

FULL OF LIFE

LIFE FLOWS 2011

I got up an hour earlier today. Quietly, not to wake up the kids.
I won't make breakfast for them today; I'm in a hurry...

My bike rides through the town as if I weren't the one riding it.
And I'm already climbing the stairs, while the excitement increases.
I'm here. Completely void. There's no place in the world
where you meet so many people, so full of life.

My 15 minutes.
I feel as if I have made breakfast to every child in the world!

*Marko Senegačnik,
Creative Director of the session called Donate Energy For
Life! (Daruj energijo za življenje!), blood donor*





L I F E F L O W S

2011 ANNUAL REPORT OF THE SLOVENIAN BLOOD TRANSFUSION SERVICE

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Igor Velušček, Director of Blood Transfusion Centre of Slovenia



Irena Razboršek, Medical Director of Blood Transfusion Centre of Slovenia

It is always a pleasure to be in a position to present work performed during the previous year, especially if it was successful. We are proud to have been able to provide blood to all patients in need of it, thus helping them get well. Of course, the treatment was enabled by our blood donors, who are the first and an indispensable part of the blood supply chain.

Last year's response by blood donors at blood donor sessions was good and in accordance with the need. That is why there was no extreme shortage of blood stock, which can also be attributed to the blood session "Donate energy for life!" In addition to obtaining new blood donors and a large number of potential donors registered in the blood donor database, the excellent outcome of the blood session was also due to the new website www.daruj-kri.si, where you can see the blood stock by blood groups in the whole of Slovenia. This has helped us overcome the organisational

fragmentation of the transfusion service and combine the stock, resulting in even more responsible and rational management of blood.

Today, blood donors help us coordinate blood stock by deciding to have their blood collected based on the stock and the need, hence the test tubes on the first page of our annual report.

We are known to the public particularly for blood collection and the provision of sufficient quantities of safe, quality and matching blood to our patients; therefore, we also wanted to present less known and new types of treatment applied in transfusion medicine. These are cell therapies, which have had and will have an important role in the treatment of various kinds of diseases even in the future, since they are the only type of treatment for certain diseases.

The annual report is an opportunity to thank everyone who participates in the process of blood and cell treatment. First of all, we would like to thank the blood donors and the Slovenian Red Cross as the organiser of blood donor sessions, all the volunteers, haematopoietic stem cell donors, the users of our services, who treat blood professionally and with due care, and all employees in the transfusion service. They each deserve the merit for ensuring proper and quality treatment to our patients.

We can be very proud of our transfusion services, since we have a high percentage of people ready to help, enough blood donors, a long and beautiful blood donor tradition, an exemplary blood supply system and trained staff and experts who stay up-to-date with news and improvements. This annual report will show you that everything mentioned above is true.



BLOOD / IRREPLACEABLE/MOST PRECIOUS GIFT/DONOR BASE / TRANSFUSION SERVICES / LJUBLJANA / NOVO MESTO / SLOVENJ GRADEC
/ TRBOVLJE / IZOLA / JESENICE / MARIBOR / PTUJ/MURSKA SOBOTA / CELJE / NOVA GORICA / BLOOD / IRREPLACEABLE/ MOST
PRECIOUS GIFT / DONOR BASE / TRANSFUSION SERVICES / LJUBLJANA / NOVO MESTO / SLOVENJ GRADEC / TRBOVLJE / IZOLA / JESENICE

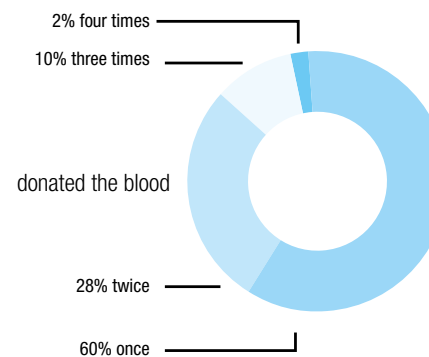
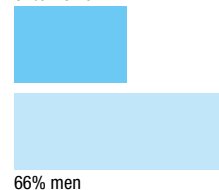
2011 IN NUMBERS

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115,089	registered blood donors
11%	new blood donors
62,872	blood donors
101,380	blood collections
1,180	blood donor sessions
380	mobile blood donor sessions
45%	blood collected during mobile blood donor sessions throughout Slovenia
205,766	prepared blood components
3,746	therapeutic services
more than 1.5	million laboratory tests
14,359	registered bone marrow donors
730	stored units of umbilical cord blood in the public bank (171 new)
14,753	telemedicine services
24-hour	patient care year-round

62,872 blood donors

34% women



A RhD+	31 %	●
A RhD-	9 %	●
O RhD+	30 %	●
O RhD-	8 %	●
B RhD+	12 %	●
B RhD-	3 %	●
AB RhD+	6 %	●
AB RhD-	1 %	●

A woman with dark hair and glasses is lying in a reclining chair, smiling at the camera. She is wearing a white hospital gown. Her left arm is extended, and a blood collection tube is inserted into her vein. She has a colorful identification band on her wrist. In the foreground, a bottle of disinfectant is visible. The background shows a clinical setting with medical equipment and large windows.

