Donor in the EU definition who has been registered in the donor database. The number of prospective donors according to the EU definition cannot be assessed.
First time donor	$\neq$	First time donor	As the number of donations is the distinctive feature in the DOMAINE definitions, the EU definition is not adequate for retrieving relevant data from the donor data base. Moreover, the EU definition ('someone who has never donated either blood or plasma') could pertain to persons who have no relation at all with a blood establishment, e.g. all children below the age of 16.
Regular donor	}	Regular donor	The composite DOMAINE Regular, Returning and Lapsing Donors equals the total number of EU Regular Donors. The terms Returning Donor and Lapsing Donor have been added, because a donor who does not donate frequently, or whose frequency changes (abruptly), differs from a Regular donor. This distinction is of importance for donor retention policy.
Returning donor	}		
Lapsing donor	}		
Inactive donor	$\approx$	Repeat donor	The EU term Repeat Donor is indistinctive. It is easily confused with a Regular Donor or a Returning Donor. Moreover, a Repeat Donor may have donated in (a) different donation centre(s).
Stopped donor		No equivalent	-
No equivalent		First time tested donor	-
No equivalent		Repeat tested donor	-

1 A $\supset$ B means that every member of group B is also a member of group A, while the reverse is not necessarily true; in short: group B is a part of group A. A $\subset$ B means that group A is a part of group B.

4.1.5 Illustration of the DOMAINE donor types

In the following paragraphs, each donor category will be illustrated further by showing exemplary donation patterns. The donation patterns used to clarify the donor types provide a 'snap shot' of the composition of a donor database (set at December 31st 2009).

Prospective donor

Prospective donors are persons from the general population who have stated their wish to give blood or plasma but are not yet registered blood donors. They form the pool of potential donors, but have made no donations yet and are not registered in the donor data base (see Figure 1).

Some blood establishments offer people the possibility to state one's wish to become a blood donor via websites or e-mail. However, the size of the group of prospective donors is largely unknown to blood establishments.

Figure 1. Exemplary donation pattern of a prospective donor

Newly registered donor

Once a prospective donor is actually registered in a donor database, he or she becomes a newly registered donor, and can be invited to make a first donation. Newly registered donors have not made a donation yet (see Figure 2).

Figure 2. Exemplary donation pattern of a newly registered donor

First time donor

First time donors are new donors with no previous donation history, who have donated for the first time in the last 12 months (see Figure 3). When first time donors make a second donation within these 12 months, they become regular donors.

Figure 3. Exemplary donation pattern of a first time donor

Regular donor

Regular donors are donors who have made at least two donations, the last donation having been made within the last 12 months. In addition, the donation interval between the last and previous donation must be less than 24 months (see Figure 4). The DOMAINE survey (see Chapter 2) revealed an average donation frequency for regular whole blood donors of 1.9 donations in the year 2007 throughout Europe.

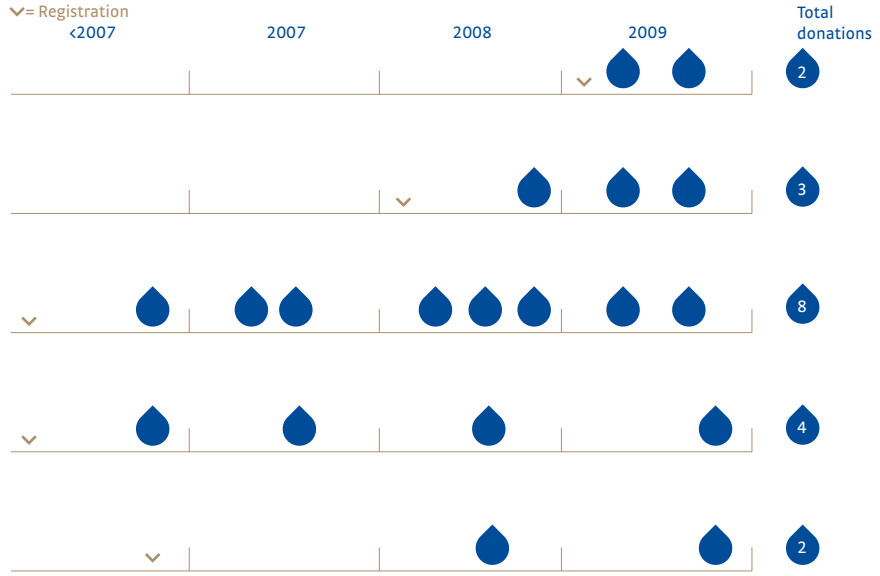


Figure 4. Five exemplary donation patterns of regular donors

Returning donor

A returning donor is someone who has donated before, but has made only one donation within the last 12 months. In addition, the interval between the last and the previous donation has to be more than 24 months (see Figure 5). This type of donor is especially relevant for evaluating donor retention and recruitment strategies.

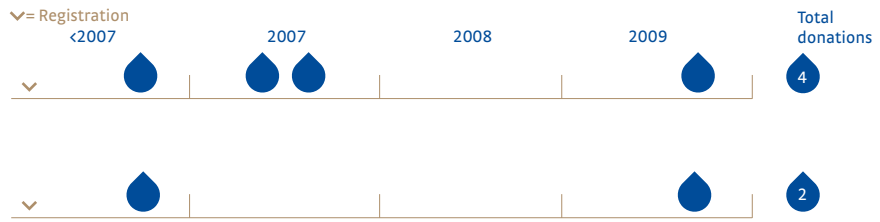


Figure 5. Two exemplary donation patterns of a returning donor

Lapsing donor

A lapsing donor is someone who has donated at least once within the last 24 months, but who has made no donations within the last 12 months (see Figure 6). Lapsing donors are donors at risk of becoming inactive donors and may even become stopped donors. They are, therefore, a special focus of donor retention strategies. This category of donors is a component in calculating so-called attrition rates (see Chapter 6 on Retention).

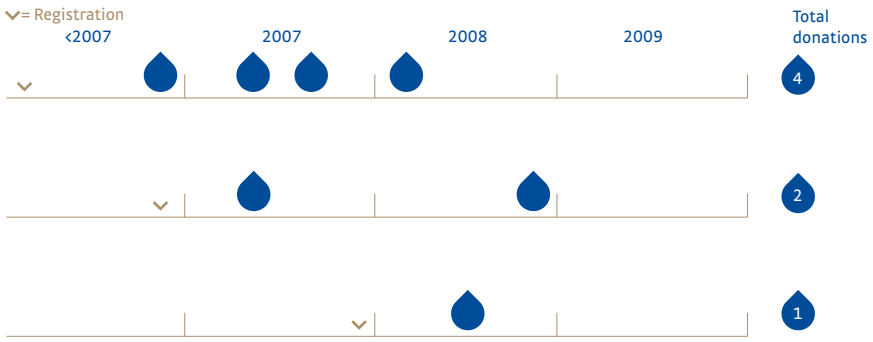


Figure 6. Three exemplary donation patterns of a lapsing donor

Inactive donor

An inactive donor is someone who has donated at least once, but NOT within the last 24 months (see Figure 7). In addition, the inactive donor is still registered in the donor data base, and has not become a stopped donor yet. Inactive donors may be a focus of specific donor retention strategies.

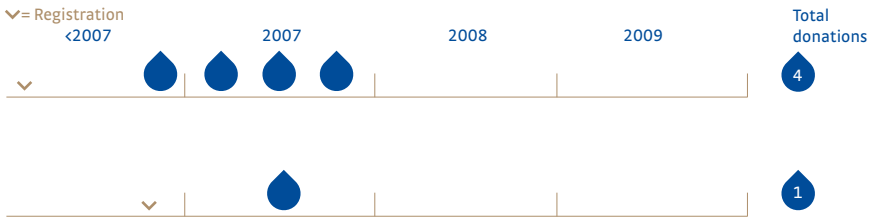


Figure 7. Two exemplary donation patterns of an inactive donor

Stopped donor

A stopped donor is someone who was registered as a donor and may or may not have made donations. For whatever reasons, the blood establishment has decided to stop contacting this donor. This donor has been deregistered from the donor data base (see Figure 8) and will not be invited for donation any longer. Relevant data are to be archived in accordance with current laws and regulations.

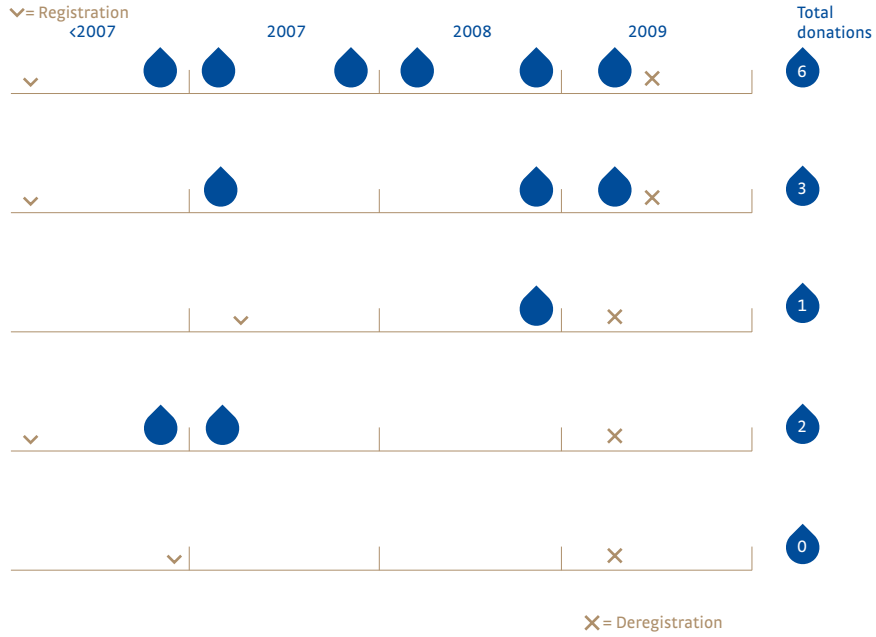


Figure 8. Five exemplary donation patterns of a stopped donor

4.1.6 Overview of DOMAINE donor types

The DOMAINE definitions thus distinguish eight different donor types. Figure 9 provides an overview of the different donor types, and provides with each category an exemplary donation pattern.

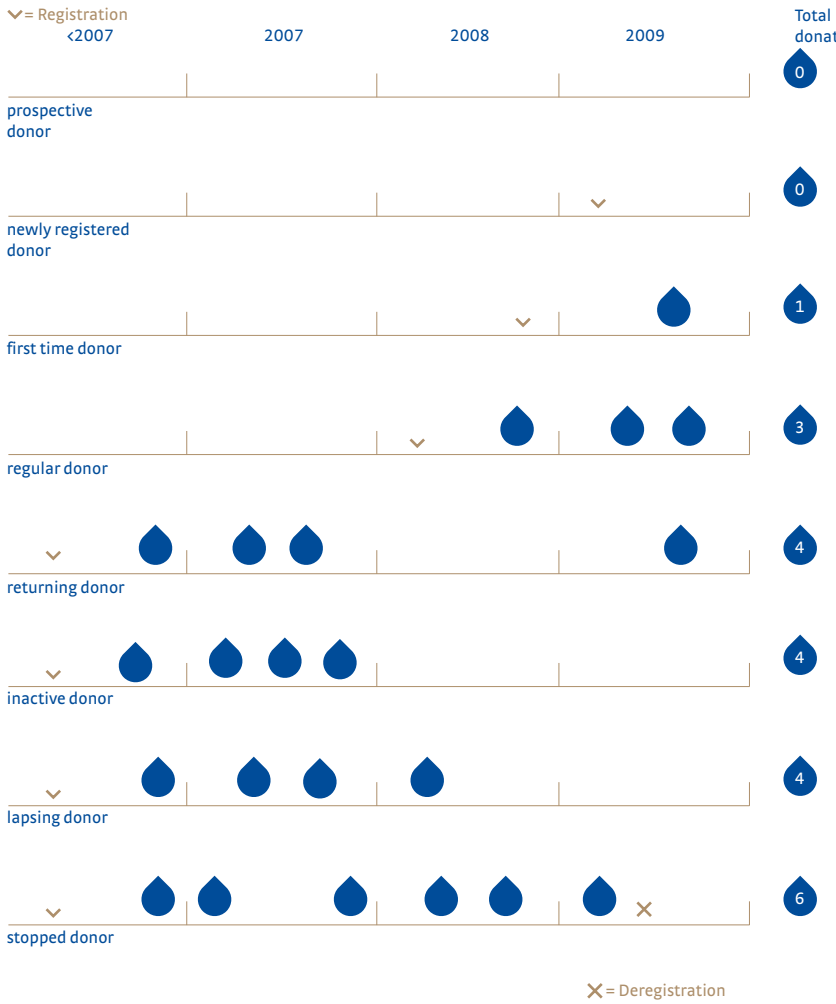
Summary: Good donor management requires up-to-date information on the number of donors within each donor category, and the different donor types enable analysis of the donor database at a given point in time. For instance, it is important to know how many donors are lapsing donors, e.g. donors at risk of becoming inactive. It is equally important to have up to date information of the number of regular donors. The DOMAINE definitions thus provide a tool to be used for managing the donor population.

Only donors who are registered in the donor data base and are eligible to donate can be invited directly and personally to come to the blood establishment and donate. Using the DOMAINE definitions, the eligible donor group includes all of the following donor types who are not temporarily deferred: newly registered donors, first time donors, regular donors, returning donors, lapsing donors and inactive donors.

All donors are recruited from the general population. The DOMAINE survey on blood donor management showed that age eligibility criteria for potential donors from the general population differs between European countries. Most countries apply a minimum age limit of 18 years old, while some countries allow new donors to make

their first donation at the age of 17 (often with parental consent). The maximum age allowed for potential new donors ranges considerably between countries, from 57 to 65 years old. One blood establishment indicated that it did not use a maximum age limit for potential new donors.

Figure 9. Overview of the different donor types with corresponding examples of typical donation patterns



4.1.7 DOMAINE donation types

Besides using different *donor types* to gain insight into the composition of the donor data base, an overview of the typical *number and kind of donations* in a given time period is equally important. The following set of definitions refers to the different donation types (Table 6).

Table 6. Donation types cross tabulated to their resulting products

Donation type	Result
Donation	The result of collecting whole blood or blood components from an individual in a single procedure; a donation is counted from the point of skin puncture onwards
Successful donation	A donation where the puncture of the donor skin resulted in whole blood or blood components suitable for processing
First time donation	The lifetime first non-autologous donation of a donor
Repeat donation	Any non-autologous donation other than first time donations
Autologous donation	The donation of a donor, collected for therapeutic use in the same donor

Note: a donation procedure is called *un*successful, when puncture of the donor skin did *not* result in whole blood or blood components suitable for processing.

The total number of donations in a given year includes donations from first time donors, regular donors, returning donors, and part of the stopped donors, as well as autologous donations and donations not-for-transfusion. The number of unsuccessful donations is also included, thus reflecting the total donation activities of the blood establishment. The total number of donations does, by definition, not include donations from lapsing donors or inactive donors. The total number of repeat donations in a given year is the total sum of donations made by regular donors, returning donors and stopped donors, the latter being donors with a donation in the specified time period, but who have stopped donating since. Figure 10 depicts an example of the distribution of the different donation types within a specific time period.

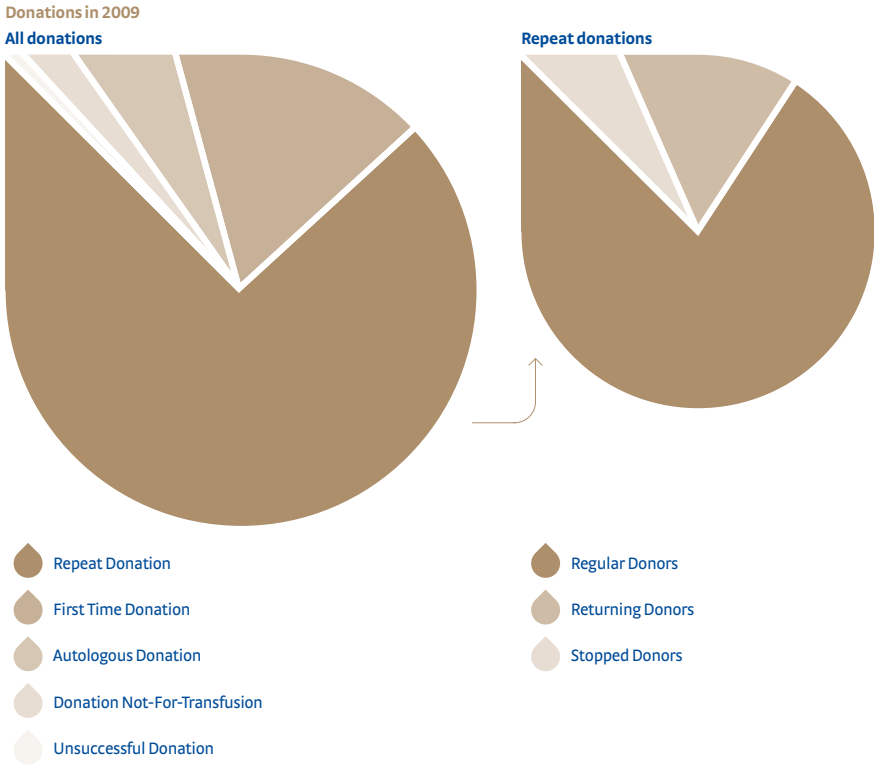


Figure 10. Example of the distribution of the different donation types that constitute the total number of donations in a blood establishment

A general finding of the DOMAINE project is that many blood establishments have difficulties with retrieving information on the number of donations within a specific time interval. Therefore, donation information must be saved in a donor data base (see also chapter 11 on Information Technology), and the donor database should be constructed in such a way as to allow for easy retrieval of donation information for managerial purposes. To construct correctly the different donor types, precise registration of each donation procedure is a *sine qua non*.

SECTION 4.2

DONOR BASE AND THE DONOR MANAGEMENT PROCESS

4.2.1 Introduction

Blood establishments continuously strive to provide the blood products needed for transfusion and pharmaceutical purposes [5]. Ensuring an adequate blood supply requires maintaining a balanced ratio between the hospital demand for blood products and the number of donations [6].

Every day, blood donors are needed to give the 'gift of life'. An adequate donor population is of key importance for the entire blood transfusion chain and forms the backbone of good donor management. Therefore, blood establishments are involved in a constant struggle to attract and retain enough donors. Both donor recruitment and retention are necessary to maintain a stable and sufficient donor population.

The registered donors together form the Donor (Data) Base, and precise registration of the number of donors and donations and their various donor characteristics is important for both recruitment and retention practices [7]. Good donor management requires concrete knowledge of the donor base in order to be able to intervene with timely and adequate recruitment or retention activities. This section describes the donor management process and its relationship to the donor data base.

4.2.2 Description of the donor management process

Donor management for collecting blood products is a chain process, where the next step depends on the success of the former step. The chain process consists of consecutive actions and steps, leading from donor recruitment to the required blood products. The current section briefly describes the process steps in donor management as depicted in Figure 1. A more detailed description of the donor management process is given in Chapter 3.

Blood donors are recruited from the general population (box a). Not everybody within the general population is willing to become a blood donor. People who are interested are called prospective donors (box b). They form the pool of potential donors.

Recruitment activities (box 1) need to be targeted towards this group of prospective donors to raise blood donor awareness and to urge them to become blood donors. A certain number of prospective donors will actually decide to present themselves at a blood establishment to become blood donors. They will be registered in the donor data base (box c) as newly registered donors.

Registered donors who are eligible to donate will receive an invitation to make a donation (box 2). Invited donors can either respond or not respond to the invitation. The non-responders (no show, see box d2) will be invited again. Donors who never show after being invited to donate will eventually be signed out of the donor data base (box g). Donors can also be invited in a more general way through blood donation appeals through the media. In addition, there are people who visit the blood establishment spontaneously and will be registered on the spot.

Both personally and generally invited donors who do present themselves to donate are called attending donors (box d1). These donor candidates show up at the blood establishment to undergo medical screening (donor selection) determining donor eligibility (box 3). In some countries, the newly registered donor will only undergo a more or less specific selection procedure and laboratory tests. A donation procedure is not performed at this very first visit. When a donor is not eligible to donate, he or she receives either temporarily or permanently deferred status (box e2). Temporarily deferred donors will receive a new invitation to donate, while permanently deferred donors will be signed out of the donor data base (box g).

All donors who pass the donor selection successfully can make a donation (box e1), and most donation procedures (box 4) are successful and will result in blood products (box f1). A small number of donations fail due to adverse events or unsuccessful procedures (box f2). Some of these complications can lead to a donor stopping his or her donor career (box g). However, in general, successful donors will be invited again after a certain time interval.

A final step within the donor management process focuses on donor retention (box 5). Successful donor retention aims at minimising the population of permanently stopped donors.

Donors may drop out of the donor base for the following reasons.

- They repeatedly do not show to make a donation after being invited (box d2)
- They are permanently deferred (box e2)
- Their donation procedures are unsuccessful (f2)
- They themselves decide to quit

The pool of stopped donors is formed by no-show donors, permanently deferred donors, and donors experiencing complications in the donation procedure, and data of stopped donors is archived (box g).

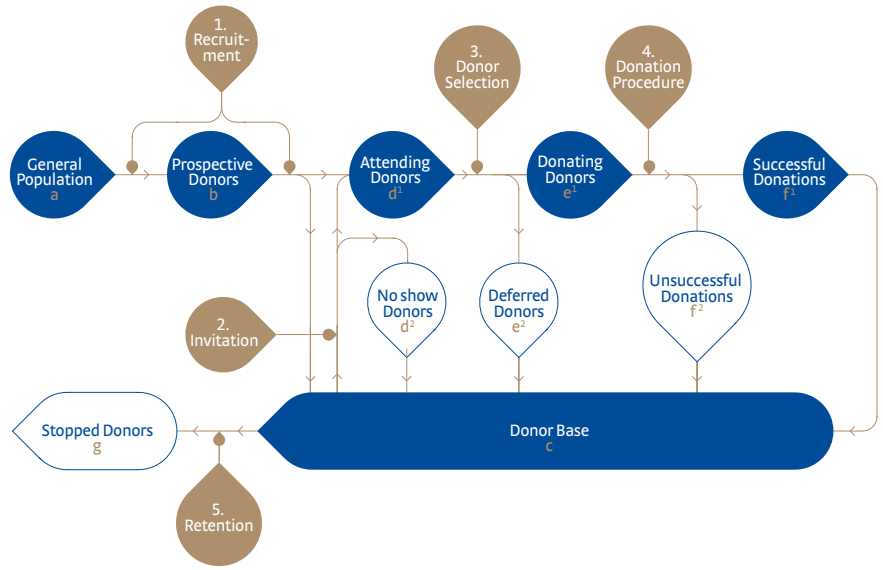


Figure 11. Donor management process

SECTION 4.3

DONOR BASE AND DONOR TYPES

4.3.1 Introduction

Although donors do share a common goal, all the donors that make up the donor base differ a lot from each other. This section deals with the composition in terms of age categories and activity status of the donor.

4.3.2 Current situation in Europe: composition of the donor population

Overall, the DOMAINE survey shows that the composition of the donor population varies widely between European blood establishments, especially when looking at the number of first time and regular donors. Some blood establishments rely to a large extent on first time donors to fulfil the need for blood. For these blood establishments, first time donations are responsible for up to 35% of the total amount of whole blood donations. In one blood establishment first time donations even constituted 81% of the total amount of whole blood donations. Other blood establishments do have a large regular donor pool at their disposal.

Figure 12 shows the composition of the European blood donor population, based on the data provided by 20 blood establishments. The proportion of inactive donors is relatively high, because many blood establishments never deregister these donors from the donor data base.

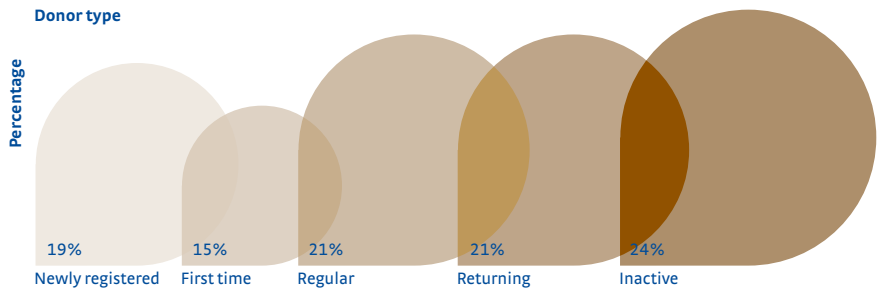


Figure 12. The composition of the European donor population using donor types

Desirable situation

An adequate donor population is of key importance for good donor management. Ideally, blood establishments can rely on a large pool of donors that are actively involved in making donations. A high proportion of regular donors and a small proportion of lapsing or inactive donors means that the majority of donors registered in the donor data base can be invited to make a donation. In other words, the number of donors actively engaged in the donating activities is fairly high. Being able to rely on regular donors to provide enough blood and blood products is not only beneficial to blood safety but also to recruitment costs. Retaining a donor for a subsequent blood donation is less costly in general than recruiting a new donor.

4.3.3 Active, lapsing and inactive donors

The DOMAINE set of definitions on the different donor types (see Subsection 4.1.3) provides a blood establishment with relevant information about the composition of the donor base. The different donor types are constructed using both the number of donations and the donation pattern. These two dimensions render information about 'how active' a donor is. A donor, who donates regularly every two years is potentially different from a donor who has donated six times in two years but who has not made any donation within the last year. The degree of 'activity' can be distinguished within the DOMAINE donor types.

Actively donating donors are divisible into three groups (see Table 7).

1. First time donors.
2. Regular donors.
3. Returning donors.

Active donors are thus donors who have made at least one donation within the last 12 months.

Lapsing donors have made no donation within the last 12 months but did donate at least once within the last 24 months. Lapsing donors form a donor group that might easily turn into inactive donors. They form a potential risk and, therefore, require special attention in donor management activities.

Inactive donors are known donors who have donated before but who have made no donations within the last 24 months. They have not actively participated in the donation process during this time and are at risk of stopping their donating activities altogether.

Summary: It is important to monitor the distribution and the development over time of the different donor types. Lapsing donors are at risk of stopping their donating activities and becoming inactive and finally stopped donors. Up-to-date knowledge on the different donor types can be a powerful tool to be used in good donor management in that it focuses attention on those donor groups that are potentially falling out of the donation process. Knowing the composition of the donor base allows for immediate directed retention, and if necessary, recruitment activities.

Table 7. Donor types cross tabulated to their donation pattern

Type	Activity status	Donations		
		before 2008	2008	2009
Donor	PENDING	≥0		
Prospective donor		0		
Newly registered donor		0		
First time donor	ACTIVE	0		1
Regular donor		≥0	≥0 (≥2)	≥1
Returning donor		≥1	0	1
Lapsing donor	ACTIVE?	≥0	1	0
Inactive donor	INACTIVE	≥1	0	
Stopped donor		≥0		

SECTION 4.4

DONOR BASE AND DONOR CHARACTERISTICS

4.4.1 Introduction

Since donors form the starting point of the blood supply chain, it is imperative to know the composition and characteristics of the donor population, as well as categorising the donor population into the donor types as described in the previous section. Measuring and registering donor characteristics is equally important for recruitment and retention strategies. To some extent, these activities also have implications for the safety of blood products. This section also pays attention to the size of the donor base and suggests a simple way to estimate it.

4.4.2 Blood donor characteristics

Donor management for both donor recruitment and donor retention requires a thorough insight into the current characteristics of the donor population.

Gender: Are men and women equally represented in the donor population?
Age: What is the mean age of the regular donor group? Is the donor population ageing?
Blood groups: Are there enough donors so that each blood group is provided for?
Eligibility: Is a donor eligible to donate or not? What proportion of the donors is ineligible to donate?
Deferrals: What proportion of donors is temporarily deferred?

Both donor recruitment and retention can be targeted more precisely when these, and other questions, can be answered. Precise and easy retrievable management information concerning donor characteristics is, therefore, indispensable.

Donor characteristics encompass both demographic and medical data. The first registration of a donor is an especially important moment to list and record demographic information. Demographic information includes data on sex, date of birth, country of birth, (email) address, and telephone number.

Medical donor data entail characteristics measured during the medical screening and laboratory screening tests, including information on temporal and permanent deferral (e.g. blood group, heart rate, blood pressure, height, weight). Each subsequent visit from or contact moment with the donor provides an opportunity to verify, and if necessary, update the information in the donor data base.

4.4.3 Current situation in Europe

An important part of the DOMAINE survey focused on gaining insight into the current demographic composition of the European donor population with respect to age and

sex. The following paragraphs describe the current demographic donor composition in Europe and compare the donor population with the general European population.

Age distribution

New donors are recruited from the general population. Age eligibility criteria differ somewhat between European blood establishments but, in general, a minimum age limit of 18 years for new donors is applied. Most blood establishments allow regular donors to donate until the age of 70. The age eligibility criterion for donors is mainly from 18 to 70 years.

It is instructive to know the age composition of the general population from where the new donors are recruited (see Figure 13).

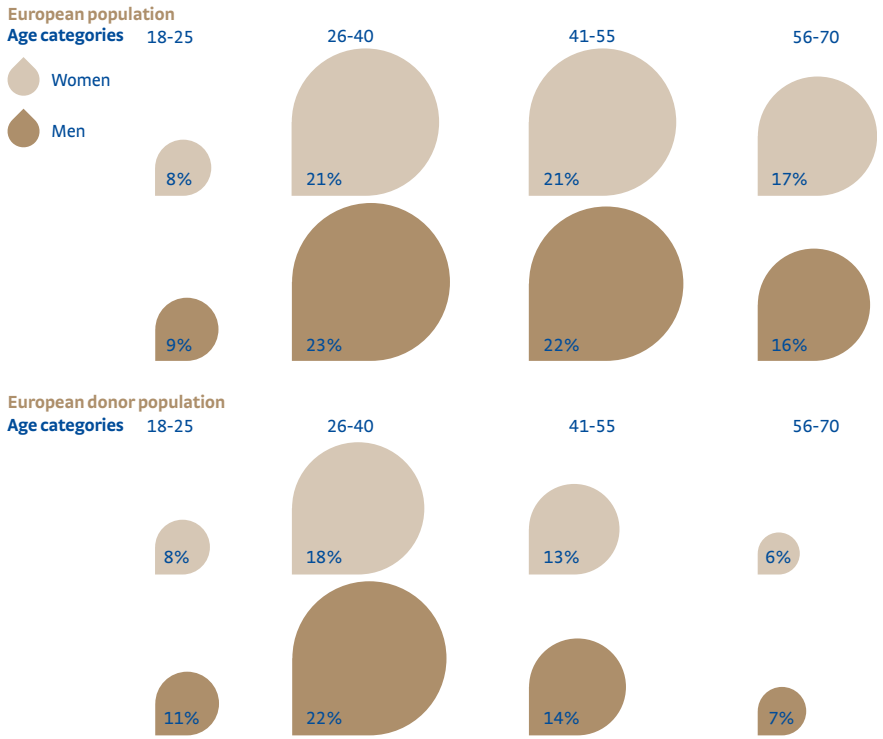


Figure 13. Age distribution of the general European population and the European donor population

A comparison between the age distributions of the European population and the European donor population shows that, in the donor population, men are better represented than women, and that younger people, i.e. people under the age of 40 years, are better represented than those of 40 years or older. The donor population is relatively younger than the general population.

Comparing the age distribution of the actual donor population and the potential donor population provides important knowledge that can be used for donor management. Are all age groups equally present in the donor population? Are there certain age groups of interest underrepresented that can be specifically targeted in recruitment campaigns?

Composition of European donor population within age categories

Besides knowing the general age composition of the donor population, e.g. most donors are younger than 40 years, donor management also profits from a thorough insight into the composition of the different donor types per age category. When looking at the younger donor groups, are they merely formed by first time donors or are there also regular young donors? It is equally interesting to know whether first time donors are present in the older age categories, or if these older donors are for the most part regular or returning donors.

The DOMAINE survey shows that the presence and distribution of the different donor types (newly registered donors, first time donors, regular donors, returning donors, inactive donors) varies with each age category.

Figure 14 shows the percentage of newly registered, first time, regular, returning and inactive donors for each age category, based on the data provided by 20 blood establishments. It shows that donors under 25 years old are predominantly newly registered or first time donors. Between the age of 41 and 55 years, regular donors dominate the donor pool. Donors over 55 years old are mostly either inactive or regular donors. The percentage of newly registered donors and first time donors declines over age and the percentage of inactive donors increases over age.

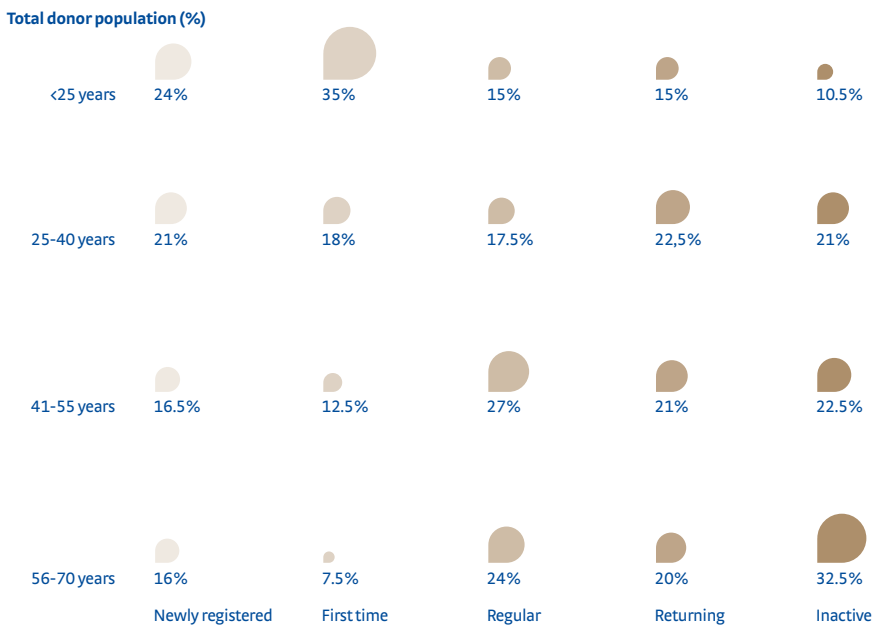


Figure 14. Composition of the European donor population per age category

Desirable population composition

Good donor management requires insight into the composition of the donor population. Knowing the actual composition of the donor population allows for a comparison with the general population. It also provides information on the actual number of people in the general population currently engaged as donors.

Age range: In general, it is desirable and deemed feasible that about 3-4% of the general population between the age of 18 and 70 are blood donors (also see Subsection 4.4.4).

Regularity: In addition, it is desirable to have a high proportion of regular donors, preferably in all different age categories. Regular donors are the most active donors and preferably constitute the major part of a donor population. Therefore, a donation frequency of about two times per year for whole blood donors, and five times per year for plasma donors is warranted.

Ethnic diversity

Registering the ethnic background of donors is not common practice in European blood establishments. However, various ethnic backgrounds do have special phenotypes and genotypes that can be important for patients with these special blood needs. Registering the ethnic background can thus be of additive value for donor management for patients with special transfusion needs (see Chapter 9 Multiple-transfused patients). Specifically, it may facilitate the search for HLA-matched donors. However, it should be borne in mind that registering ethnicity must be in accordance with prevailing legislation.

4.4.4 Desired size of the donor base

Before making marketing plans and recruiting donors, blood establishment management should determine the desired size of their donor base. The World Health Organisation (WHO) has several publications on blood and blood donations on its website, including publications on numbers of donations worldwide. The number of donations needed is generally expressed in the number of donations per 1,000 inhabitants. WHO uses a lower limit of 10 donations per 1,000 inhabitants per year for a minimally adequate blood supply [8]. Usually, an active donor donates several times per year. In an EBA-benchmark the average number of whole blood donations per active donor per year turned out to be approximately 2.0-2.3.

To calculate the minimum number (A) of active donors needed to fulfil the demand in a year, one has to know the yearly average number of donations of one active donor (B) and the number of donations needed in a year (C). It follows that A = C / B (see Box 1 for an exemplary calculation of the required donor base size).

Box 1. Calculation of the number of active donors

If the average number of donations of an active donor is two per year and one wishes to collect the WHO-minimum of 10 donations per 1,000 inhabitants, then the required donor base must contain 10/2= 5 active donors per 1,000 inhabitants, or 0.5%.

In a country with 20 million inhabitants, this would imply the need for 100,000 active donors.

However, this figure needs two upward adjustments (see Box 2).

First, it is a fact that the donor base includes temporarily deferred, lapsing or inactive donors. The percentage of active donors may vary (see Section 2.2).

Second, not all people in a country (or region) are eligible to donate, because most countries apply age limits. Demographic data is needed to adjust for this factor.

Box 2. Calculating the size of the donor base, adjusting for inactive donors and the demographic situation

The average number of donations in Europe is approximately 40 donations per 1,000 inhabitants [2].

With on average 2.0 donations per active donor per year, a total of 20 active donors per 1,000 inhabitants is needed, constituting a percentage of around 2.0 % of the general population.

If the percentage of temporarily deferred, lapsing or inactive donors in the donor base is 16.7%, (one in six) the size of the entire donor base must be 2,4% (= 6/5 * 2.0%) of the general population.
If the age limits for blood donation are 18-65, then demographic data learns that approximately 75% (three in four) of the general population in Europe is eligible to become a donor. This means that of the people in the age group of 18-65, 3.2% (= 4/3 * 2.4%) should be in the donor base.

An 'average European' country with 20 million inhabitants and an average blood demand of 40 whole blood donations per 1,000 inhabitants would need 480,000 donors in its donor base, of which 400,000 are active donors. The donor base, in this example, constitutes 2.4% of the general population and 3.2% of the population in the age group of 18-65.

It is important to realize that this percentage should be corrected for the actual demand and supply of blood products in a region or country. It must be noted that the above-stated examples relate to whole blood collections only. The demand for plasma is not included.

SECTION 4.5

DONATION TYPE AND RESPONSE TO AN INVITATION TO DONATE

4.5.1 Introduction

Accurate insight into the number of donors of a specific donation type is an essential element in blood banking practice. This information is also important for good stock management. In order to determine the number of donors that need to be invited to keep an optimal blood stock, knowledge about both the composition of the donor pool, as well as the response rates of donors to (personal) invitations, is essential.