EVERY 5 MINUTES SOMEONE NEEDS BLOOD / 400 DONORS PER DAY / 18-65 YEARS / >50 KG / MEN 3 MONTHS / WOMEN – FOUR MONTHS / COMPLICATIONS AT DELIVERY – 5 UNITS OF BLOOD = 5 DONORS / TREATMENT OF BURNS > 20 UNITS OF BLOOD / LIVER TRANSPLANTATION – 20 UNITS OF BLOOD / HEART SURGERY – 6 UNITS OF BLOOD / EMERGENCY TRAUMA – 30 UNITS OF BLOOD / EVERY 5 MINUTES SOMEONE NEEDS BLOOD / 400 DONORS PER DAY

TRANSFUSION MEDICINE

Transfusion medicine is a branch of medicine. Its important mission is to treat patients with blood products. Transfusion medicine ensures there is always enough high-quality and safe blood as well as blood products for those in need. To simplify this: transfusion medicine starts with blood donors – healthy individuals, and ends with patients who receive blood components, which are critical for their treatment. This includes all activities, from blood collection, testing, processing and storage to transfusion-related tests. In doing so, the task of the transfusion branch is to protect patients by ensuring them safe and compatible blood, and also blood donors.

As a branch of medicine, transfusion medicine is engaged in three closely connected and intertwined areas, which ensure suitable and safe blood treatment of patients:

- Blood supply,
- Treatment with blood components and cells, and
- Laboratory tests.

Transfusion medicine connects and reflects a wide range of findings from the areas of blood biology, physiology, immunology, biochemistry, immunogenetics, genetics and similar medical and

natural sciences, such as the area of medical biotechnology. Its purpose is not only to stand as substitute treatment with blood components and medicinal products prepared from blood and plasma but it encompasses also a number of other therapeutic procedures, such as various types of apheresis, transplantation, immunotherapy, etc.



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BLOOD SUPPLY

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A special feature of the transfusion service is that it has no unlimited blood stock and that it depends on the level of blood donors' motivation. The blood collection process is not entirely painless for the donor, and yet many people unselfishly decide to go through it. Blood donors from Slovenia and other parts of the world say helping people and saving people's lives are their main reasons to donate blood. They feel that blood donation is their personal duty.

There is no blood supply without blood donors. We are probably not aware enough of the fact that blood donors are the basis of safe blood supply, or perhaps we simply do not emphasise this often enough.

The fact that blood products cannot be entirely replaced by artificial substitutes means that donors' blood and products obtained from it are a unique medicine.

In order to ensure safe blood to citizens, each country must have volunteer, unpaid donors who regularly donate their blood. Blood donors are each country's national wealth, since they provide an irreplaceable source of treatment and help save people's lives by following the value of mutual help.

In Slovenia, we can be proud of a long tradition of blood donation, which ensures sufficient quantities of blood for patients. We have never experienced a situation where patients would be unable to receive blood when needed.

Already since 1953, the main organiser in charge of recruiting a sufficient number of blood donors has been the Slovenian Red Cross. Today, it carries out this task using a network of 56 Red Cross Regional Associations throughout Slovenia.

In cooperation with the Slovenian Red Cross and the energy company Petrol, we carried out an extremely successful blood donor session in 2011, surpassing the decade-long record in the number of blood donors and recruitment of new blood donors.



POTREBUJEMO
TE!

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"Scan the QR code with your smart phone's QR code reader and see the presentation video of the session."

BLOOD DONOR SESSION

“GIVE ENERGY FOR LIFE!”

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The national blood donor session was intended to raise awareness of the Slovenian population regarding the importance of blood donation, urging them to become blood donors. We attracted the attention of the public and media with “live” road billboards, where real people were sitting and thanking the passers-by. Many Slovenian celebrities, artists and public figures joined the session as volunteers.

The session was carried out simultaneously through several media channels, all of which directed people to the website and Facebook, where visitors could see the current availability of blood supplies and join the session in several ways, by:

- Immediately donating blood,
- Registering into the online blood donor database,
- Sharing the session with Facebook friends, or
- Uploading their blood group image as the profile image.