4.5.2 Current situation in Europe: donation type

In the majority of the blood establishments in Europe, whole blood donors constitute on average 96% of the total donor pool. The remaining 4% of the donor pool is composed of plasma donors (2%), platelet donors (1%), or other aphaeresis donors (2%).

Approximately one third of the blood establishments in Europe perform plasma aphaeresis procedures. About half of the blood establishments collect platelets from special platelet donors. About one quarter of the blood establishments collect other blood products from special aphaeresis procedures.

4.5.3 Current situation in Europe: response rate to donation invitations

The response rate is defined as the number of invited donors attending a blood session divided by the total number of invited blood donors. The response rate to personal invitations to donate varies widely among the different donation types.

Whole Blood donors show low response rates, ranging from 5% to 80% with a mean response rate of 35%.
Plasma donors show high response rates ranging from 90% to 95%, with a mean response rate of 92%.
Platelet donors show response rates from 50% to 95%, with a mean of 83%.

The high response rates for both plasma and platelet donors might be explained by the fact that they can often make specific appointments to donate. In addition, higher motivation and commitment could also make a difference. It may be significant that plasma donors are allowed more donations per year than whole blood donors and spend more time per donation at the blood establishment.

Desirable situation

Frequent donor visits enforce the relationship between the donor and the blood establishment. Therefore, it is desirable to have high response rates to donation invitations. This ensures a tie between the donor and the blood establishment, and also increases the effectiveness of the donor invitation process.

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DONOR RECRUITMENT

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CHAPTER 05

SECTION 5.1

MARKETING

5.1.1 Introduction

Donor recruitment and donor retention are key activities for all blood establishments throughout the world. However, up-to-date principles of marketing need to be applied to these activities if a secure and safe blood supply is to be ensured.

This section first outlines the results of the DOMAINE survey as applied to donor marketing for recruitment in Europe and identifies the Performance Indicators for donor recruitment. The principles of effective marketing will then be outlined and applied to donor recruitment. The next chapter will focus on marketing principles as they might be applied mainly to donor retention.

5.1.2 Marketing strategies in Europe

The DOMAINE survey results on marketing strategies (see Chapter 2) showed that most blood establishments do have a marketing or advertising strategy for donor recruitment. Blood establishments indicated that they use various criteria to decide whether or not new donors should be recruited (see Figure 1 and Box 1).

Box 1. Different stimuli to decide on recruiting new donors

- Daily routine
- (Expected) low blood stocks
- (Expected) low blood stocks of a specific blood type
- Increased demand for blood products
- Decreasing donor population
- Starting new blood sessions
- Donation frequency

The majority of blood establishments recruit on a regular basis, guided by the consistent dropout of donors due to ageing, deferring, or lapsing. In addition, several other recruitment stimuli come in to play, such as (expected) low blood stocks, or starting new blood sessions. The donation frequency is also often mentioned as a recruitment stimulus, as blood establishments strive to maintain a mean donation frequency per specific time period. For instance, the donation frequency of whole blood donors is kept at around 1.6 times per year. A drop or rise in the donation frequency has implications for the number of donors needing to be invited, and thus for the number of available donors. A thorough analysis of the donation frequency is warranted, however, since opposite reasons for donor turnover may cause these differences.

Recruitment targets need to be set incorporating (regional) demographic data, trends in the development of the donor population, and trends in the demand for blood components. A regular exchange of information between blood establishments and hospitals allows for adapting the production of blood components to the transfusion needs, preventing shortage or high outdating rates of blood components.

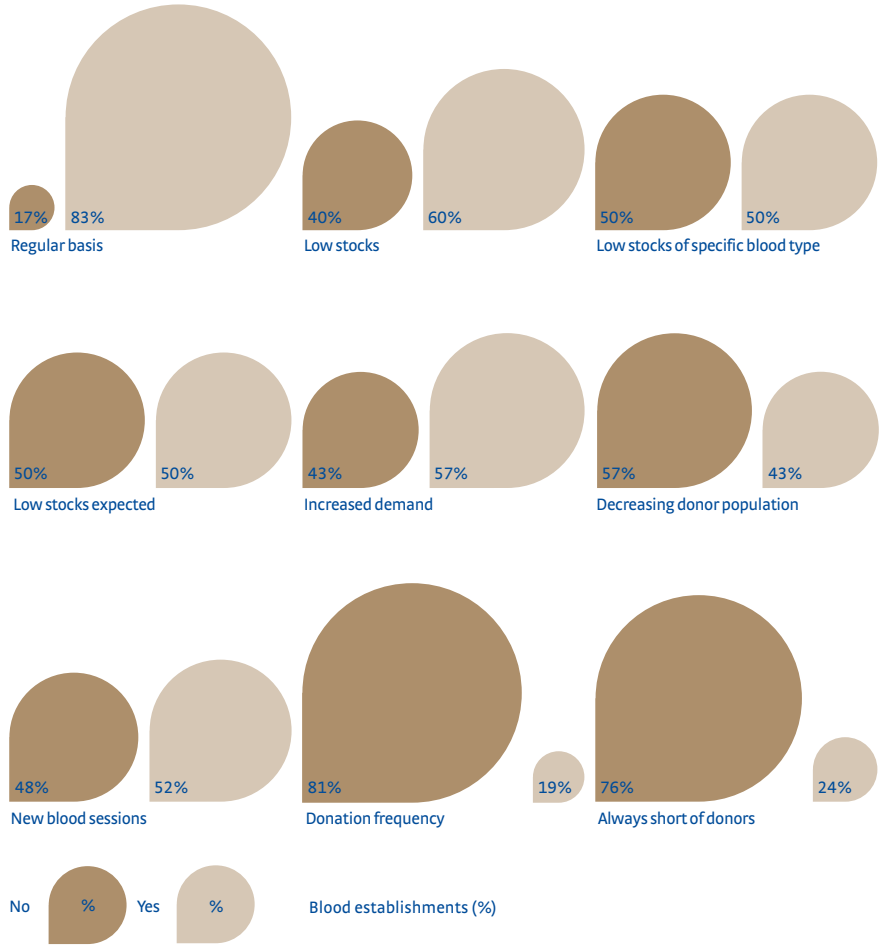


Figure 1. Reasons for recruitment of new donors

The DOMAINE survey indicates that the majority of blood establishments come across factors that hinder their donor recruitment. Respondents mention several constraints:

- Low budget
- Change of regulations, e.g. stricter eligibility criteria due to Ban on Transfusion Donors or Creutzfeldt-Jacob disease
- Presence of commercial blood banks
- Other factors, such as lifestyle changes and commercialisation of society

5.1.3 Recruiters

Recruitment activities can be carried out by various departments or organisations. In Europe, more than half of the blood establishments have their own recruitment department either at regional or national level. This recruitment department is responsible for the selection, planning, and implementation of recruitment activities. Often, these recruitment departments have allocated the recruitment activities to multiple organisational bodies at the same time. For instance, both the donor service department and the blood collection teams are jointly responsible for the recruitment of (new) donors (see Box 2.)

Box 2. Departments or organisations carrying out recruitment activities

- Marketing department
- Donor service department
- Blood collection teams
- The Red Cross
- Voluntary organisations
- Student organisations
- Outsourcing to a different (private) organisation

5.1.4 Performance Indicators for recruitment

The performance of recruitment activities is not easy to assess. Many recruitment activities run in parallel, complicating the interpretation of individual campaigns. General PIs still are helpful and are listed here.

- Number of newly registered donors in a given year
- Percentage of newly registered donors on the total number of donors in a given year
- Number of first time donors in a given year
- Percentage of first time donors on the total number of donors in a given year
- Costs of recruitment and/or registration per newly registered donor
- Costs of recruitment, registration and invitation per first time donor

SECTION 5.2

PRINCIPLES OF MARKETING APPLIED TO DONORS

5.2.1 Introduction

Professional bodies define marketing in many ways, but marketing in blood banking practice differs significantly from what is required in 'classical' marketing. Working in a not-for-profit environment, marketing in blood donation is not about selling or offering products but about selling a good feeling to donors. Marketing in blood donation tries to achieve several objectives: recruitment and retention of blood donors. We strive to establish a 'lifelong' relationship between the donor and the blood service, since this enhances cost-effectiveness and increases blood safety [1-4]. Since these objectives have to be achieved without offering any form of remuneration, and since it is also difficult to assess accurately both the failure and success of different recruitment and retention methods, of necessity, our procedures are complicated.

There are several marketing models that can be applied to donor management, e.g. the AIDA model (attention, interest, desire, action). For the current DOMAINE manual, marketing applied to donors will be described using the 'four phases cycle' that was introduced in 2004 by the Blood Services of Québec (Héma-Québec) and by the Donor Loyalty Group [5]. The model proved to be useful for both donor recruitment and donor retention.

Marketing is usually defined as 'the process by which a planned, executed management of a product or service, the pricing, promotion and the distribution of goods and/or services, leads to an exchange, which satisfies both the customer's and the organisation's needs'. In our context, marketing is a process used to promote blood donation. It serves to inform the population about blood needs as well as to change attitudes towards blood donation so that more members of the community will become blood donors (donor recruitment). Marketing is also a powerful tool to encourage donors to repeat their donating activities (donor retention, Chapter 6).

Each blood establishment has to develop planning and collection strategies adapted to the blood product foreseeable needs. These planning and collection strategies then serve as input for a more detailed marketing plan.

This chapter will introduce and apply the principles of the 'marketing cycle' to the management of blood donors. It will also identify the four main phases of the marketing cycle.

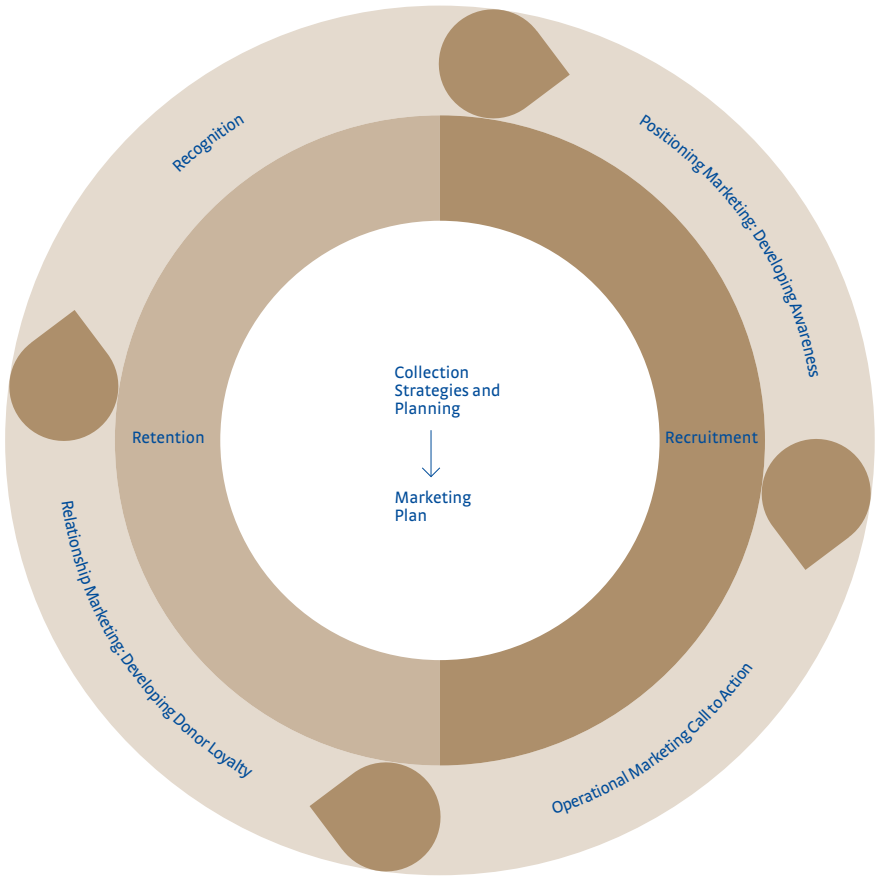
5.2.2 Marketing cycle

Marketing activities for blood establishments follow a four phases' cycle [6] (see Figure 1).

1. **Positioning marketing:** developing public awareness
2. **Operational marketing:** call to action
3. **Relationship marketing:** developing donor loyalty
4. **Recognition**

The two first phases (positioning and operational marketing) relate to donor recruitment. The last two phases (relationship marketing and recognition) relate to donor retention and will be the subject of the next chapter.

Figure 2. The four phases of marketing (reproduced with the permission of Héma Québec) [6]



Phase 1: Positioning marketing

Since the perceptions that exist about blood donation can be positively influenced by strategic actions, positioning marketing aims to raise the public awareness about the need for blood donation, given its benefits for the community. Ideally, it will create positive images about blood donation in the mind of the public, enhancing the sense of belonging and the social meaningfulness of being a blood donor.

Positioning marketing plays a role in both donor recruitment (see Sections 5.3) and donor retention (see Section 6.2). For new donors, positioning marketing aims at creating the initial motivation and it concerns the recruitment process before the first donation. For known donors, it aims at maintaining the donor's motivation to donate and concerns the recruitment process for subsequent donations.

Phase 2: Operational marketing

Operational marketing takes action to increase the number of attending blood donors in the area served by the blood establishment. The main question is this: how can we increase the numbers of people who show up to donate? Operational marketing actions can vary both in shape and content, but need to be repeated on a regular basis. When developing strategies urging people to come and donate, it should be borne in mind that donors are not all alike. The way to succeed is to adapt communication tools and messages to different donor segments; for example, newly registered donors, first time donors, and regular donors.
Operational marketing is important both for donor recruitment (see Section 5.4) and donor retention activities (see Section 6.3).

Phase 3: Relationship marketing

Relationship marketing is essential for donor retention (see Section 6.4) and, therefore, aims to obtain repeated returns from donors. It may be defined as measurable business communication aimed at establishing individual, direct, interactive and durable relations between the blood service and the donors. It recognizes the long term value of keeping donors and stresses donor retention marketing as a process over time.

The goal of relationship marketing is that of building loyalty and ensuring high donor satisfaction. Relationship marketing concerns both the retention measures implemented during the donation process itself, and the targeted donor loyalty programs. To ensure the success of each collection event, and especially to respond to urgent needs, the communication tools of relationship marketing have to be adapted for several reasons: to generate immediate donor responses, to react and readjust the level of blood reserves for (certain) products in the long term or in relation to particular blood groups.

Phase 4: Recognition

The fourth phase, recognition, is a set of means aiming at acknowledging the extraordinary gesture from the donors and to keep them motivated to repeat their donations. Recognition allows blood services to develop close relations with donors and is essential to generate their sense of pride. This increases the donor's sense of the value of giving blood and encourages them to make multiple donations. More importantly it also increases the significance of donating blood in the public's eye. Section 6.5 describes how recognition can be used in donor retention.

SECTION 5.3

POSITIONING MARKETING TOOLS FOR RECRUITMENT

5.3.1 Introduction

Positioning marketing, the first phase in the donor marketing cycle, aims at developing and raising awareness about the need for and the act of blood donation among the general public. Recruitment activities are directed towards that end and both the message (recruitment content), and the means (recruitment method), are important in increasing the intention to donate.

5.3.2 Recruitment: content of the recruitment message

Recruitment activities have typically had limited success [7]. This may be due, at least in part, to the a-theoretical approach that is often adopted in designing recruitment strategies [8].

Recruitment materials usually contain information about the ongoing need for blood, the donation procedure, safety aspects, and donor eligibility criteria and so on. Although these materials do an excellent job in conveying information to potential new donors, their impact on recruitment is marginal. The information contained in these materials does not translate into enhanced recruitment since the messages do not address either attitudes or self-efficacy [9]. To be effective, recruitment materials need to focus on the message that donating blood is a good thing to do, is approved by others, and is an activity that one can accomplish.

Recruitment effectiveness may be improved by specific targeting of psychological antecedents that are known to influence the decision to donate [10-13]. A social cognition model that has been widely applied in the context of blood donation is the *Theory of Planned Behaviour*. According to this model, the primary motivational determinant of behaviour is intention. The more someone intends to donate blood, the more likely the chance that he or she will actually make a donation [13,14]. Creating intentions to donate is, therefore, important in designing recruitment materials. The intention to donate is determined by three factors: attitudes, subjective norms and self-efficacy.

Attitude refers to a person's overall evaluation of the proposed behaviour, i.e. donating blood. A positive attitude increases the intention to donate.

Subjective norms refer to the evaluation of 'important others' of the intended behaviour: perceived social support. Do others who are significant to the new donor think that donating blood is important?

Self-efficacy refers to the feeling a person has that he or she can successfully perform the behaviour, i.e. donate blood.

To summarize, a successful recruitment message is able to increase the intention to donate blood, by the following methods.

- Creating a positive attitude towards donating blood
- Responding to the need for approval of others
- Increasing the feeling of self-efficacy; giving potential new donors the feeling that donating blood is something of which they are capable

Recruitment materials that specifically address these constructs will generate positive and consistent changes in behaviour [15,16].

5.3.3 Content of recruitment messages in Europe

The DOMAINE survey showed that throughout Europe the content of the recruitment messages used is quite diverse. What catches the eye is that most blood establishments focus on conveying information to the donors: information on blood in general as well as on the donation process itself. With respect to addressing a potential new donor's attitude, blood establishments use patient stories and donor stories, as well as stories on heroes serving as role models.

Whether or not recruitment materials address the need among new donors to feel that others support their blood donorship remains unclear. It is also unclear if recruitment materials focus on raising the feeling of self-efficacy.

Summary: The content of recruitment messages focuses on conveying information and to a small extent on raising a donor's attitude. The positive impact of recruitment materials on a person's intention to donate will thus be relatively small. The effect on recruitment will most likely increase when the recruitment messages focuses on these factors.

- Donating blood is a good thing to do
- It generates social approval
- It can be easily accomplished: 'yes, I can be a blood donor'

It is important to notice that national and local culture will also influence which recruitment messages will be effective. For instance, many blood establishments use recruitment content that refers to the benefit to the patient because this appeals to certain highly appreciated values in their society.

5.3.4 Recruitment methods

Blood establishments in Europe use a wide variety of different recruitment methods (see Table 1). Studies where donors were asked for their initial reason to make a first donation clearly established that media appeals and *donor-recruits-donor* were the most effective means of recruiting new donors [16]. The DOMAINE survey results confirm this finding, stating that the top 5 of most effective recruitment methods is:

1. Commercials on national TV
2. *Donor-recruits-donor*
3. Commercials on national radio
4. Direct mail campaigns
5. Telephone actions

Table 1. Recruitment method

Recruitment methods	Used by % of blood establishments
Leaflets	83%
Recruitment in large companies	83%
Awareness programmes in schools	80%
Commercials on local radio	81%
Website	79%
Advertising in local newspapers	79%
Small gifts	71%
Volunteers	71%
Recruitment information in public buildings	69%
Recruitment teams at events	69%
Donor-recruits-donor	64%
Commercials on national television	62%
Commercials on national radio	62%
Cooperation with local authorities	62%
Advertising in national newspapers	60%
Cooperation with other non-for-profit organisations	57%
Commercials on local television	55%
Direct mail campaigns	55%
Student recruiters	55%
Cooperation with military forces	52%
Cooperation with police	50%
Local Red Cross	45%
Recruitment information in churches	43%
Advertising in magazines	41%
Cooperation with rescue forces	33%
Direct email campaigns	27%
Telephone marketing	24%
Replacement donors	19%
Door-to-door recruitment	14%

Media: Commercials on television or advertisements in newspapers have a large reach in announcing blood sessions or putting across the message of blood donorship. Most of these are not personalised; that is, they make an appeal to the general pubic to donate (see Table 1). Box 4 contains an example of a large-scale donor recruitment campaign in Belgium. A Swiss campaign using a London bus is described in Box 3.

Box 3. London bus campaign in Switzerland

Goals: Raising attention to blood donation and preventing a possible shortage of blood products during summer time.

Methods: From June 14th (World Blood Donor Day) until August 22 2009, a red double-decker London bus visited all major cities in Switzerland and stopped at the most frequented places. People were invited to give blood in the London Bus. Promotion was made in several ways, such as give-aways, leaflets, commitment cards and national and local media [18].

Results: 12 out of 13 blood transfusion services participated and reported very positive experiences. Also pedestrians reacted positively to the London bus. During those 55 days, 2245 donations were collected, mainly from new donors, who probably would not have come to donate in a blood collection centre.

London bus campaign results (from 14.06.2009 to 22.08.2009)

Blood Transfusion Service	Number of donations London Bus	New donors London Bus
1	838	381
2	152	84
3	93	not available
4	35	19
5	144	97
6	137	19
7	55	not available
8	18	10
9	0	0
10	649	not available
11	46	24
12	178	107

Figure 3. Swiss London bus campaign

Box 4. Media campaign in Belgium

The Belgian Red Cross launched a large media campaign in 2009 in order to recruit new donors. Every month, one or more Belgian celebrities took up the challenge to recruit 4,000 new blood donors. Together, the celebrities recorded a song and a video for the campaign. The TV hosts, actors and singers used various media to draw the attention of potential donors: newspapers, national and regional TV, SMS, websites, blogs and events [17].

Personal contacts: It is important to have family or friends who support blood donation or donate themselves [8, 13, 19]. Interpersonal contact with friends, relatives and peers serves as a strong motivational tool and is often the main reason or one of the main reasons for donating blood for the first time [9, 20-23, 25]. Furthermore, existing donors are often very willing to help and try to recruit friends or family [24].

The *donor-recruits-donor* or the *bring a friend along* method entails a different way of recruiting new donors. Its strength lies in the direct influence of the donor on the potential new donor. Box 5 shows the Dutch d*onor-recruits-donor* approach.

Box 5. Donor-recruits-donor in the Netherlands

Sanquin uses the *donor-recruits-donor* campaign when new donors are needed at specific collection sites or when donors with a specific blood group are required. Donors receive an information package at their home address, containing registration forms in the form of postcards and an information leaflet. The information leaflet explains more about the recruitment need, and provides the donor with examples of how to address the topic of blood donation amongst prospective donors. The donor can use the registration forms as give-aways to serve as a reminder and a stimulus for the prospective donor to register and give blood.

5.3.5 Target groups

It is common practice for most blood establishments to target some of their recruitment efforts towards the following specific donor groups.

a. Young donors
b. Ethnic groups
c. Specific blood groups

a. Young donors

The DOMAINE survey indicates that about half of the blood establishments have recruitment campaigns directed at young people (under 25 years old). The underlying idea is that young donors can guarantee the blood supply for a longer time than older donors. However, young donors do show higher deferral rates related to lifestyle; they experience more complications, and they stop donating more frequently than other age groups [25-28].

Young donors and recruitment methods

Recruitment campaigns targeting young people are quite diverse. The DOMAINE survey indicates that European blood establishments use the following methods.

- Educating young people still at school, providing information about the need for blood, the blood establishments and the donation process
- Recruiting student recruiters to specifically target potential new donors among students through direct contact, i.e. *donor-recruits-donor*
- Using new media technologies, such as web-based advertising campaigns, email and text (SMS) messages

b. Ethnic groups

As a result of blood group polymorphism, distinctive blood types have evolved in populations around the world [29]. There are biological and genetic differences in the various blood types and blood composition. For instance, African people, or people with African ancestry, might need red blood cells with or without specific antigens in relation to hemoglobinopathies (e.g sickle cell anaemia). Finding rare blood types for transfusion practices can be challenging; yet, historically, ethnic minorities are substantially underrepresented in the donor pool [30].

Given the predominantly white donor pool, increasing the participation and the retention of ethnic minority donors is imperative, in order to make sure that matching blood products are available to all patients [30, 31]. Although recent trends in immigration across Europe emphasise the need for recruitment campaigns among different ethnic groups, few blood establishments do actually employ such strategies.

Specific strategies for (ethnic) minorities

The DOMAINE survey revealed that only one out of ten blood establishments directs special attention towards designing recruitment campaigns targeting ethnic minority blood donors and/or cultural minority donors. One method is highlighted: the use of an anthropological approach to recruit donors in an immigrant community living in a large city in France. By addressing people directly, with a culturally adapted message, migrant donors were successfully recruited [29].

c. Specific blood groups

Some chronic patients depend on long-term and special blood transfusion needs (see also Chapter 9 on multiple-transfused patients). For instance, patients with thalassaemia, an inherited blood disorder that affects the production of normal haemo-

globin, depend on long-term blood transfusions. Thalassaemia is particularly prevalent among Mediterranean people, and is demanding in terms of quantity of needed blood transfusions. These multiple-transfused patients are especially vulnerable to antibody formation, and reactions to blood components. Therefore, they need blood transfusions with a compatible and known phenotype.

Another target group that is often addressed in blood banking practice is the group of donors with O negative blood. The DOMAINE survey showed that around 40% of the blood establishments use recruitment campaigns directed at O negative donors.

Specific recruitment strategies for chronic patients

A possible recruitment strategy is that of telling donors that their gifts are important because they are especially destined for a patient with long-term transfusion needs. By providing this information, donors can be recruited to form donor panels, serving a single patient.

Specific recruitment strategies for O negative donors

The DOMAINE survey indicated that in order to recruit O negative donors, some blood establishments rely on the O negative donors themselves to recruit potential new donors amongst their family members.

SECTION 5.4

OPERATIONAL MARKETING TOOLS FOR RECRUITMENT

5.4.1 Introduction

Operational marketing, the second phase in the donor marketing cycle (see Section 5.2), aims at increasing the number of donors that attend a blood session. Recruitment activities are directed towards communicating the need for blood and advertising the possibility of donating blood on a regular basis. Operational marketing is about calling donors to action, urging them to come to a blood session and to make a donation. Marketing tools are directed towards both first time donors and existing donors.

5.4.2 Recruitment methods

A variety of recruitment methods exist throughout Europe for calling (potential) donors to action. The methods can be divided.

(a) personal invitations to urge known donors to come and donate
(b) donation appeal to the general public, both donors and non-donors

Both methods contain a clear recruitment message focusing either on an invitation to donate, or more generally, on information about donating possibilities or donation sessions in the near future. It is common practice to present (potential) donors with small gifts, as tokens of appreciation. In the subsections below, both methods and the use of small gifts will be discussed.

5.4.3 Personal invitation methods

When known donors are urged to visit the blood establishment to make a donation, blood establishments employ multiple invitation methods. Personal invitations methods listed in the DOMAINE survey are displayed in Table 2.

Table 2. Personal invitation methods

Personal invitation method	Used by % of blood establishments
Sending letters	88%
Invitation by telephone call	88%
Sending text messages by SMS	60%
Sending emails	48%

All of these invitation methods assume that those invited to donate do not always show up; therefore, more invitations have to be sent out to get the proper number of attending donors. One strategy to handle this uncertainty is to allow donors to make an appointment for their subsequent donation while they are still at the blood establishment for their current donation.

It is worth noticing that some recruitment campaigns are especially designed to target young people and urge them to visit a blood establishment and come in to donate. Several methods are listed by the DOMAINE survey.

- Sending birthday cards to donors having their 18th or 19th birthday
- Awareness programmes in schools
- Web-based advertising campaigns
- Organising special events for young people

5.4.4 General notifications

Apart from the personal invitation methods, more general notifications of time and place of future blood sessions are also widely used. These notifications appeal to both the donor and the general population. Most of the European blood establishments use general notifications by the (local) media (e.g. newspapers, radio, television). Some blood establishments invite the public through their website or through posters in places such as community buildings, churches and shops.

5.4.5 Information for first time donors

Donors who first visit the blood establishment receive a lot of information once they actually present themselves to donate. Apart from the information that is used in recruitment materials (see Section 5.3), first time donors are provided with information as stated in the Commission Directive 2004/33/EC [32]. This Directive states in article 2 on the provision of information to prospective donors that member states shall ensure that blood establishments provide prospective donors of blood or blood components with the information provided in Part A of Annex II (also see Section 13.2 Ethico-legal considerations). Blood establishments from EU member states are obliged to provide their donors with the information as stated in the Directive (see Box 6).

In addition to this information, the majority of blood establishments in Europe provide their donors with supplementary information on various topics. The DOMAINE survey showed that most blood establishments present their donors with information on the donation procedure, eligibility criteria, blood groups, the way collected blood or blood components are processed, various blood safety tests and other forms of donation, such as bone marrow and organs.

Box 6. Commission Directive 2004/33/EC annex II. Information requirements, part A [32].

Information to be provided to prospective donors of blood or blood components

1. Accurate educational materials, which are understandable for members for the general public, about the essential nature of blood, the blood donation procedure, the components derived from whole blood and aphaeresis donations, and the important benefits to patients.

2. For both allogeneic and autologous donations, the reasons for requiring an examination, health and medical history, and the testing of donation and the significance of 'informed' consent.
   For allogeneic donations, self-deferral, and temporary and permanent deferral, and the reasons why individuals are not to donate blood or blood components if there could be a risk for the recipient.
   For autologous blood donations, the possibility of deferral and the reasons why the donation procedure would not take place in the presence of a health risk to the individual whether as a donor or recipient of the autologous blood or blood components.

3. Information on the protection of personal data: no unauthorised disclosure of the identity of the donor, of information concerning the donor's health, and of the results of the tests performed.

4. The reasons why individuals are not to make donations which may be detrimental to their health.

5. Specific information on the nature of the procedures involved either in the allogeneic or autologous blood donation process and their respective associated risks. For autologous donations, the possibility that the autologous blood and blood components may not suffice for the intended transfusion requirements.

6. Information on the option for donors to change their mind about donating prior to proceeding further, or the possibility of withdrawing or self-deferring at any time during the donation process, without any undue embarrassment or discomfort.

7. The reasons why it is important that donors inform the blood establishment of any subsequent event that may render any prior donation unsuitable for transfusion.

8. Information on the responsibility of the blood establishment to inform the donor, through an appropriate mechanism, if test results show any abnormality of significance to the donor's health.

9. Information why unused autologous blood and blood components will be discarded and not transfused to other patients.

10. Information that test results detecting makers for viruses, such as HIV, HBV, HCV or other relevant blood transmissible microbiologic agents, will result in donor deferral, and destruction of the collected unit.

11. Information on the opportunity for donors to ask questions at any time.

5.4.6 Gifts

The Council of Europe promotes the principle of voluntary and non-remunerated donation of blood or blood components. This principle restricts the methods and materials that can be used in the recruitment (and retention) of donors [33]. It is stated that donors will not receive payment 'either in the form of cash, or in a kind which could be considered a substitute for money'. However, 'small tokens, refreshments and reimbursements of direct travel costs are compatible with voluntary, non-remunerated donation'. [34].

A wide variety of gifts, mostly small consumer goods, is widely accepted and used by blood establishments to express their gratitude towards donors (see Box 7). These gifts are also often used as recruitment materials at fairs or events to attract attention towards blood donorship.

Box 7. Examples of gifts used by European blood establishments

- Arm reflector
- Bandanas
- Bags
- Bookmarks
- Bicycle saddle protection
- Badges
- CDs
- Calendars
- Chocolate
- Cups
- Caps
- Condoms
- Candies
- Car refresher
- Diary
- Euro converter/ calculator
- Flashlights
- First aid kit for motor drivers
- Honey
- Ice-scrapers for car windows
- Key cord/key ring
- Little back packs
- Matches
- Mugs
- Mouse pads
- Magnets
- Notepads
- Pens
- Pins
- Playing cards
- Post-it pads
- Plasters
- Ponchos
- Phone charms
- Plaids Reflectors
- Recruitment cards Rulers
- SMS cards
- Stress balls
- Socks
- Stickers
- T-shirts
- Toys
- Towels
- Tea cups
- Table watches
- Teddies
- Umbrellas
- USB sticks
- Water bottles
- Wrist purse
- Writing pad

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DONOR RETENTION

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CHAPTER 06

SECTION 6.1 MARKETING AND RETENTION

6.1.1 The four marketing phases

Donor retention may be defined as a set of actions implemented by blood establishments in order to encourage donors to become regular donors. Regular donors usually contribute the major part of the blood product supply and are considered to be the safest donors with regard to the risk of transmissible diseases [1-4]. For these two main reasons, optimising donor retention is, besides donor recruitment and pre-donation donor selection, a key factor in maintaining a safe, stable and sufficient blood supply for patients needing transfusions [5].

The methods used to recruit and retain donors mainly consist of marketing and communication strategies. In Chapter 5 Recruitment (Section 5.2) the marketing cycle and activities employed in blood donor retention are described using four marketing phases: positioning marketing, operational marketing, relationship marketing, and recognition [6]. This chapter describes the different tools that are currently used by the blood services for each of the four phases of donor marketing aimed at developing donor retention. The crucial importance of performance indicators and donor satisfaction surveys will also be reviewed.

SECTION 6.2 POSITIONING MARKETING TOOLS FOR RETENTION

6.2.1 Aims and methods used

Positioning marketing aims to raise public awareness about the need for blood. For donor retention, these marketing methods are a means of sustaining donor's motivation and to encourage them to donate again.

This phase of marketing uses various methods, and recruitment and retention methods are often combined. The DOMAINE survey on donor management in Europe indicates that the following tools are often used by blood establishments.

Table 1. Communication tools for donor recruitment and donor retention

Tools	Blood establishments using the tool
Leaflet drops	83%
Commercials on local radio	80%
Information displayed on website	79%
Advertising in local newspapers	79%
Commercials on national radio	62%
Commercials on national television	62%
Direct mail campaigns	55%
Involvement of volunteers in donor retention	19%

SECTION 6.3

OPERATIONAL MARKETING TOOLS FOR RETENTION

6.3.1 Conditions for success

The objective of operational marketing is to take action to increase the number of blood donors who attend every blood collection session in the area served by the blood establishment.

Two conditions are required to succeed.

- **Targeting,** i.e. adapting the communication tools and messages to different donor segments.
- **An up-to-date donor data base.** This is an essential tool needed to analyse the different donor segments.

Targeting allows for concentrating efforts on the most promising current and potential donors. A good understanding of the different donor segments is necessary in order to meet the needs and expectations of donors and to develop targeted donor retention programs with a differential approach for specific donors.

6.3.2 Non-personalized tools

Donors can be called to action through various non-personalised tools. The DOMAINE survey on blood donor management indicates that periodicals, magazines and donor newsletters are regularly issued by about 29% of the blood establishments: most issue two or three periodicals per year. Mailings, leaflets, posters, local newspaper, placards, and banners are common tools often used to advertise a blood drive. However, the exact frequency of their use remains unknown.

Some recent experiences have demonstrated that social networks and smartphone applications can be used for both donor recruitment and donor retention. EFS Alsace has developed a smartphone application that provides information about the current need for blood (Figure1). The application can be loaded by everybody from a public website.

The application enables donors to find the closest donating opportunity on their smartphone. It gives up-to-date information on the address and the opening hours of the collection venue closest to the donor (date, opening hours, location with maps and itineraries to the collection sessions). The EFS application also includes a simplified version of the pre-donation health questionnaire, which allows a donor to self-defer in case of evident contraindication. In this way, donors can avoid an unnecessary visit to the blood collection centre. The application thus forms a tool that can be used in operational and retention marketing. EFS Alsace also offers the same information as provided by the smartphone application on a Facebook page.

Figure 1. Iphone application developed by EFS Alsace

Blood establishments increasingly use social networking websites such as Facebook, MySpace and Orkut for recruitment and retention purposes. These allow people to build an on-line social network. They usually consist of a representation of each user (often a profile), his/her social links, and a variety of additional services. Social networking sites are used by millions of people, many of whom have integrated these sites into their daily practices. Box 1 gives more information about the IBTS Facebook site. The North Estonian Regional Hospital uses an Orkut page for social networking: www.orkut.com. After logging in, the user can visit the community 'I am a donor'.

Box 1. IBTS Facebook page

The Irish Blood Transfusion Service (IBTS) launched a Facebook page in spring of 2009: www.facebook.com/giveblood. This Facebook page had almost 10,000 'fans' after one year. The social networking site allows the IBTS to talk to donors, blood recipients and supporters in a less formal way.

The objectives for the page were to interact with the fans in a positive and proactive way and to use the page as a medium to answer queries and dispel myths about giving blood. As blood establishment communications are mostly one-way and always call on people's time and generosity, Facebook gives the blood establishment an opportunity to thank their donors. It also provides donors with a space to tell their stories. The main investment for a Facebook page is time and, more importantly, accurate timely responses to messages and medical and eligibility queries from fans.

6.3.3 Personalised tools

Personal mailings to activate known donors to present themselves at a blood establishment and make a donation are another means of recruiting known donors. Personal mailings can consist of invitation cards, personalised letters, E-mails, or text (SMS) messages. It is very difficult to know the proportion of blood establishments using these tools, or to assess their effectiveness.

EFS Alsace has further developed and personalised the application for smartphones as described in subsection 6.3.2, in ways that will enable the donor to access his/her donation history, be informed of the possible date of the next donation, and to be reminded of the next planned donation session.

6.3.4 Telemarketing

Telemarketing consists of telephoning a known donor in order to recruit him or her for a next donation. The effectiveness of telemarketing can be assessed rather easily, and seems to be high when the message is clearly defined and targeted to the donor segment.

Few blood establishments use telemarketing as a tool for making appointments for donors who are invited to donate at a fixed site. Telemarketing is even less often used for inviting large numbers of donors. Some blood establishments subcontract these telemarketing activities to external companies.

6.3.5 Directed donor retention programmes

It would be a simpler world if there was a 'one size fits all' golden rule in voluntary blood donor retention. Unfortunately, our blood donor volunteers have busy life styles. Social commitments, work demands, and health considerations can all impact on their ability to remain regular blood donors. The development of directed donor retention programs for specific donor groups (e.g. first time donors, regular donors, inactive donors, deferred donors or first time volunteers of a younger age group) is important in maintaining enough active voluntary blood donors.

New donors

Personal contact between a new donor and the blood establishment is important when inducing a second donation in new donors. Especially during the first donation process, as well as immediately afterwards, it is crucial to make personal contact between the donor and the blood establishment in order to build a good relationship.

Donors with a specific blood group

The DOMAINE survey on blood donor management shows that around 62% of the blood establishments use specific blood group recruitment measures. Such measures are closely linked to the blood supply situation and aim at maintaining equilibrium between donor and recipient blood groups and phenotypes. In countries where shortages occur, these programmes are used to correct specific blood group shortages. These campaigns not only answer short term requirements for a specific blood group but also reinforce the awareness that there is a constant urgent need for blood, thereby also enhancing donor retention.

It is important that 'silence periods' are maintained between subsequent donation appeals in order to prevent volunteer fatigue, preventing a situation where the same volunteers are approached too often. The people administering blood transfusions have to be reminded regularly of the pressure on donors with, for instance, O Rhesus-D negative blood type.