Every week, a press conference was organised at the Blood Transfusion Centre of Slovenia (four in total):

- With celebrities,
- Media and healthcare representatives,
- Members of the Management Board of Petrol and its employees, and
- Representatives of the business public, who donated their blood on this occasion.

The results exceeded all expectations! There was a lively discussion on the website and Facebook about blood donation, and we also received help from some new friends:

- Twitter users became our messengers,
- We received two free Facebook apps, and
- A popular local pub organised the “Code red party” on our behalf.

We recorded 310 free media publications in the total value exceeding €360,000, but the most important outcome is that we managed to activate 10,000 blood donors in only one month, which is 10% more than in the same period of the previous year, and the most during the last 10 years. We received 1,300 new blood donors in the online blood donor database.

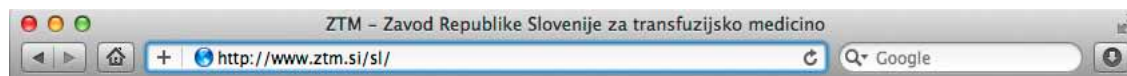


Blood stock adjustment is a complex task, therefore constant monitoring and action by the transfusion service is required. Blood stock does not depend only on blood donors and the collected blood, but also on blood consumption. Blood consumption is unpredictable, both in terms of the required amounts of blood components and blood groups. In the case of higher needs of blood, additional blood donor sessions are organised in addition to the regular ones; we also directly call the donors (e.g. according to the lack of certain blood group), and as a last resort, we invite donors through the media. For the transfusion service, lack of blood is not the only problem; excessive stock is also problematic, since blood components have a certain shelf life. In such case, we reduce the planned blood donor sessions and only accept a limited number of blood donors or postpone the session to a more favourable date.

We are delighted that our blood donors keep track of the graphic presentation of blood stock, since such information lets them know if they are currently needed and they can this way help with blood stock adjustment. This has helped us to transfer to a higher level of organising blood donors, meaning that blood donors arrive when the need arises.



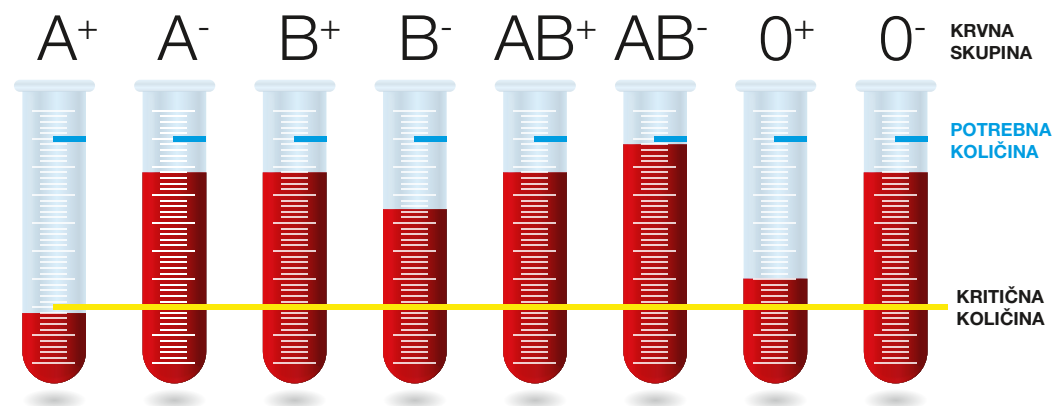
"The blood donor session "Give Energy For Life!" received two awards from the IABC EMERald: the Gold Quill at the regional level Europe and Middle East, and the Gold Quill at the global level in the category of social responsibility."



DARUJ

ENERGIJO ZA ŽIVLJENJE

Sodeluj v največji krvodajalski akciji!



The application, which was developed to present the blood supply fluctuations during the session, became an indispensable tool that is daily used by all transfusion services in Slovenia as a reference about the current blood supplies throughout the country.



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BLOOD THERAPY

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Blood performs many tasks in the body, therefore blood composition is extremely complex and its potential virtually infinite (from the transport of nutrients and waste substances in the body, healing of wounds, keeping a normal internal environment, maintaining body temperature and to its role in case infections...).

So far, there is no matching substitute for blood. Diseases and bleedings which are life-threatening due to a high loss of blood and its components can be treated with transfusion. And blood can be a medicine only if it is properly collected, examined, processed and administered to a patient. In the opposite case, blood transfusion may cause dangerous conditions, diseases or even the receiver's death.