In countries where blood shortages are common, television, radio and external advertising play a major role in volunteer blood donor retention. Different messages can be broadcast.

- 'We have a constant urgent need for blood donors'
- 'Blood donors, be there before the crisis turns up'
- 'Blood donors, help others'

The help of 'patient ambassadors' can be very useful here. Currently active blood donors also benefit from these motivational messages, by reinforcing a donor's attitude towards blood donation.

'No show' donors

Most blood establishments continue to issue donation invitations following a 'no show', i.e. a donor not presenting after receiving a donation request. The number of 'no shows' accumulated before blood establishments intervene varies widely across. It can be argued that the longer the period before intervention the lower the eventual response rate and return of 'no show' donors to active blood donation. A standard of intervening after three or four 'no shows' may be deemed suitable. It is important that the blood establishment seeks clarification of the current donor status and issues communications such as 'Missing You, please let us know if you have any change in circumstances'. Such communications should be as personal as possible, and ideally communicated by telephone or direct mailing.

Temporarily deferred donors

Generally, the DOMAINE survey shows that most blood establishments (74%) have a special programme to encourage the return of deferred donors. Several special programmes are used, and most blood establishments use multiple programmes. They include the following.

- Immediate counselling and encouragement of deferred donors to return and try again in the future
- Sending a new return invitation to temporarily deferred donors, either by regular mail, email, or by phone
- Specific contact with the donors at the end of the deferral period

- Special programmes for donors who are deferred due to low haemoglobin level
  - Prescribing iron supplements
  - Measuring ferritin level
  - Referring donors with a low haemoglobin level for a medical check-up

Inactive donors

Inactive donors are classified as donors who have donated before but not within the last 24 months. It should be noted that any donor who has reached this point will already have been issued several donor invitations and perhaps blood group specific reminders and even a 'missing you' initiative. When a donor is labelled as an inactive donor, it may be prudent to establish whether the donor relationship with the blood establishment is still in effect.

Almost 75% of European blood establishments have a special programme in place to deal with inactive donors. Some blood establishments have special programmes for donors whose repeated 'no show' inactive status was initially caused by a deferral. One blood establishment issues a final invitation with the message that volunteers will be taken off the active donor list and will receive no future session invitations when they do not respond to the final invitation. However, if volunteers do attend, their full donor relationship continues automatically. It is important that the reason for 'no show' is evaluated before any conclusive action is proposed.

SECTION 6.4

RELATIONSHIP MARKETING TOOLS FOR RETENTION

6.4.1 Introduction

Relationship marketing mainly consists of creating customer service intended to trigger first time donors to repeat their donation in order to become regular donors, and possibly even multi-gallon donors. The main tools used are the following.

- Developing a positive donor experience
- Establishing personalised contact between the donor and the blood establishment
- Devising specific methods for relating to first time donors

6.4.2 Developing a positive donor experience

The volunteer blood donor will already have an established positive attitude towards blood donation. This positive attitude might stem from previous exposure to motivational advertising, from family or peer group respect, or knowledge of patient benefit. Blood establishments must seek to maintain and develop this positive attitude and ensure that operational activities and customer service do not erode this key and prime motivation to volunteer as a blood donor.

Box 2. Areas most cited as adversely affecting customer service.

- Waiting time
- Procedures (call up, donation process, refreshments)
- Venue limitations (accommodation, parking, privacy)
- Staff behaviour/attitude
- Donor deferral
- Opening hours
- Insufficient information (lack of information leaflets/session details)
- Clinical care

The DOMAINE survey highlighted the most common complaints from 29 European blood establishments. It revealed that most donor complaints relate to waiting times, logistical problems at the blood centre, staff behaviour and donor deferral (see Box 2). This suggests that blood establishments should work towards continuous improvement in two main areas; first, at the collection venues and organisation (Subsection 6.4.3); second, on staff attitudes (Subsection 6.4.4)

6.4.3 Collection venues and organisation

Location

Fixed site venues benefit from being designed for the purpose of collecting blood, and, therefore, should maximise maintaining a welcoming ambiance (merchandising). However, even fixed sites may have access limitation and parking restrictions that can curtail donor opportunity. Mobile or temporary community donating opportunities will tend to have constraints that may affect the session lay out, donor access, and heating and lighting. Volunteers should be made aware that some of the factors impinging on the whole donation experience may often be unavoidable.

Waiting time management

The most common cited complaints heard from donors in European blood establishments relate to waiting times being too long. There are many reasons for prolonged waiting times, (see Box 3).

Box 3. Causes for prolonged waiting times

- Delays in opening the blood centre
- Insufficient staffing
- Limited number of beds available
- Peak of donors arriving at the same time
- Lack of team work
- Increased response due to donor appeals

Donate by appointment grid systems, which are derived from the donation process mapping can be modified to accommodate some of the above cited time-related problems. This might be the only practical solution to what is a widespread and complicated factor in providing an optimum donor experience. Around 55% of the European blood establishments currently have *donate by appointment systems* (81% for aphaeresis).

Reading materials: Making available reading materials, TV-displays, internet access, WiFi-spots and refreshments can be helpful in alleviating waiting time complaints. However, this is not a long-term solution.

Donating opportunity

Blood establishments will never be able to accommodate all potential volunteer blood donors at times convenient for them. However, inconvenient opening hours are clearly a significant cause for complaint amongst volunteer blood donors (see Box 2).

Currently around 92% of European blood establishments' whole blood is collected during weekdays. Blood establishments must ensure that collection planning staff are aware of changes in social habits – such as daily activities, working hours or hobbies – which may demand a change in opening hours. Whenever possible, planning departments should try to offer an opportunity to donate that is also convenient for the majority of volunteers (see Box 4).

Box 4. Criteria for creating an opportunity to donate

I. Opening hours
- Morning/afternoon/evening donating preference
- Day of the week preference
- Weekend opportunity
- Regular donating opportunity (e.g. six days a week)

II. Location
- Geographical convenience (town, village, high street)
- Close or at the working environment of donors
- Close to public spaces, such as shopping malls, markets, sports facilities.

6.4.4 Staff attitude

Educating the frontline staff about donor care and personal communication is an important means of developing successful donor retention. To this end, blood establishments use the powerful instrument of face-to-face communication and should be aware of the sweeping impact of this tool.

Besides medical and operational issues, frontline staff have the unique opportunity to further motivate the donor and strengthen his or her positive attitude in a one-to-one situation. It is crucial that frontline staff be able to express convincing gratitude that the donor has appeared. Immediate and personal feedback on the significance of his or her donation is important. Such feedback may consist of recent patient ambassadorial stories, blood stock status and current donor response limitations. Consequently, frontline staff deliver a forceful message that highlights the importance of a donor's next donation. Blood establishments should have comprehensive and ongoing customer service training programmes that stress the crucial importance of donor care and donor relationship activities at blood collection venues.

- **Welcome:** A hearty welcome is the key to evaporating negative feelings caused by unavoidable limitations such as waiting times, collection hours, food and beverages. It requires well developed communications skills by the frontline staff and blood establishments are well advised to invest in the development of their social skills.

- **Donor deferrals:** Handling donor deferrals requires particular customer service skills. Donor deferrals can cause frustration and disappointment, and require sensitive management and a clear notification of the end of the deferral period (see Section 8.3 Counselling services).

- **Post donation:** In the post donation period, communication tools focus on donor reactivation. This may include use of *Thank You* communications (letter, text, telephone calls) immediately following donation. A good donating experience followed by a *Thank You* could significantly improve donor loyalty, and increase the chance of a positive response to future donor session invitations.

- **Donor relationship management** is becoming increasingly important. Ideally, each contact between a donor and the blood establishment should be recorded, so that a full picture of the blood donor is maintained. This is particularly and increasingly important in terms of donor self-deferral. The benefit of avoiding unnecessary failures to present at sessions is clearly evident. However, the donor preferably communicates this decision to the blood establishment and this decision should be recorded for future donor communication and relationship policy. For donor relation management, a reliable computerised donor record system is required (see Chapter 12). Contacts may be positive (e.g. self deferral) or negative (donor complaint).

6.4.5 Establishing personalised contact between donor and blood establishment

The main tools used to develop a long term relationship, in addition to the ones presented above, consist of donor cards and information to donors on their donation history.

Donor card

The DOMAINE survey on blood donor management shows that in the majority of the blood establishments (93%), donors have a personal donor card. Generally, the donor card is perceived as giving the donor a feeling of belonging to an organisation that is committed to meeting the blood requirements of patients.

In the future, by adding a specially designed application, it may be possible to use a smartphone as an e-donor card. However, it needs to be guaranteed that the e-donor card is strictly confidential and contains the same information as the traditional donor card (name, contact details, blood group, etc.). The e-donor card may also provide the donor with restricted personal access to his or her personal donor history.

Information to donors about their donation history

The DOMAINE survey shows that the majority of blood establishments (62%) inform their donors about their personal donation history. The content of the information provided to the donor varies.

All blood establishments inform the donor during the selection process, at least orally. They provide information on pre-donation haemoglobin testing results, blood pressure and pulse (when available) and any reasons for deferral. Some blood establishments indicate to the donor the reasons for changing the kind of donation (e.g. platelet aphaeresis converted into plasmaphaeresis, depending on the supply situation).

All blood establishments inform the donors, either orally or in written form, about their number of donations. This is very important, as it directly reflects the retention effectiveness. In addition, a few blood establishments provide the donor with a written document at the end of the selection process to indicate the date from which the next donation is possible. This can be an occasion to fix an appointment for the next donation, when the current organisational arrangements permit it. Finally, all the blood establishments inform the donor about abnormal testing results (see Chapters 7 and 13). This is always done to inform the donor about contraindications for future donations.

The way the information is conveyed to the donors varies greatly. Information may be given either at the session itself, or through a letter, via a personal donor card or through online availability. A common way to convey this information to the donor is in written form at the end of the selection process.

6.4.6 Specific measures for new donors

The first step along the blood donor donation career provides the ideal opportunity to establish a relationship between the voluntary blood donor and the blood establishment. Showing gratitude after the first donation could elicit the membership stage. A tangible way to institutionalise the feeling of membership is to install a Blood Donor Membership Club or Donor Association. The latter may also be an initiative of a group of donors. Discussion/information topics and activities of such clubs or associations may include any or all of the ones mentioned in Box 5.

Box 5. Suggested discussion/information topics for donor associations or donor clubs

Donations
- Frequency of invitation to donate
- Details of donor loyalty programmes for new donors such as three donations in two years or Club 25 for younger volunteers
- Communication of blood group
- Format for notifying volunteer of urgent blood group specific need
- Details of the post donation 'blood journey' to the patient
- Importance of informing blood establishment of any reason preventing donor presenting to donate
- Details of health selection criteria or indication where details can be found, on-line web address for example

Recognition
- Thank you for your donation letter/patient ambassadors
- Information on recognition/awarding activities
- For new donors recruited via their work, some form of corporate recognition may be suitable
- For new donors recruited via school, college or university, some form of 'keep in touch' message may be suitable.

Logistics
- Details of blood donating venue that donor will be invited to attend including the nearest 5/6 day a week donating opportunity
- Information relating to session attendance such as 'drop in no appointment necessary' or 'call for an appointment'
- Details of new donor retention strategy (e.g. we will call/telephone/text/write before your next donating opportunity)

Administrative
- Importance of notifying blood establishment of any change in contact details
- Details for forwarding complaints or suggestions

SECTION 6.5

RECOGNITION

6.5.1 Introduction

Recognition aims at acknowledging the extraordinary gesture made by donors; it generates a sense of pride and is essential to keep donors willing to repeat their donations. Recognition allows the blood establishment to develop a good donor relationship. This can be done either immediately after the donation, or in connection with a donor's preceding donations.

6.5.2 Immediately after the donation

Post donation recognition is the last step before donors leave the donation centre. It often contributes to a good memory of the donation experience and the collection team. A donor who leaves the donation centre smiling will be more willing to come back to donate.

Refreshments: Almost all blood establishments (91%) offer their donors refreshments after having made the donation. Refreshments are either drinks alone (coffee, tea, orange juice) or drinks with something to eat, such as sandwiches, cookies or chocolate. As this is the last step of the donation process, such refreshments, even if they are simple, certainly contribute to creating a good memory of the donation experience and can facilitate the retention process in the donor's mind. This step should also be used to deliver retention messages to the donors before they leave, either orally, or in a written way, or, preferably, both.

Retention messages: Usually, the written retention messages are given simultaneously with the information required by the regulation (EC/33/2004 Directive) about the need for donors to inform the blood establishment of any subsequent event that may render any prior donation unsuitable for transfusion.

6.5.3 In connection with preceding donations

Thank you messages: The majority of blood establishments (57%) do not send a "thank you message" to the donors shortly after their donation. However, it seems useful to send such a message after a donor's first donation, as the retention of new donors is certainly one of the most difficult tasks of a blood establishment. Although this could be done by letter or card, whenever useful, it is worth considering using a different and more modern way, such as SMS or e-mail.

Donation history: The majority of blood establishments (62%) inform their donors about their personal donation history, detailing, at least, the number of donations made. This information may be given by different means: at the session itself (at the pre-donation interview, after haemoglobin testing, on a leaflet), or through a letter, via a personal donor card, or through online availability. This information is always an occasion to encourage the donor to make a subsequent donation.

Small gifts: As a rule, blood establishments present their donors with an expression of gratitude after a donation. Sometimes these are given after each donation and or on special days (World Blood donor day, Christmas), such as pens, or coupons (e.g. to buy a sandwich, 21%). Medals, pins, brooches or certificates are other ways used by the blood establishments, and are given to the donor after a certain fixed number of donations (e.g. after having made 3, 5, or 10 donations). Donors could be awarded in official ceremonies to acknowledge a high number of donations (50, 100, etc.). They could also receive more important gifts (inscribed glassware, invitation for a dinner, etc.) after an elevated number of donations. Although these expressions of gratitude vary from one blood establishment to another, they are always considered an important means to acknowledge the donor's generosity and thus to encourage donors to make subsequent donations.

SECTION 6.6

MONITORING DONOR SATISFACTION

6.6.1 Measuring and improving donor satisfaction

Measuring satisfaction: According to the DOMAINE survey, around 76% of the blood establishments monitor donor satisfaction. Most blood establishments measure donor satisfaction regularly, by using a questionnaire that donors have to fill in. The frequency varies from daily measurement to three to four times per year, to once every four years. Though it is used by only two blood establishments, a top box questionnaire seems a very effective tool to measure donor satisfaction individually and collectively. Donors are asked to give a score ranging from 1 to 10 for several items, such as the overall donation experience, waiting time and friendliness of staff. The top box method measures the proportion of donors that give an item the maximum score: 10.

Standard questionnaire: The standardised questionnaire elaborated by the Donor Loyalty Group consists of questions about staff professionalism, staff friendliness, preciseness of directions about what to do next, venue cleanliness, finger prick test, insertion of the needle, waiting time, level of consideration shown, and overall experience. Each factor can be given any score between one and ten, where one means 'totally dissatisfied', and ten means 'totally satisfied'. This tool can give a very precise insight into these dissatisfaction motives and identify possible causes. A blood establishment can then determine and implement solutions, and survey donor satisfaction subsequently.

Benchmarking: Within a blood establishment with several collection centres and offices, this tool allows comparisons with the best (benchmarking process). This tool also allows for collecting from donors, suggestions, comments and complaints, at the same time. The analysis of this information also provides a blood establishment with the opportunity to elaborate on corrected measures, and to assess their effectiveness after they have been implemented.

6.6.2 Donor complaints

The majority of blood establishments have a complaint process rule (81%). The blood organisations use several ways in which a donor can file his/her complaint (see Box 6).

The reported experiences show that donor complaints have to be described in a Standard Operating Procedure with the following main steps.

1. Registration of the way the complaint is made (e.g. letter or telephone)
2. Acknowledgement of having received the complaint
3. Timely response to the complaint (e.g. letter between 10 and 21 days)
4. Regular analysis of the complaints and the answers given, in order to follow up on
5. the recurrence and the effectiveness of the corrective measures implemented in a continuous improvement process

The number of donor complaints received by blood establishments varies greatly. Overall, complaints in the different blood establishments throughout Europe are very much alike.

Box 6. Ways of making known one's complaints

- Orally, at the donor session
- Special complaint description form
- Written complaint in a complaint box at the donor session
- Writing a complaint in a complaint book
- Telephone
- E-mail
- SMS
- Letter
- Through Donor Associations
- Through mandated persons at an advice centre ('ombudsman')

Waiting times: The most common complaint is about waiting times being too long. Other common complaints focus on logistical problems like opening hours, parking facilities and the accommodation itself.

Staff: Some complaints are staff related, like being helped by unfriendly staff and poor staff communication with the donor.

Deferrals: Donors also object about being deferred or about not understanding the reason for deferral.

Technical: Complaints on donation complications, such as haematomas, are rather limited, but deserve a lot of attention.

SECTION 6.7

PERFORMANCE INDICATORS (PIs) FOR RETENTION

6.7.1 PIs

Typically, the number and percentage of loyal, regular donors reflects successful retention activities. Small numbers of donors stopping for non-medical reasons are another PI of retention. The PIs most often used in retention activities are the following.

Actual donor base

- Number and percentage of regular donors in the donor base
- Trend in the number of regular donors

Donor loss

- Percentage of inactive donors in the donor base
- Percentage of lapsing donors in the donor base
- Donor attrition. This index, used in the field of charity donation, has a strong similarity (but is not equal) to the percentage of inactive donors in the donor base. The difference lies in the numerator for the ratio. For calculating inactivity one uses the total number of donors in the actual time period (e.g. this year and last year). For attrition one uses the number of donors who actually donated in the previous time period (the previous year).
- *Definition of donor attrition:* of those donors that did give blood in the year before, the percentage of donors who did not give blood in the year of concern.
- Percentage of stopped donors in the donor base in a given year
  - In the total number of donors
  - Subdivided per reason of stopping, such as age, medical reason, recurrent no-show, migration. Standardised exit interviews on samples are required to gain insight in reasons for stopping

Donor regain

- Percentage of returning donors in the donor base in a given year
  - In the total number of donors
  - In the number of inactive donors

Costs

- Costs of recruitment and retention activities (in euro's) per donation

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COLLECTION

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CHAPTER 07

SECTION 7.1

ORGANISATION OF COLLECTIONS

7.1.1 Introduction

Well-organised sessions are an important element of donor management, as they ensure sufficient collections and stimulate donors to make subsequent donations. This chapter deals with various aspects of blood collection: the initial organisation, facilities, logistics, performance indicators, donor selection, managing deferrals, and bleeding procedures.

Successful donor recruitment and retention activities will bring prospective donors to one of the blood collection centres managed by the blood establishment. In order to achieve a blood establishment's main goals, it is crucial that a positive impression of this visit on prospective donors is generated.

Sections 7.1 to 7.4 identify, collate and share 'good elements' in collection infrastructure. The sections enable blood establishments to optimise their collection planning management, facilities, logistics, organisations, and infrastructure, and also to measure, assess and improve the performance of the collection process.

The following steps and factors will need to be managed.

Donor satisfaction

- Continuously improve donor satisfaction by giving donors a good donating experience, and encouraging repeat donations
- Follow the current standards of quality and safety for the donor in the collection process, from welcoming the donors to the session and ensuring that they leave happily
- Get community credibility and support, based on the quality of the services provided

Standards

- Collect the appropriate number of blood units and blood products (aphaeresis) to meet the blood demand of the patients
- Meet quality regulations for blood and blood products that will be administered, to patients either directly (labile blood products) or indirectly (plasma derived products)
- Continuously improve the performance of the collection process based on quantitative indicators

Staffing

- Maintain staff working conditions at an acceptable level, to achieve the two previous objectives

7.1.2 Three main collection site types

- **Fixed sites**: locations where blood session materials are permanently present
- **Mobile sites**: locations where blood session materials are not permanently present. Materials have to be transported to and from the location at each session.
- **Mobile vehicle sites**: locations that are visited by a mobile vehicle. The vehicle is a truck or trailer with all blood session materials inside. The donor donates inside this vehicle.

The number of collection locations and the proportion between the different existing types of locations varies considerably between blood establishments. The DOMAINE survey on donor management in Europe (see Chapter 2) recorded the following range of statistics.

- **Fixed sites:** the number of fixed sites in the participating blood establishments ranged from 1 to 156
- **Mobile sites:** the number of mobile sites from 0 to 13,294
- **Mobile vehicle sites:** the number of mobile vehicle sites from 0 to 4,810

In Europe, fixed sites constitute a small fraction of all collection locations. Predominantly, mobile sites are used, but mobile vehicle sites also appear regularly. Most blood establishments collect blood on both fixed and mobile (vehicle) sites, whereas just a few blood establishments collect all blood at fixed sites only. In most blood establishments, the proportion of fixed sites is about 2-3%, while the percentage of mobile sites is more than 90%.

Mobile sessions may be organised in various sites: market places, shopping centres, business parks, companies, universities, schools, churches, hotels, etc. It is recommended that, whenever possible, locations are chosen in accordance with, at least, the following criteria.

- Sufficient capacity to recruit and welcome expected numbers of donors in the area served by the blood establishment
- Good accessibility to donors
- Good accessibility to staff teams
- Sufficient possibilities to move all equipment and materials needed into the collection site and back to the blood establishment
- Acceptable standards of sanitary conditions and safety

Equipment: The weight of all the equipments and materials to be transported must be as low as possible so as to limit the risk of injuries for the employees in charge of transport and installation. When securing equipment, practical issues should be borne in mind such as ensuring the best fit in the mobile location and the need to facilitate ease of loading, transporting, unloading, setting up and dismantling of all session equipment.

Physical parameters: The distance between the starting and returning point and the collection site is an additional important parameter: in many blood establishments it directly influences the travelling and working time for many employees.

Appropriate roads for travel, appropriate place with sufficient space around the trailer and sufficient power supply are the main additional parameters to consider for sites that are visited by mobile vehicles.

7.1.3 Blood collection programming

Collection programming is part of the more global blood supply management. The main objectives of blood supply management are as follows.

- Avoid any shortages of blood product
- Limit the rates of outdated product

The following factors will be limited to red blood cell concentrates coming from whole blood. However, these principles can be transposed to any of the other blood products as well, including platelet concentrates, fresh frozen plasma, plasma for fractionation and, if applicable, red cell concentrates collected by aphaeresis.

General method for collection programming

Wherever they are compatible with the blood supply situation, the following programming steps, as described below, are recommended.

Advance programming: Whenever possible, plan to arrange collections in advance for the next year. This is far preferable to short-term programming in reaction to a temporary blood supply shortage or excess. Start programming collections ideally in the first quarter of the n-1 year, by establishing red cells needs for the following year (based on the assessment of previous issuing and its trend).

The distribution hypothesis achieved in such programming can be translated into the numbers of collections necessary to perform for the whole following year and then for each week of that year. A weekly collection target can be devised and then shared out among the different mobile collection sites and fixed sites of the blood establishment, based on the known history of these sites, such as attendance rates. This projection could also lead to measures intended to improve the organisation and to adjust programming to requirements. Some sites may be discontinued, and others may be started.

Collection programming for the next year will also integrate the impact of the frequency of collection sessions in a mobile location. Increasing the annual number of sessions in a mobile location often also results in increased donor retention.

Local cooperation: Collection programming must take place in close consultation with the local contacts of the blood establishment in each mobile location (see below). Blood establishments may manage programming the blood sessions by themselves or call upon the services of either the Red Cross or a donor association.

Relationship with subsequent processes: processing, testing and distribution

Collection programming must take into account its impact on the related processes of manufacturing and releasing blood products. Knowing and sharing the constraints of each of these related processes strongly contributes to coherence between each process of the 'blood transfusion chain'.

Internal staff coordination: Time schedules which may impede activities and frustrate colleagues and other employees should be taken in to account. As an example, collection planning may negatively impact working hours of processing or testing laboratories, such as working hours on the eve of a bank holiday. It is always useful to note remarks and suggestions from processing and testing managers when finalising collection planning. This applies not only to the building of next year's planning, but also to the daily and weekly follow-up and adjustments of the collection planning, taking into account the observed collection results and distribution rates. Internal communication on these relationships should, therefore, be organised in each blood establishment.

Selecting opening days and hours

The majority of blood establishments collect more blood during the weekdays than on the weekend. During weekdays, European blood establishments collect over 90% of the total amount of whole blood. Less than 8% of whole blood is collected on the weekend. Occasionally, organisations collect more whole blood during the weekend than during the weekdays.

Session timing: During weekdays, almost all blood establishments offer morning blood sessions. A smaller number of blood establishments have afternoon blood sessions and approximately half organise evening blood sessions. The wide variety of opening days and hours shows that each blood establishment has to take into account local historical and cultural factors. Two general recommendations should be kept in mind.

- The opening days and hours of a fixed side in an urban area should allow for welcoming donors during the full day. This especially applies when it performs platelet and plasma aphaeresis.
- For mobile collections, the 4-8 p.m. time slot is often suitable for a majority of donors, as it is scheduled after common working hours and before TV prime time.

Local contacts

For mobile collections, as far as possible, each blood establishment should work with local contacts to organise the whole collection process in mobile locations. These local contacts can be volunteers from blood donor associations, representatives of local or government organisations and authorities, such as companies, schools, universities, municipality services, police, or fire brigade. This relationship between the blood establishment and the local organisers may cover several items (see Box 1). When appropriate, the arrangements can be put into a contract between the blood establishment and the local contacts. It may include the fee to be paid when the blood establishment is renting the premises.

Box 1. Items to be arranged with local correspondents

- Fixing dates for mobile sessions in a given location for the next year
- Reserving the required facilities
- Checking the safety measures with a special focus on fire prevention and facility related insurance contract
- Checking the hygiene measures (cleaning of the facilities)
- Checking power supply, water supply, heating and air conditioning
- Reviewing the history of the collection site in terms of number of donor candidates welcomed and collected units in the past sessions
- Organising signage of the collection session and advertising of the session

Finally, to facilitate quality assurance and continuous improvement, the local contacts could play an important role in helping the blood establishment to assess and follow-up the collection locations and to implement local corrective measures when needed. For example, they could help to locate a new collection location when quality standards or the capacity of the current location are insufficient.

Performance of collection programming

The comparison between the number of the collections programmed (expected) and the number of collections completed may be used as a simple means to assess the performance of the programming process, at the level of each collection session (either mobile or fixed). This indicator, expressed as a percentage, is graphically illustrated in Figure 1. In this example, the blood establishment decided to review each session when this ratio was < 80% or > 120%. They analysed the reasons for the observed discrepancies, and attempted to anticipate anomalies and prevent their occurrence in the next sessions.

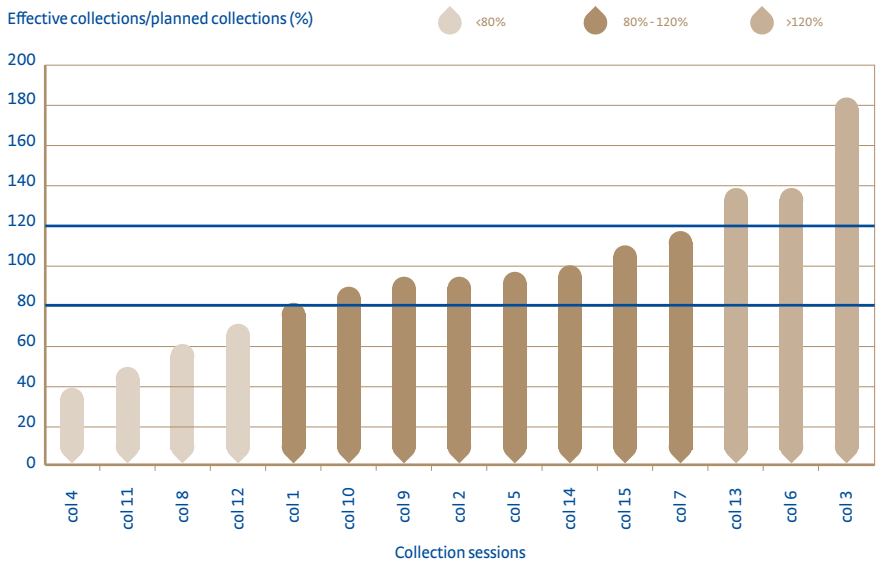

Figure 1. Measuring performance of collection planning: a simple tool to help the continuous improvement of the collection planning process

SECTION 7.2

DONATION PROCESS AND FACILITIES

7.2.1 Process flow chart and common requirements

The premises and facilities used for collecting blood and blood components, either in fixed site, mobile sites or in mobile vehicles, should always allow the organisation of the following distinct areas in a one way continuous process. A typical flow chart is presented in Figure 2 below (inspired by[1]). It is highly recommended that such a flow chart be designed for all collection processes in every blood establishment. It is also highly recommended that this flow chart be translated into a design to define the organisation of each collection venue in advance, either fixed or mobile. The primary objective is to avoid going backwards at any time and to insure the donor's safety and the quality of collected products.

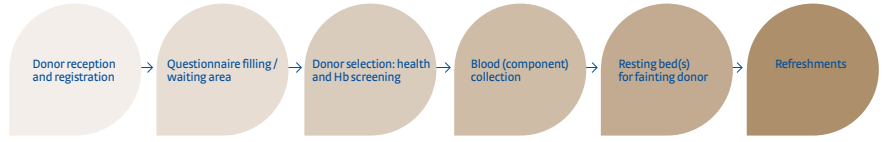

Figure 2. Example general flow chart of the collection process

7.2.2 Requirements for donor safety

The principles of 'Lean Manufacturing' are easily applicable to the donation process. They are very helpful in making the whole collection process safer for both the donor (by avoiding untoward reactions and managing those that occur), and the recipient (by the quality of collected products). The basic principles of Lean Manufacturing applied to the collection process are presented in Box 2.

Box 2. Basic Lean principles for the collection process

- Comply with the one-way continuous process so as to avoid any backward steps or crossings, which are sources of confusion
- Consider any kind of donation as a separate process and organise the activity in such a way that any employee is involved in only one process at a given time (e.g. plasmapheresis with one kind of separator and disposables)
- Try to eliminate any step of the process that has no added value to it: Value Stream Mapping
- Rank the working environment in such a way as to eliminate everything that is useless to the process and get a 'clean visible environment'
- Respect the empty line pharmaceutical principle, that consists of checking before each donation that the donor bed and immediate environment is free of any material or document from any other donor or donation
- Rank the disposables in such a way that the donor attendant could not be confused in using one disposable in an inappropriate process (e.g. citrate or saline for plasmapheresis)

7.2.3 Specific requirements for fixed sites

Collection activities in a fixed site can be related to other activities in the same building, such as processing and testing, or they can be done separately in a specific donation site. Whatever the situation, the primary objective is to plan the dimension of the collection site (number of beds) to the expected number of site donors and to make the site accessible. The location of the site is, therefore, of paramount importance, particularly for proximity to public transport and car parking.

It is also important to define and adapt opening hours. One may either choose restricted access for invited donors only, or allow spontaneous presentations of non-invited donors as well.

Organising donations on fixed sites including the possibility of making personal appointments on an appropriate diary brings overall improved satisfaction to both donors and employees.

Environment: Attention should be paid to improving the environment of donors and employees as much as possible. Decoration can be used in fashionable, yet appropriate ways. Such decoration, equipment and furnishings will all help to create a positive donation environment that is attractive, agreeable and friendly for donors, employees and volunteers.

Signage: Appropriate signage and advertising will make a collection site easily traceable and visible. This strongly helps the first three phases of donor marketing: positioning, operational and relational marketing (see Chapters 5 and 6).

In addition to the flow chart for the collection process (see above), flow charts for disposables, equipments, documents and wastes must be available as well. The form of the additional flow charts is influenced by the kind of collections performed in the fixed site, either mixed or limited to one kind of collection.

7.2.4 Specific requirements for mobile sessions

For mobile venues, the same considerations on potential number of donors to be recruited, expected number of attending donors and accessibility hold as for fixed sites. As for any collection venue, a precise flow chart of the collection process, adapted to the local conditions and constraints, should be designed for each mobile venue. An example is given in Figure 3.

Although the collection flow charts have to be adapted to each individual site and to each collection session, the application of two principles illustrated in Figure 3 is highly recommended.

Set up stations: The work of donor assistants in 'stations' of three beds instead of two is a smart way to limit waiting time between health screening and donation. In addition, donors perceive that they are actively involved, even when they are waiting for the collection on a bed.

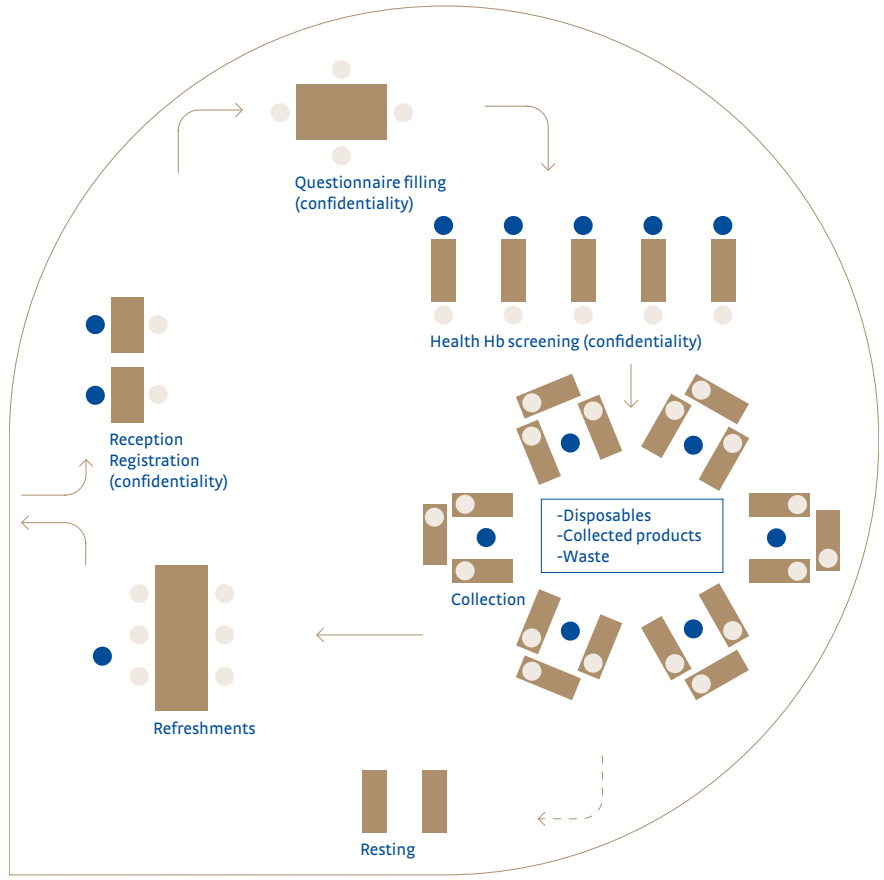

Figure 3. Flow chart for a mobile session. In this example, 2 secretaries, 5 MD's (or other required employees for health screening), 6 donor assistants and one driver were planned to participate in the session, for 125 whole blood donations expected in 3 hours (opening hours for donors)

● : donors; ● : blood establishment employees

Allocate staff space: Organising a closed internal space for blood establishment employees involved in the collection area and giving donors access to the beds only on the outside of the 'circle' is important for giving staff good working conditions, favourable to complying with Standard Operating Procedures (SOPs) and working standards. This does not impede intervention from donor attendants in case of fainting, and the need for a donor to be laid on the resting beds, near the collection area.

Whenever possible, these principles are also recommended for fixed sites and vehicle mobile collections with the necessary adaptation.

7.2.5 Validation of facilities

In all good practices, validation of premises and equipments, as well as the collection process is required.

Premises: The main items to check for collection premises' validation (either mobile or fixed) are indicated in Box 3. The validation process must lead to one of the following judgements: conformity, conformity with reservation, or non conformity.

Box 3. Current items for initial check and validation of mobile and fixed collection venues

- Vehicle accessibility
- Premises accessibility
  - Soil conditions
  - Floor(s)
  - Stairs
  - Elevators
- Capacity to organise distinct areas with appropriate confidentiality
  - Reception / registration
  - Health questionnaire filling
  - Health and hemoglobin screening
  - Collection station
  - Resting
  - Refreshments
- Absence of plants, apart from the reception area
- Capacity to limit insect and other animal entrance
- Conformity to all safety regulations
- Conformity to hygiene regulations
- Water supply
- Power supply
- Light / brightness
- Heating
- Cleanliness

Equipment: The validation of equipment and of collection process should follow the classical rules presented in any good practices for blood establishments. Traceability of every validation process is, of course, mandatory.

SECTION 7.3

LOGISTICS

7.3.1 Organisation of transport

Organise the transport of employees in acceptable comfort conditions. Organising a meeting of the team for a briefing before leaving and another meeting for debriefing at the end of the session, before the return travel, often proves to be very useful for sharing information and creating a 'team spirit'.

Equipment lists: For each mobile session, make available a list of required materials and equipment. This list is based on the number of expected donations and planned numbers and categories of employees. Assess ratios to allow the necessary quantities of disposables, materials and equipments for a given expected number of donations to be easily established and computed. Pay attention to the best ways to facilitate loading and unloading.

Transport and temperature: Organise and adapt transport of the collected products to the number and kind of products. This should take into account the travelling time between the mobile collection venues and the fixed site that serves as starting point. Maintaining a constant ambient temperature is highly recommended for transporting whole blood units, as the quality of separation between red blood cells and plasma is impacted by this temperature. The temperature parameter actually used may depend on the first step of processing. For example, some blood establishments perform a first step of leukocyte reduction using filtration of whole blood at 4°C. When whole blood is used to prepare platelet concentrates, the temperature should be maintained between 20 and 24°C until the separation process. This temperature specification is also applicable to the transport of aphaeresis platelet concentrates.

7.3.2 Cleaning

Organise cleaning and disinfection of equipments as Standard Operating Procedures (SOPs) in every collection session, either fixed or mobile. Employees and particularly donor assistants must have easy access to a water point to wash hands whenever needed.

7.3.3 Maintenance

Organise maintenance of equipments, materials and premises according to SOPs. This maintenance will follow the current rules described in all good practices applicable to blood establishments.

SECTION 7.4

PERFORMANCE INDICATORS FOR THE COLLECTION PROCESS

7.4.1 Performance indicators for collection

To continuously improve the collection process, it is essential to measure the performance of the process and to communicate the results to the teams involved. Regarding this performance measurement, the work carried out by the European Blood Alliance benchmarking group led to the main following conclusions.