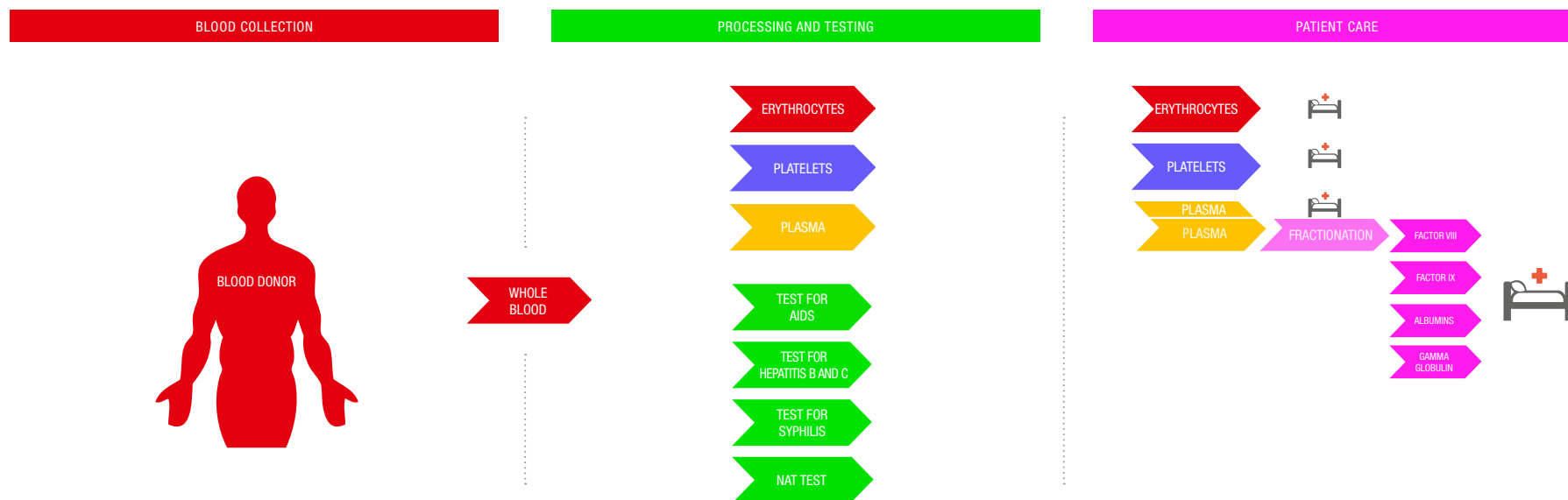
Transfusion is justifiable and effective only when a receiver is administered **THE BLOOD COMPONENT THAT IS REALLY NEEDED** in the blood treatment process, in the amount and form that ensures the best effect. This can only be achieved with transfusion of **COMPATIBLE AND SAFE BLOOD**.

The collected whole blood is used to make blood products – blood components and medical products prepared from blood.

WE USE WHOLE BLOOD UNITS TO SEPARATE THEM INTO BLOOD COMPONENTS:

- Concentrated erythrocytes
- Concentrated platelets, and
- Fresh frozen plasma.

A collected whole blood unit is separated into its individual elements by means of physical methods such as centrifugation, filtration and similar. This is how we obtain the same amount of cells, for example erythrocytes or platelets, in a smaller volume of a particular component than there are in an entire bag of whole blood. Treatment with blood components is more effective and safe, since it supplies a patient only with the necessary blood components.



BLOOD, MORE PRECISELY PLASMA, IS USED TO PRODUCE MEDICINAL PRODUCTS, SUCH AS ALBUMINS, GAMMA GLOBULINS, BLOOD CLOTTING FACTORS.

Usually erythrocyte preparations are administered to patients with anaemia; platelet transfusion is used to stop and prevent bleedings; blood coagulation disorders are treated with plasma and blood coagulation factors; preparations of leucocytes and antibodies are used to boost a poor immune system of the body. Albumin is administered in cases of low protein in blood and to maintain the blood volume.

SAFE BLOOD is ensured by healthy and aware blood donors, and with blood testing. In Slovenia, each collected blood unit is tested for markers of AIDS, hepatitis B and C and syphilis with the latest testing methods that are licensed in accordance with the strictest international criteria, and are completely automatized. An obstacle in ensuring the perfect safety is represented by the so-called diagnostic window, a period from the moment of infection to the appearance of infection markers, which we are looking for with a specific test.

One of the latest and most important actions taken in order to obtain the highest safety level of blood supply is also the screening of collected blood units for transfusion using methods for direct establishment of the presence of viruses (Nucleic Acid Techniques - NAT). NAT methods are used to prove the presence of nucleic acids

of viruses in various biological samples. The NAT method principle is multiplication and detection of small quantities of genetic material – also the viruses we are looking for.