- Performance measuring of the collection process should use simple indicators and be primarily focussed on each session
- For each session, an employee should be appointed as the person accountable at session level. This 'team leader' is, together with the team, responsible for analysing the indicators and finding and implementing solutions to improve performances.

At present, two simple indicators can be implemented everywhere: an efficiency indicator and a contribution indicator. A third PI can be helpful, but it requires more complex computations, i.e. the average and peak waiting time for donors.

Efficiency indicator

The simplest way to establish an efficiency indicator is to divide the number of collected units by the total number of hours worked by the staff involved for a given collection session. For mobile sessions, this may include travel time. These indicators could be expressed as either the number of collected units per hour or the number of collected units per Full Time Equivalent (*fte*). To apply this indicator to any kind of collection, it is advisable to convert each kind of donation, apart from whole blood, into an equivalent of whole blood collection. The current ratios established by cost accounting for France are given as an example in Box 4 (see also Section 3.3; they deviate slightly from the ones mentioned in Section 3.4 Financial aspects).

Box 4. Whole blood collection capacity equivalences (example)

- Plasma apheresis : 1.50
- Platelet aphaeresis : 2.2
- Aphaeresis platelet + plasma : 2.2
- Aphaeresis platelet + RBC : 2.2
- Aphaeresis RBC + plasma : 1.4
- Erythrocyte aphaeresis (two units) : 1.6
- Granulocyte aphaeresis : 2.7
- Consultation + collection for Voluntary Bone Marrow Donor: 1.0
- Consultation + collection for biological test: 0.5 (see also Section 3.3)

Figure 4 illustrates the efficiency ratio for a regional blood establishment in a given period. Recent French experience showed that the differences from one session to another could reach a factor of from one to four in the same regional blood establishment. This indicates that this internal benchmarking tool could provide managers with powerful means of analysing the causes of differences between very efficient sessions and poorly efficient sessions and to deduce the appropriate corrective measures. In the example below, the blood establishment decided to focus on sessions with an efficiency indicator lower than average – 1 standard deviation and higher than average + 1 standard deviation. It is important to choose good cut-off points in order to label sessions as efficient or not efficient.

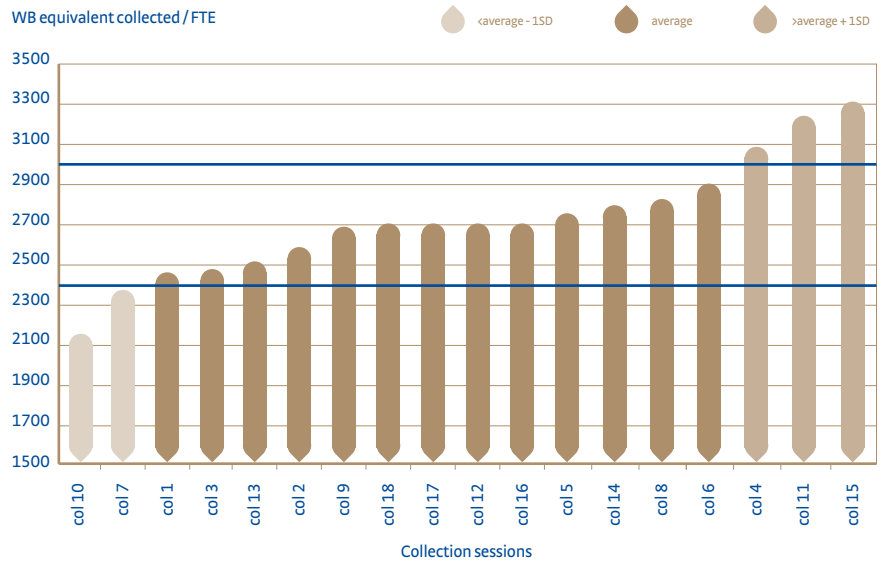

Figure 4. Collection efficiency indicator: whole blood equivalent collected/working hours in FTE

Contribution indicator

The contribution indicator may be defined as the number of whole blood units (or equivalents) collected in a given session divided by the number of whole blood units (or equivalents) collected in the corresponding week in the corresponding blood establishment site. This indicator reflects the contribution of each session to the blood supply in that week. In the example given in Figure 5, a contribution indicator lower than 1% could lead to a decision to either suppress the collection location or to stimulate this collection location to improve its contribution to the blood supply.

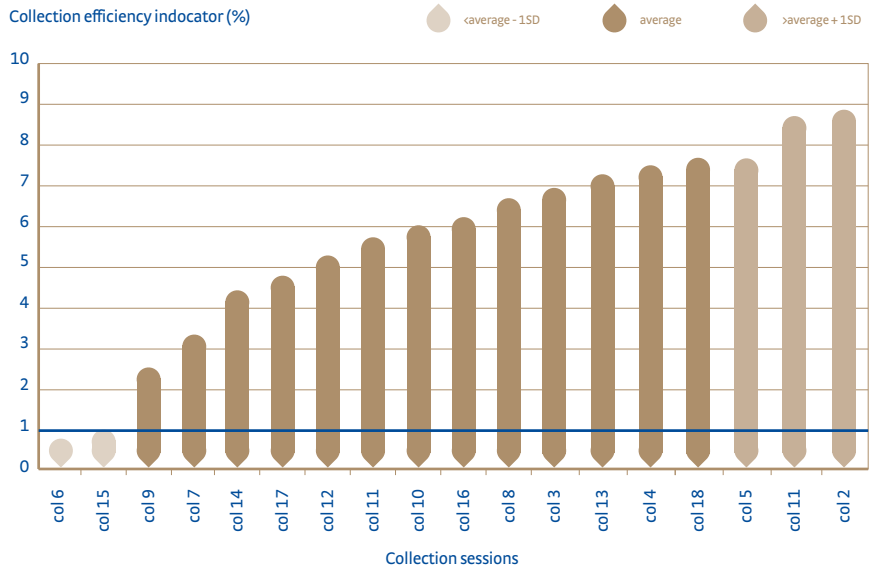

Figure 5. Contribution indicator (example). Collection efficiency indicator = the number of whole blood units (or equivalents) collected in a given session divided by the number of whole blood units (or equivalents) collected in the corresponding week in the corresponding blood establishment site x 100%.

Whatever the indicator applied by each blood establishment, it is important that each collection manager makes available simple indicators and follows them – in a kind of dashboard – on a daily basis. Using these tools can potentially have a major impact, improving collection efficiency and effectiveness.

SECTION 7.5

DONOR SELECTION

7.5.1 Introduction

Blood donor selection has the dual aim of protecting the safety of the recipient and the safety of the donor. Effective donor selection should be applied by all blood establishments so as to identify those donors who do not fulfil the criteria to give blood, either temporarily or permanently. Careful donor selection is essential for all volunteer donors regardless of their being a first time, regular or returning donor (for definitions see section 4.1). An inevitable consequence of effective donor selection is the need to defer or exclude some individuals from donating. It is essential that this is achieved without unnecessarily discouraging dedicated donors from donating in the future.

This section addresses important aspects of health assessment and donor selection. Although the EU Commission Directive 2004/33 [2] on the technical requirements for blood and blood components defines the minimum standard, it is recognised that there are differences in the selection criteria and in practice and policy across the EU member states.

This section will review these practices and identify key elements of good practice in the donor selection process. It will also outline the options for potential interventions during health screening to improve donor care and satisfaction, and to promote donor return at the end of the deferral period.

7.5.2 EU legislative requirements of donor selection criteria

In the last decade, the implementation of the EU directives on blood and blood donation, together with advice and guidance from the Council of Europe, World Health Organisation, the European Blood Alliance and other relevant bodies has played a major role in standardising and harmonising donor selection. An overarching principle is the consensus that all blood donors in the EU are non-remunerated volunteers. This requirement, together with effective donor selection, helps secure blood safety and promotes consistency across Europe.

Commission Directive 2004/33/EC [2] lays down the *minimum* technical requirements for the medical selection and health assessment of blood donors. This directive is underpinned by guidance from multiple sources.

- Council Recommendation 98/463/EC of 29 June 1998 [3] on the suitability of blood and plasma donors and the screening of donated blood in the European Community
- Recommendations of the Council of Europe
- The opinion of the Scientific Committee for Medicinal Products and Medical Devices
- Monographs of the European Pharmacopoeia, particularly in respect of blood or blood components as a starting material for the manufacture of proprietary medicinal products

- Recommendations of the World Health Organisation (WHO)
- International experience in this field

In addition, the directive defines the minimum criteria for donor selection[1, annex III], particularly in relation to the following.

- Permanent deferral criteria for donors of allogeneic donations
- Temporary deferral criteria for donors of blood intended for transfusion in patients
- Deferral for particular epidemiological situations
- Deferral criteria for donors of autologous donations

This section will not replicate the directive but the content and options will be compliant with this minimum standard. Individual member states may have additional guidance in relation to health assessment and more stringent donor deferral criteria than those required by Commission Directive 2004/33/EU. Therefore, before using any of the methods or tools, it is advisable to verify whether or not criteria comply with the requirements of a specific member state, regulatory authority, or blood establishment policy.

7.5.3 Donor selection guidelines and tools

The European Directive outlines the minimal criteria for donor selection. These form the basis for each member state's selection guidelines. It is general good practice to convert the basic criteria into more comprehensive guidelines to be used by those undertaking the donor selection process. These guidelines should include any additional criteria used by the blood establishment or required by the member state. Key elements are stated in Box 5.

The provision of donor selection guidelines to staff members has several benefits.

- Provides consistency of decision making between staff members
- Minimises unnecessary deferral
- Improves safety
- Ensures that donors have their deferral reason explained clearly and accurately

These benefits can be further increased by using good training materials and programs and assessment tools to ensure competency. The EU Directive requires that all staff undertaking this task be regularly trained and assessed for competency.

Format of the donor selection guidelines

The donor selection guidelines can be provided either in written or electronic form. Several services now use on-screen browser-based versions both at session and on the blood service website. The use of the browser platforms is extremely effective and

Box 5. Key elements of good practice in donor selection guidelines

- Guidance provided in clear, concise and unambiguous language
- Comprehensive index to promote rapid use
- The provision of background and rationale to the deferral criteria
- Extensive cross referencing between related entries
- Useful additional information
  - Drug lists which affect ability to donate or product manufacture such as non steroidal anti inflammatory drugs
  - URLs of useful websites:
  - www.cdc.gov (Centers for Disease Control and Prevention)
  - www.ecdc.europa.eu (European Centre for Disease Prevention and Control)
  - List of vaccinations
  - Travel risk index for geographical disease risks such as HIV, malaria, Chagas' disease, vCJD or WNV
  - List of vaccines
  - Selection algorithms for complex guidelines such as hepatitis or malaria
  - Deferral codes used by the blood establishment to record and monitor deferrals

All elements must be reviewed and updated on a regular basis

promotes rapid and accurate use of the guidelines by permitting the use of synonyms as key words, such as allergy or hay fever to find the entry on hypersensitivity. An additional benefit of electronic formats is that they are easier to update rapidly and in a controlled manner. Additionally, this information, or simplified extracts of it, can be made available on the website to allow donors access to accurate selection information.

7.5.4 The donor selection process: four major steps

The donor selection process consists of four closely interlinked major steps.

- Pre-donation information and advice (7.5.5)
- Donor health questionnaire (7.5.6)
- Donor interview (7.5.7)
- Donor health assessment (7.5.8)

It is important to note that all four steps must be taken every time a donor presents for a subsequent donation. The need to positively identify the donor prior to donor selection and donation is extremely important in ensuring safety, and the collection systems should be designed to make certain that the donor's identity is confirmed at key stages in the donation process. Additionally, the donor's contact details must be clearly recorded by the blood establishment.

7.5.5 Pre-donation information and advice

Pre-donation information and advice are considered to be of paramount importance to the whole process of optimal donor selection and they help to minimise unnecessary deferrals. They also help to ensure that donors do not come to harm from donation and that the ensuing components made from their donations are unlikely to harm any recipient. The EU Commission Directive defines the information and advice that should be provided to blood donors in advance of the donation to enable them to make an informed decision about whether to donate or not [2, article 2 and annex II], (also see Section 13.2 on this topic). This information should be accurate and explicit and written in simple language to allow donors to fully understand the issues surrounding blood donation.

- The need for honesty
- Potential risks of donation
- The need to protect the recipient
- Common reasons for deferral
- The tests conducted on donation
- The donation process

This information can be delivered in a number of formats.

- Verbally in the form of counselling
- Written leaflets via mailings
- Electronic formats on website

Self-deferral: Providing this clear, concise information enables donors to decide whether to self-defer, i.e. to decide before donation that they are not eligible to donate.

The DOMAINE survey indicates that the majority of blood establishments in Europe use practices that enable self-deferral, meaning that donors decides themselves *before* donation whether they are not eligible to donate. While self-deferral should be promoted, donors should also be encouraged to communicate their reasons for self-deferring to the blood service. This ensures that their understanding of the selection criteria are sound and allows the service to maintain accurate records in relation to donor health and risk factors.

Post-donation deferral: About one third of blood establishments have an equivalent policy for self-exclusion: donors indicate themselves *after* donation that their donation should not be used for transfusion.

Need for discretion: It is essential that donors have several opportunities to withdraw from donation discreetly. Providing adequate information in advance of donation is highly effective in achieving this aim. It is generally considered good practice to offer the donor the opportunity to leave the session without question at any time. This becomes particularly important when dealing with risk factors and behaviours which may result in the transmission of blood borne infections. This is vital when considering that only 13 (48%) of the blood establishments, out of 27 EU Member States, perform NAT testing for all their collected donations.

Non standard formats: Blood establishments should also consider alternative formats for pre-donation information such as versions in other languages or formats for donors with special requirements such as Braille or audio for visually impaired donors, or video with titles or sign language for those with impaired hearing.

7.5.6 Donor health questionnaire

When donors have decided to come to a blood donation session on the basis of the pre-donation information and advice, they will be asked to fill out a health questionnaire. The questions included in the health questionnaire should serve to identify any infection risk to the patient resulting from the donor's history of medical conditions, lifestyle, sexual behaviour or travel. If a donor does not meet the eligibility criteria, he or she will be deferred: either temporarily or permanently.

Format

It is generally accepted as good practice that the donor health-check should be a self-completion, tick box format. Further, this should be written in clear and simple language to promote effective communication and understanding. The questions should be unambiguous and progressive, triggering additional questioning as appropriate to identify underlying reasons for deferral and ensuring that the full relevant medical history is obtained.

There are now other alternatives to the use of pre-printed questionnaires with the availability of on-line platforms and computer assisted health assessment programs (see also Section 12.1). Although these products are relatively new, a number of options are now used extensively. It has been suggested that these may result in more accurate completion. An additional benefit is the ability to systematically ensure that all questions are answered and appropriately followed up by the qualified health professional prior to donation.

7.5.7 Donor interview

Following completion of the donor health questionnaire, the donor should be interviewed by an appropriately trained and qualified health care professional. The format and extent of questioning may differ depending on the donor status. New or returning donors may be subject to additional questioning and more intensive interview with greater focus on blood safety and behavioural risks.

Further, in some member states, new donors are not permitted to give blood at their first visit: samples only are taken for testing for infectious markers and blood grouping.

7.5.8 Donor health assessment

If the information collected from the donor by the questionnaire and interview indicate no reason for deferral, a health assessment is carried out to further confirm the donor's physical eligibility to donate. Generally, the following parameters are assessed.

- Haemoglobin level
- Blood pressure
- Heart rate
- Weight

Additional testing such as temperature, haematocrit, ferritin, lipid profile and ALT may also be in place for donor safety or for other products or components.

- Protein levels (for aphaeresis plasma donors)
- Platelet levels (for aphaeresis platelet donors)

Commission Directive 2004/33/EC [2, annex III] defines the minimum haemoglobin level for females and males and requires the use of a validated method for measurement. For females the minimum level is ≥ 125 g/l; for males ≥ 135 g/l. According to the DOMAINE survey data, most member states use a capillary sample for this measurement; however, others use a secondary spectrophotometric test system to check the result on a venous sample. One EU blood establishment does not test Hb on session, but uses the result from the sample taken at the previous donation. Additionally, most blood establishments enforce a minimum weight for blood donation.

The Commission Directive 2004/33/EC requires that the health assessment be conducted by a qualified health professional. The definition of 'qualified health professional' may differ between member states, but all require that they are appropriately trained and assessed for competency to undertake Donor Health Assessment and that this training must be regularly updated. The DOMAINE survey indicates that, in the majority of member states, the medical assessment of the donor is still undertaken by medical doctors. However, a significant number of services permit specially trained nurses to undertake this role.

7.5.9 Donor consent or declaration

When a donor has completed the four steps of donor selection – pre-donation information and advice (7.5.5), donor health questionnaire (7.5.6), donor interview (7.5.7) and donor health assessment (7.5.8) – the donor signs the donor questionnaire, which is countersigned by the responsible staff member conducting the medical history interview [2, annex II, part B]. This particular action confirms that the donor has taken the following actions.

- Has read and understood the educational material provided
- Has had an opportunity to ask questions and receive satisfactory responses
- Agrees to the testing of their donation and that a sample will be archived
- Grants informed consent to proceed with the donation process
- Assumes responsibility that the information provided is true to the best of his/her knowledge

7.5.10 Donor comprehension

Throughout the donor selection process donors must demonstrate that they understand the process: this is pivotally important in securing blood safety. There is general acceptance that blood establishments should not use third party interpreters in the donor assessment or consent process; this is explicitly forbidden in some member states. However, there are options to facilitate communication between the blood service and donors with communication issues resulting from reading difficulties, language barriers or disability. These can include the following.

- Providing materials in alternative formats such as large print (or glasses), audio, Braille, video material with subtitles or sign language
- Providing materials in alternative languages
- Providing assistance by a member of blood service staff to complete the forms

These options are there to facilitate comprehension and improve communication but it is important that the donor can clearly demonstrate comprehension during this process; otherwise, the donation should be declined. The use of materials in multiple formats must be rigorously quality controlled to ensure consistency across the versions used.

7.5.11 Donor confidentiality

During completion of the health questionnaire, the interview and the health assessment, it is important that there is an appropriate level of donor confidentiality and that the session layout should promote donor confidentiality [4, article 24]. This can be supported by offering some of the following options.

- Allowing the donor to complete the health questionnaire at home or online
- Providing private booths for interview and screening
- Using folders or clipboards designed to avoid the donor being overlooked
- Using background music on session to prevent donors being overheard
- Using sound proofing materials in partitions
- Providing appropriate distances between screening booths

Additionally, management and storage of donor documentation on the blood donation session should support donor confidentiality.

The need to respect adequate privacy and confidentiality is particularly important in small communities and workplace collection environments. Donors are more likely to know each other and this can lead to social community pressure to donate, even when it may not be appropriate. The system of self-exclusion may be helpful here (see Subsection 7.5.5).

7.5.12 Performance Indicators

Several Performance Indicators (PIs) can be helpful in evaluating donor selection. PIs may relate to either capacity aspects or the results of donor selection procedures.

- Number and training level (physician/nurse) of personnel involved in health assessment or donation procedures, measured in full time equivalent units, *fte*
  - Per 1,000 donations
  - Per 1,000 health assessments

  This PI entails the need of a clear definition of what is and what is not included in donor selection.