The application of these methods strongly shortens the diagnostic window, as they help us detect an infection much earlier than any of the direct serologic infection markers appear. Blood tested with the NAT method is much safer also because this method is extremely sensitive, since it enables detecting also infections with a low viral burden.

BLOOD COMPATIBILITY is ensured by performing immunohaematologic tests which allow safe blood transfusion, organ and tissue transplants and prevent some adverse immune reactions after transfusion, transplantation and during pregnancy.

In ideal circumstances, patients receive blood identical to their own in all erythrocyte antigens. Due to the large number of antigens and their possible combinations, we strive to transfuse blood units that match as closely as possible. Compatibility is examined with compatibility test for each unit.

In order to ensure a safe and effective treatment with erythrocytes, it is vital to choose blood which is identical/compatible in terms of all immunologically important antigens.

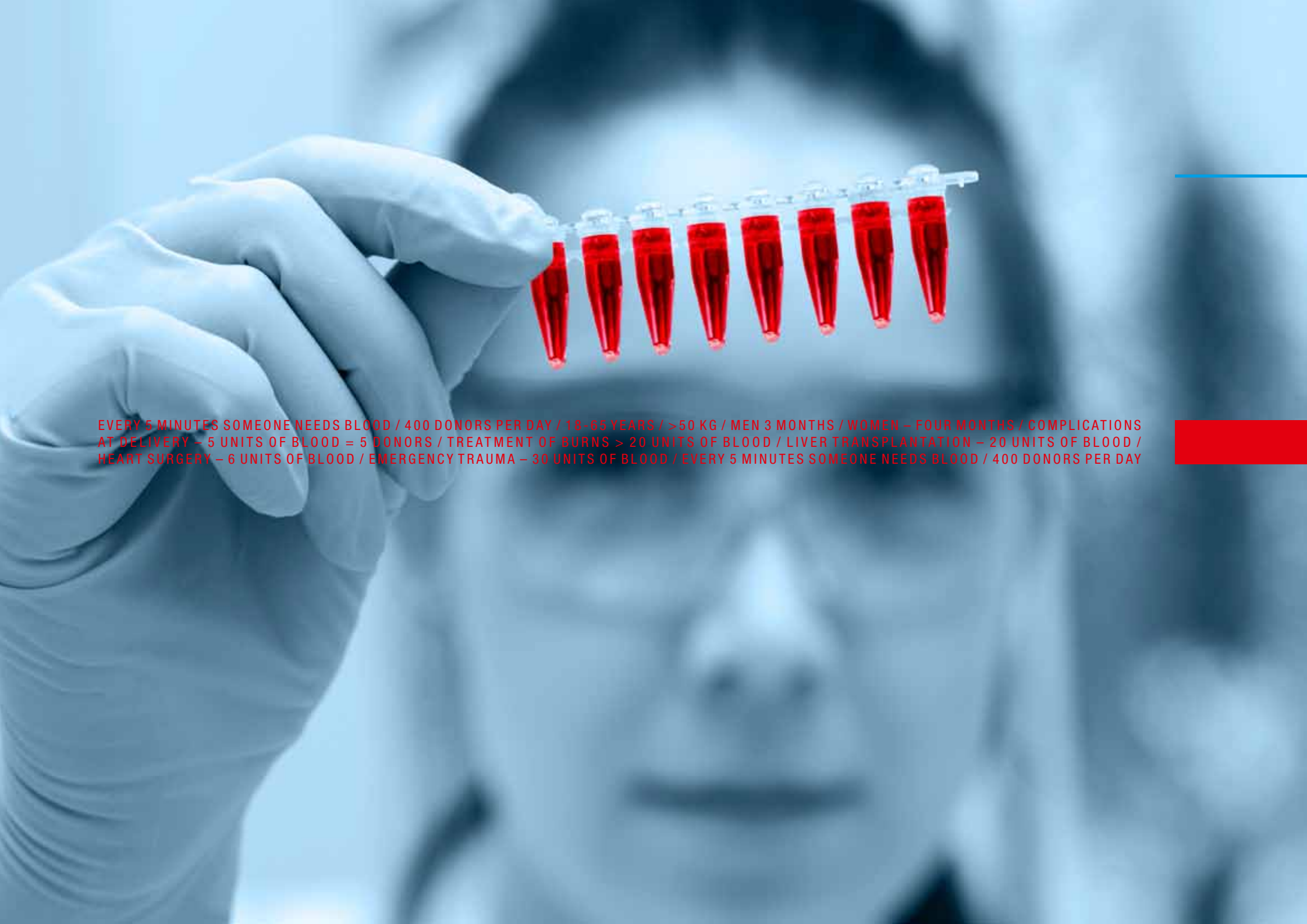
Antigens of ABO and RhD blood groups are thus determined for each collected blood unit. In the first two collections from every blood donor, other antigens of Rh (C, c, E, e) and Kell systems are also determined.

In order to prevent the transmission and harmful effects of unexpected erythrocyte antibodies from a plasma donor to its receiver, we perform antibody screening test (Coombs test). The units in which such antibodies are detected are not used for transfusion.



INTERESTING FACT: Most of the blood supply is intended for patients with various haematological or oncological diseases; however, it is also used for patients undergoing surgeries and transplants and for others with serious injuries who require large amounts of blood.

At the BTCS we maintain a register of bone marrow donors and a public bank of umbilical cord blood, provide a supply of and trade in blood medicinal products, and manage a haemovigilance system to monitor and prevent adverse reactions of blood transfusions. All information submitted within the framework of haemovigilance contributes to improving the safety of transfusions, whereby we explain the risks of adverse reactions in blood transfusion and how to reduce those risks by implementing additional measures.



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CELL THERAPIES – NEW WAYS OF TREATMENT

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Besides the established types of blood treatment, the treatment with individual cells, i.e. cell therapy, is becoming widely used.

Within the last fifty years, the transfusion medicine has experienced an amazing breakthrough. From the collection of blood into bottles and whole blood treatment, we have managed to start collecting blood into a closed system of plastic bags, which enable further processing, and to a 100% component-based therapy. We have introduced a new blood collection process, i.e. apheresis, a procedure of collecting blood components with a cell device, which separates a certain blood component from blood, and the remainder returns into the blood donor's circulatory system. From 2012, all platelet components are virally inactivated and all units of concentrated erythrocytes filtered, which has ensured us blood components of an even better quality. Furthermore, we use state-of-the-art testing methods, which are licensed in accordance with the strictest international cri-

teria and are completely automatized. We are proud to say that blood has never been as safe as it is today.

Despite all the progress made so far, the transfusion medicine is facing new challenges, and experiencing improvements of the existing forms and ways of treatment which is all due to the immense scientific progress in molecular biology.

Cell therapies are said to be an upgrade of the today's component therapies, and their role in the treatment of various diseases will only be enhanced in the future.

One of the already established cell therapies is definitely the transplantation of haematopoietic stem cells (hereinafter: HSC). Dr. E. Donnal Thomas performed such therapies already in the early 1970s, carried out more than 100 successful bone marrow trans-

plants between brothers and sisters with matching tissue (HLA) and received the Nobel Prize for medical achievements in 1990 for his pioneer work in the area of HSC transplants. But unfortunately, two out of three patients do not have a matching relative donor. The chances of treatment have increased with registries of unrelated HSC donors. Today, we have the Bone Marrow Donors Worldwide (us being one of its members), a vast anonymous database of HLA antigens of every unrelated donor and stored umbilical cord blood unit in the world, which enables us to look for and, hopefully, also find matching HSC donors for patients anywhere in the world.

The transplantation of allogeneic HSC is an established treatment method in cases of acute myeloid and acute lymphatic leukaemia, some of non-Hodgkin's lymphomas, certain types of chronic myeloid leukaemia, myelodysplastic syndrome, aplastic anaemia, thalassaemia, sickle-cell anaemia and inborn conditions of severe im-

munodeficiency. Autologous HSC transplantation is recommended in some types of acute myeloid leukaemia, non-Hodgkin's lymphomas (plasmacytoma, in particular), and the Hodgkin's disease. Such method of treating the above-mentioned diseases is the only way to cure most of them.

In terms of performing new types of treatment, we are at the same level as the most developed countries. Together with clinicians we are making every effort to improve the procedures and stay up-to-date, since these types of treatment are often the only option for patients to get well.

HAEMATOPOIETIC STEM CELL TRANSPLANTATION

The body of an adult person is composed of over 200 different types of cells, which constitute various tissues and organs and ensure all vital functions. Stem cells (SCs) are undifferentiated embryonic, foetal and adult cells. Embryonic stem cells are only found in embryos, foetal SCs in foetuses and umbilical cord blood, and adult SCs in tissues of adults. Adult stem cells can be haematopoietic stem cells (HSC), mesenchymal stem cells and other. In the phase of embryonic development, the whole organism is developed from SCs, and these also play an important role in adults, since approximately 300 million cells die in one minute but the body is able to substitute them with the remaining small number of SCs.

Haematopoietic stem cells are pluripotent cells with the ability of self-regeneration and differentiation into any type of blood cells (erythrocytes, leukocytes and platelets). The transplantation of haematopoietic stem cells from the bone marrow, peripheral blood and umbilical cord blood is used to treat various types of cancer, certain genetic and immunologic diseases, and it can also be used to treat autoimmune diseases.