- Deferral percentage
  - Percentage of all deferrals in the group of attending donors
  - Percentage of deferrals in the group of attending donors, categorised per cause: medical/non-medical/behavioural
  - Incidence of reactive, repeated reactive, and acknowledged infectious diseases

  This PI is not a donor management PI per se. However, these data may be used in epidemiological analyses and can be of importance to recruitment or retention strategies.

- Waiting time in minutes per donation

SECTION 7.6

DEFERRALS

7.6.1 Introduction

It has been well recognised that even short-term deferrals may have a long term impact on donor behaviour, and ultimately on donor retention [5, 6]. In managing donor deferrals, it is essential to use appropriate strategies to maintain donor motivation and secure early return to active donation at the end of the deferral period.

This section will consider the deferral process, including donor care and advice, and options to deliver good practice. It will also consider options for potential interventions during the health screening and deferral processes to improve donor care and satisfaction, and to promote donor return at the end of the deferral period

7.6.2 The deferral process

Most donor deferrals are temporary: a minority results in permanent exclusion. This is supported by the DOMAINE survey findings where a considerable number of blood establishments have indicated that they have a total deferral rate of around 15% of their attending donors, of which roughly 90% are classified as temporary, and only 10% are permanently deferred.

Regardless of the duration of the deferral, it is essential that this process is managed well and with appropriate respect and understanding. Additionally, it is essential that deferrals are handled discreetly especially within small community and work place sessions as donors often express embarrassment as well as disappointment about being excluded from donation (see Section 8.3 Counselling).

On-session deferral

Temporary deferrals

Essential steps for temporary deferrals include the following.

- Reassure and inform the donor about the reason for deferral
- Explain whether the deferral is to protect the donor or patient's safetyExplain the length of the deferral clearly to encourage the donor to view this merely as a short term interruption to their donating career
- Promote return once the donor is eligible again. Providing the donor with the date that they can next donate can be useful in this regard

Permanent deferrals

For permanent deferrals it is very important that the donor be reassured about his or her own health and general welfare. This can sometimes be extremely difficult to achieve when the reason for deferral may be contentious in relation to risk behaviour or when deferred for a previous condition from which the donor has fully recovered, such as a malignancy.

Deferral information

It is essential that any donor who is declined should receive a clear explanation on the reason for their deferral. However, donors often do not remember information provided verbally. The use of supplementary materials and leaflets may also help in ensuring that the donor fully understands the reason for deferral and when it might be possible to return. Where appropriate, these can be used to give additional health or nutritional advice.

Topics that may usefully be covered

- Haemoglobin levels
- Travel-associated risks
- Infections
- Pregnancy
- Vaccination
- Medications

Alternatively, this information could be provided on the blood establishment's web-site and the donor can be directed there for further information. Both temporarily and permanently deferred donors should be given the opportunity for further discussion on any issue that concerns them and, where appropriate, offered advice and support by an expert such as a doctor or a counsellor (see Section 8.3 Counselling). Additionally, managing the deferral well minimises the risk that upset donors might actively discourage their family, friends, colleagues and other potential donors from giving blood. Managed well, deferred donors can become volunteer donor-recruiters, and in this way promote best practice in donor retention. A good relationship will be maintained within the community and a culture created in which all donors, whether they are still donating blood or not, still belong to the community of blood donors.

7.6.3 Donor deferral recording and monitoring

Blood services must accurately record donor deferrals and put in place control mechanisms to ensure that the donor does not donate while deferred. This is greatly facilitated by the use of automated IT systems which can prevent donors being invited while deferred. This can be achieved by flagging the donor electronically using a medical hold or deferral code. In the absence of a computer based donor management system, blood establishments must ensure that they have safe and secure manual processes to quarantine the donor during deferral.

Recording deferrals

It is important to develop operating procedures for both recording and monitoring donor deferrals (DOMAINE survey: 86% of blood establishments have SOPs). Beneficial aspects are shown in Box 6. The effect of short-term, temporary deferral on blood donor return rates and subsequent blood donations is an important issue that should not be underestimated. Numerous studies [6, 7] have shown that among most first time donors, temporary deferral may be interpreted psychologically as providing a permanent excuse for not donating.

Monitoring deferrals

It is important that blood establishments develop systems to effectively monitor deferrals and undertake trend analysis. This can be useful in several ways.

Box 6. Beneficial aspects of the use of structured deferral codes

- Allows categorisation of deferrals
- Facilitates the recall of previous donations if affected by the reason for deferral
- Provides a useful mechanism to review the donor's previous history
- Serves to identify cohorts of donors affected by changes in the donor selection guidelines
- Allows trend analysis of deferral issues
- Permits the service to contact the donor at the end of the deferral period when the deferral end date is recorded

- Assessing the impact of a change in donor selection
- Identifying differences in practice between team members or different services
- Identifying training needs for staff members
- Conducting trend analysis

Donor deferral rates directly affect the productivity of every blood establishment, and therefore, the effective management of deferrals and monitoring of their impact is a critically important part of the business planning process. The need to recruit new donors can be reduced by minimising unnecessary deferrals while promoting return once the donor becomes eligible again.

7.6.4 Other deferral routes

It should be recognised that there are different stages at which the donor is deferred or can self-defer and that this is increasingly the case with services using telephone call centres, websites, SMS and e-mail as options for donor communication. This requires that blood services consider the implications of this in designing strategies to encourage ongoing support and retention of the blood donor.

Key elements of good practice

- Information provided must allow donors to accurately defer themselves or prompt them to contact the blood services to confirm eligibility or otherwise
- Donors should be encouraged to contact the service about their decision to self defer
- Call centre staff must be well trained to either provide the deferral information to the donor or refer onwards to a health care professional to answer the query
- Call centre staff must accurately record donor information to allow medical follow up, if required

- Websites should provide clear information and allow rapid management of any donor enquiries on eligibility
- Donor self deferrals must be recorded and managed to the same standard as those on session. This will promote their return and ensure that the donor is not called to donate before the end of their deferral

7.6.5 Most common deferrals

The DOMAINE survey has captured the extent of total deferral rate among about 60% of the responding blood establishments to be that of 12.9%, which in reality, is considered to be rather high. Overall, it is stated that a higher deferral rate is recorded among women blood donors as compared to men. The DOMAINE findings are supported by the following independent study [8] which shows that among mostly regular donors (64.1%), the deferred donors amounted to 5.6%, which were mostly women.

The main reasons for deferral

- Low haemoglobin: 40.7% (majority females)
- High blood pressure: 29.4% (predominant in males) [9, 10]
- Medical illness: 15.6% (low blood pressure, low body weight, high haemoglobin)

Two distinctive reasons for deferral were selected as examples of donor monitoring: that of low haemoglobin deferral, and transfusion transmissible infection (TTI) markers.

Haemoglobin level monitoring

Low haemoglobin deferral in women is common as they are more prone to depleted iron stores and consequently low haemoglobin levels. Female donors and regular male donors [11] should be given advice on proper diet and iron supplements. Cancado et al [12] concluded that blood donation is one of the major causes of iron deficiency among blood donors, especially in female donors.

Frequent donors are at greater risk of low haemoglobin levels and, consequently, deferral from donation. According to the findings of various studies [13, 14], regular donors are at risk of developing depleted iron stores as each whole-blood donation removes approximately 4 mmol or 236 mg of iron from the body. In fact, it has been shown that the total number of lifetime donations is not a predictor of depleted iron stores; however, frequency of donation is [15].

Monitoring Transfusion Transmissible Infections (TTIs)

A major objective of blood safety is avoiding TTIs through transfusion. However, it is acknowledged among the transfusion community that screening for the markers of infectious diseases is an incomplete solution. One of the most important steps in improving the safety of blood and blood products is to identify those donors whose medical or lifestyle history presents a known risk and defer them from donating either on a temporary or permanent basis.

Optimal donor selection begins with educating the public about transfusion transmissible diseases. People belonging to high risk groups do not usually volunteer to donate blood, but others who may occasionally come in contact with risks more often present themselves at blood donation sessions. It is these people who may not realise how their one off or erratic behaviour can increase the risk of contracting a transfusion transmissible infection.

Any prospective donor must truthfully provide information, by accurately responding to a questionnaire, which is purposely designed to identify specific risk factors for these infections. This screening stage is the first line of protection against most infections.

All donations should be tested [16] though recently infected donors in the window-period when tested may still remain undetectable by currently used screening tests. Due to this possibility, disease transmission cannot be completely eliminated and blood recipients always remain at a slight risk – hence the importance of effective donor medical and lifestyle screening.

Strategies to reduce the transmission of TTIs

This inherent weakness in donation screening is acknowledged by all blood establishments who are forced to defer, either temporarily or permanently, approximately 10% of their prospective donors according to the DOMAINE survey.

In some EU member states, donors are given the opportunity to have their blood discarded based on a confidential notification of risk. This self-exclusion permits donors who are unwilling (due to family, social or community pressures) to admit to a risk factor while at the donation site, to stop their blood being transfused[17]. For risk reduction reasons, this is not an optimal method; however, at times it may present a possible route.

Other EU states apply a different approach for eliminating the weakness of the window period. When a new blood donor registers for donation, only samples are collected for screening purposes. The individual is sent away without being allowed to donate. If the screening results are negative, the individual is recalled and, if the routine is satisfactory, the donor is then allowed to donate.

The DOMAINE survey found that most blood establishments have specific processes for the management of deferred donors. However, only 38% use re-entry algorithms, decision matrices or flow charts for temporary deferred donors, which can prove beneficial.

An example algorithm that can be used to monitor donors for TTIs is shown in Figure 6.

7.6.6 Post-donation donor deferral management

On medical grounds

Medical follow-up of donors who have been temporarily deferred from donation on medical grounds is sometimes necessary. Such instances may include donors taking certain medications temporarily (such as antibiotics), or low haemoglobin levels. Short-term deferrals, whose deferral period has come to an end, may also require medical follow-up. In these cases, the donors need an indication of when they may return to donate, and if possible (to encourage retention) they should be given a specific appointment.

In the meantime, the assigned counsellor should ensure that donors have fully understood the specific advice given, that they are receiving the medication prescribed, if required, and that they have been deferred on a temporary basis. Finally, donors should be assured that they will be eligible to donate blood again once their particular health condition has been reassessed.

On TTI risk grounds

It is necessary to follow-up a donor if the screening tests on the donated blood have indicated the presence of a Transfusion Transmissible Infection (TTI).

Positive TTIs: In clear-cut cases, where the screening results have been confirmed to be positive, the donor should be informed either on a face-to-face basis by a trained member of the staff or be referred to an assigned doctor for further advice and support. The majority of European blood establishments conduct a face-to-face interview to give the donor the opportunity to receive information and advice on issues that may only be personal. However, a minority of blood establishments inform donors of certain positive test results by letter.

High risk behaviours: There may be differences between EU member states on issues concerning blood donor deferral and the potential exposure to TTIs. One high-profile example is the deferral of men who have ever had sexual contact with other men (MSMs). Some countries have a policy of permanently deferring MSMs whilst other countries have a deferral period during which an MSM donor may not donate. This policy has been criticised as being discriminatory against gay men, who are seen as being subject to more stringent eligibility criteria than other high risk groups. It is for each country to gather and interpret its own epidemiologic data and to set its own deferral criteria while operating within the EU Directive (see also Section 13.1 Ethical issues in blood donation).

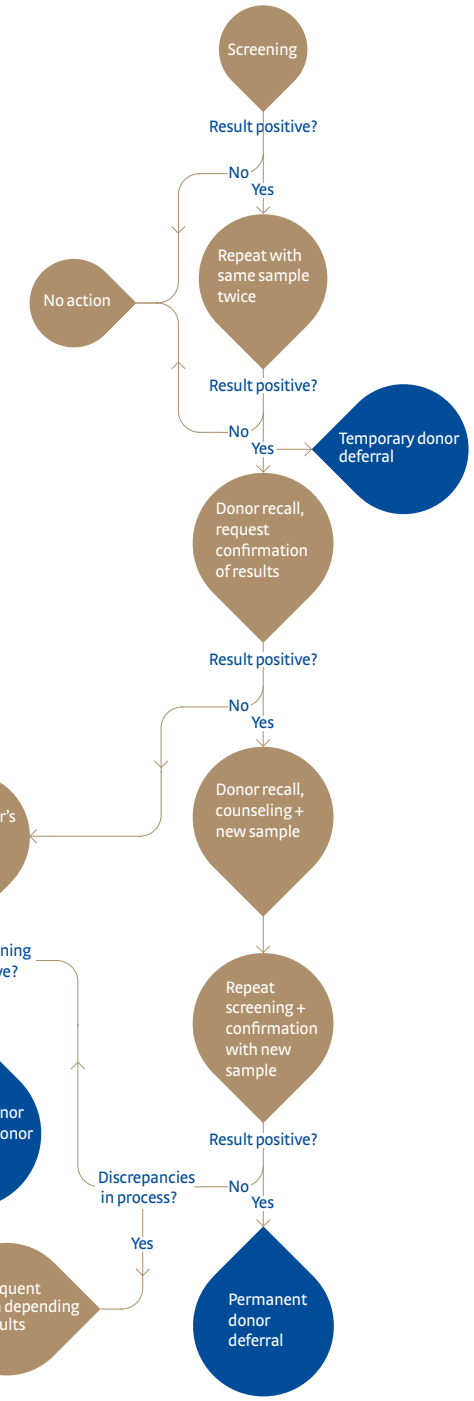

Figure 6. Example of transfusion transmissible infection algorithm

SECTION 7.7

BLEEDING PROCEDURES

7.7.1 Venepuncture

After having completed the donor selection procedure and been found eligible to donate, the donor is invited to undergo blood extraction. The most common practice in the EU is for qualified nurses to perform venepuncture (91% of blood establishments). In around a fifth, needle insertion is carried out by medical doctors, while in roughly the same number, qualified donor attendants perform venepuncture. In a small minority, venepuncture is carried out by laboratory or medical technicians. Before performing the venepuncture, the donor's identity should be checked by staff.

7.7.2 Donation furniture

The position of the donor during donation is important and the following should be provided.

- A comfortable resting position
- Security in the case of fainting
- Optimal positioning of the arm(s) for venepuncture
- Visibility of the donors by clinic staff

Donors usually donate on specialist furniture: a flat bed, a shaped couch or chair. These may be off-the-shelf items purchased from a supplier of medical furniture or designed and made to the specifications of the blood establishment (as, for example, in Northern Ireland). Wheel chair donors should have the opportunity to either donate on blood establishment furniture or in their wheel chair.

Policies vary, but most blood establishments have defined staff-to-bed ratios which vary, not only in terms of the ratio itself, but also of first time, returning and regular donors. The type or grade of staff also influences this ratio.

7.7.3 Bleeding and rest practices

While blood is being drawn (following venepuncture) a range of activities will typically be carried out by staff.

- Completion of documentation
- Labelling of packs
- Data collection: manually or electronically
- Completion of donor record
- Donor retention activity
- Donor recruitment activity

After the donation is complete, donors normally rest up to 10 minutes, or more if necessary. This may take place on the same bed/couch as the donation or elsewhere. The majority (>70%) of EU blood establishments have a procedure that requires donors to remain on the bleed bed for this period. This practice may vary according to donor type reflecting the increased risk of fainting among new donors compared to regular donors. Donors may also be asked to move to a separate waiting area for post-donation refreshments.

7.7.4 Blood bag weighing

It is vital that the donation is collected to within the correct volume range as specified for the blood-bag used, and agitated during the donation process. Various methods are used to ensure donations are within the correct range.

- Blood weigher/mixer
- Scales
- Manual mixing

7.7.5 Finishing the blood donation

Post bleed care

Immediately after the needle is withdrawn, the use of dressings and digital pressure are required to halt bleeding from the venepuncture site and prevent later re-bleeding. This may be carried out on the couch, or elsewhere. It can consist of applying to the site either a plaster, pressure pad or other support, or digital pressure by either a member of staff or the donor.

Sealing the blood line

On completion of the bleeding procedure, the blood line must be sealed. This may take place by either heat sealing of the line at the bed, by metal clips, or by another method. Also, sealing may take place on the spot, or at another workstation by another person.

7.7.6 Aftercare

When a donor has finished donating, it is important to provide aftercare before the donor leaves the donation centre. Aftercare may include the following elements.

Providing refreshments and fluids

Most blood establishments provide fluids and refreshments. The purpose of this is twofold. First, they reduce risks of adverse donation events (see Chapter 8 Donor safety issues). Second, they provide a 'thank-you' token of appreciation. Some blood establishments also provide food vouchers, food products, or sweets, such as chocolate to compensate for time and expenses. Fluids provided by the blood establishment to aid hydration are most effective if taken pre-donation and served cold. However, other models exist: providing fluids during the bleeding procedure or post-donation, on or after leaving the couch.

If possible, a donor canteen is available for providing refreshments, which meets the prevailing hygiene and safety regulations. Predominantly volunteers, but also nurses and donor attendants, are involved in catering activities.

Observing the donor

Careful observation advances proper handling of complications that happen before or just after the donor has left the donation centre. Nurses, donor attendants and volunteers can play a role in observing donors. Donor counselling should be provided, if necessary (see section 8.3).

Providing information on post-donation notifications

If a donor becomes unwell after donation, or within two weeks, it is important that the blood establishment be informed.

Thanking the donor for donating

Gentle treatment of the donor is considered vital for donor satisfaction. A well-treated donor is much more likely to make a subsequent donation. Thanking the donor is a simple but effective way of improving donor satisfaction and retention.

Giving a small present or token to the donor

Giving a small present or token to the donor can be regarded as a sign of appreciation to the donor and is a form of donor retention (see Chapter 6 on donor retention).

Other post-donation activities

The moment after donation also creates an opportunity for the following activities.

- **Making appointments:** If it is possible in the data processing system, an appointment can be made for the next donation.

- **Measuring donor satisfaction:** The time when donors are enjoying post-donation refreshments is a good opportunity to ask for opinions on various aspects of blood donation. Chapter 6 includes more information on measuring donor satisfaction.

- **Handling donor complaints:** Donors should be given the opportunity to raise concerns or formally log complaints while still at the donation centre. This can be done by filling out a complaint form or by making an oral complaint. Adequate handling of the complaint is necessary for donor satisfaction and donor retention. More information about handling of complaints can be found in section 6.6 on donor satisfaction.

- **Providing help when minor accidents have taken place:** If an accident happens during or right after donation (e.g. when blood is splashed or spilled on clothes, or when small material damage has occurred to cars or bikes) information on reimbursement procedures should be provided to the donor.

7.7.7 Performance indicators for donation procedures

Monitoring collection performance and collection quality, using the tools offered, is a prerequisite for constant improvement. Performance during blood sessions can be measured using the following PIs.

- Percentage of successful donation procedures: A donation procedure is called (un)successful, when puncture of the donor skin did (not) result in blood products (whole blood or blood components) suitable for processing.
  - Percentage of all (un)successful donations out of all donation procedures started
  - Percentage of (un)successful donations out of all donation procedures started, categorised per cause: technical (such as apparatus, disposables, venepuncture) or donor related (such as fainting, low blood flow)
  - Percentage of donor complications of the total number of donation procedures started. Subdivided per kind of complication

- Percentage of donor or collection related blood product losses other than taking place at the collection centre.
  - Post donation report on infectious disease risk
  - Material failure
  - Inadvertent events in logistics

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CHAPTER 08