It depends on the type of disease and availability of HLA matching donor whether haematopoietic stem cell transplantation will be performed using somebody else's HSCs (allogeneic transplantation) or their own (autologous transplantation).

A donor in allogeneic transplantation may be a close family member. This is a case of related allogeneic transplantation. If a donor is a genetically identical twin, it is a matter of syngeneic transplantation, which is characterised by total tissue matching. When there is no match found among family members, the unrelated allogeneic transplantation of HSC is applied.

Due to extreme heterogeneity or numerous versions of inherited HLA antigens and their combinations, the chances of finding a stranger who is appropriate as an HSC donor for a certain patient are relatively slim. In a majority of cases we allow deviations in one HLA pair (9/10) and in two pairs (8/10), if the source of transplant is the umbilical cord blood, which contains immunologically immature, naive lymphatic cells. Accessibility of matching HSC donors has improved significantly thanks to the establishment of volunteer donors registries, which included over 18 million donors at the end of 2011. A perfect related or unrelated donor is found in approximately 40%, and a donor that does not match in one HLA antigen is found in additional 16%. But it needs to be pointed out that besides the HLA system there are also many other antigen systems, the true meaning of which is still unknown, for example the minor histocompatibility complex.

The transplantation procedure is divided in three periods: the preparation for transplantation, the transplantation and the period after the transplantation. Patients are prepared for transplantation with high dosages of cytostatics or with a combination of cytostatics and radiation. During the transplantation, the collected HSCs are transfused directly into a vessel, the same as in the case of transfusion of blood preparations. Today, the HSCs used are generally collected from donors' blood with cell separators at the Blood Transfusion Centre of Slovenia. HSCs are only exceptionally collected from bone marrow when cells cannot be collected from peripheral blood due to weak blood vessels. The recuperation of the immune system after transplantation is a long process, which can last one to two years or even longer. A weakened immune system can result in many infections, which is why special attention after transplantation is paid to prevent any infections.

HEART FAILURE TREATMENT WITH THE TRANSPLANTATION OF HAEMATOPOIETIC STEM CELLS

Besides the above-mentioned types of treatment with haematopoietic stem cells (HSC), therapeutic procedures with the application of HSCs are quite promising also in the heart failure treatment.

Heart failure is an inability of the heart to provide sufficient pump action to distribute blood to meet the metabolic needs of organs and tissues. The signs of heart failure are shortness of breath, weakened physical abilities and the retention of fluids in the body (leg swelling). Heart failure is usually caused by a disease of the heart muscle (cardiomyopathy) or it may result after myocardial infarction.

Studies show that heart failure is present in 2–5% of the general population, while this share exceeds 10% in old-aged people (>65 years). In Slovenia, around 6,000 new cases are found on an annual basis, with people aged above 65 being the riskiest group.

There are various ways of heart failure treatment, which are connected with the level of disease advancement. Milder types of disease require non-pharmacological measures and treatment with medicines, while in advanced heart failure invasive and surgical treatment methods are also applied. One of the treatment methods of advanced heart failure is treatment with the transplantation of HSCs.

The basis of treatment with stem cells is represented by their ability of transdifferentiation, i.e. stem cells transfer to a new cell line in a suitable micro environment. The basic purpose of stem cell treatment is thus the formation of new cardiac muscle cells to substitute a damaged myocardium and of course formation of a new capillary system in the affected area of the cardiac muscle. An important aspect of heart failure treatment with stem cells is also to implant patient's own cells, thus avoiding a lifetime immunosuppressive therapy and its many, often quite serious adverse effects.

The University Medical Centre Ljubljana is one of the four medical centres in Europe which treat heart failure with stem cells. The programme of HSC transplantation in patients with dilated cardiomyopathy was started in May 2006, and in 2009 patients with ischaemic heart disease in the dilated stage also started receiving treatment with HSC transplantation. Until 2011, this procedure was performed in 58 patients. In most of the patients, significant improvement of the left ventricular ejection fraction and a 6-minute walking test (from 337 m to 452 m on the average) was recorded in the third month after HSC transplantation. The described functional improvement remains stable even more than a year after the procedure.

HSC collection from venous blood is performed in an outpatient clinic. Five days before the collection, a patient is given subcutaneous injections with medicines to stimulate the multiplication of haematopoietic cells in the bone marrow and their transition into blood. HSC collection is performed on the sixth day using a special device. The procedure lasts 4–6 hours. Only haematopoietic stem cells are collected from a patient; all other blood components are returned. The collection is followed by the HSC transplantation procedure. The procedure is safe and relatively non-invasive. It is carried out in a catheterisation laboratory. Throughout the procedure, a patient is conscious and cooperative. Due to a risk of heart rhythm disorders which may appear during or immediately after the procedure, a patient is kept for a 24-hour observation at the intensive treatment unit. The entire procedure of cell collection and transplantation thus lasts 7–8 days. After a patient is discharged, follow-up is performed once a month in the outpatient clinic.

Although the survival rate for patients with heart failure has substantially improved during the last years, the mortality rate still remains very high: 5 years after heart failure has been found, the survival rate for such patients is below 50%.

TREATMENT WITH PLATELET GEL

A special and successful way of treatment, which was used already in the past and will present a big challenge also in the future, is platelet gel treatment.

The concentration of platelets in whole blood collection process was too low, but the beginning of apheresis (in the 1990s) led to intensive research of platelets, which brought to the platelet gel. The gel is a combination of platelets, thrombin (blood coagulation factor) and calcium, and looks like viscous or gelatine-like coagulum. Scientists have found that platelets are very rich in substances that accelerate wound healing and rejuvenate tissues, therefore platelet gel is used particularly in surgery.

Originally, platelet gel was used to decrease the loss of blood during an operation. Later on it was found that the wounds healed faster if platelet gel was applied. Today, the use of platelet gel is very wide, for example in orthopaedics and traumatology to treat complex bone fractures and to improve the healing of ligaments; in plastic surgery (breast reconstruction, treatment of burns, skin transplants, etc.); dentistry (various bone and tooth implants), ENT surgery (operation of the nose, carcinogen-induced skin mutations on the head, etc.), neurosurgery, urology (kidney removal, prostate removal, etc.), cardiovascular surgery. The ingredients of the platelet gel aid the formation of new blood vessels after surgery, thus increasing the outcome of surgery and tissue repair. Recently, platelet gel has started being used also in the treatment of chronic wounds, particularly in patients with diabetes and patients with poor blood circulation. Special platelet gel dressings are also used. By releasing various substances, platelets accelerate wound healing from the surrounding healthy tissue.

Platelet gel may be used for a range or even an infinite number of purposes, since it can be applied in any type of surgery.

BLOOD TRANSFUSION SERVICE IN NUMBERS

NUMBER OF REGISTERED BLOOD DONORS, COLLECTIONS AND DEFERRALS BY THE TRANSFUSION SERVICE IN 2011

Transfusion service	No. of registrations	No. of collections	No. of deferrals	No. of new blood donors
BTCS Ljubljana	55,036	46,908	8,128	5,882
Izola	6,843	6,330	513	808
Jesenice	2,178	1,945	233	415
Novo mesto	6,846	5,954	892	721
Slovenj Gradec	3,328	3,049	279	360
Trbovlje	1,318	1,274	44	127
BTCS total	75,549	65,460	10,089	8,313
CTM Maribor	15,739	13,950	1,789	2,395
Murska Sobota	4,687	4,371	316	334
Ptuj	4,167	3,833	334	483
CTM Maribor total	24,593	22,154	2,439	3,212
CTM Celje	11,061	10,136	925	1,012
TD Nova Gorica	3,886	3,630	256	244
Slovenia	115,089	101,380	13,709	12,781

NUMBER OF PERFORMED COLLECTIONS OF WHOLE BLOOD, PLASMAPHERESIS AND THROMBAPHERESIS BY THE TRANSFUSION SERVICE IN 2011

Transfusion service	No. of whole blood collections	No. of performed plasmapheresis	No. of performed thrombapheresis
BTCS Ljubljana	44,205	711	1,724
Izola	6,329	0	0
Jesenice	1,842	0	0
Novo mesto	5,954	0	0
Slovenj Gradec	3,049	0	0
Trbovlje	1,250	0	0
BTCS total	62,629	711	1,724
CTM Maribor	13,748	10	192
Murska Sobota	4,333	0	0
Ptuj	3,831	0	0
CTM Maribor total	21,912	10	192
CTM Celje	10,136	0	0
TD Nova Gorica	3,630	0	0
Slovenia	98,307	721	1,916

**NUMBER OF UNITS PREPARED FROM
WHOLE BLOOD BY THE TRANSFUSION
SERVICE IN 2011**

Transfusion service	Number of units conc. of erythrocytes	Number of units conc. of platelets	Number of fresh frozen plasma units for clinical use	Number of fresh frozen plasma units for fractionation
BTCS Ljubljana	65,351	5,799	20,934	44,457
CTM Maribor	21,620	2,700	11,419	10,410
CTM Celje	9,782	734	2,318	7,451
Slovenia	96,753	9,233	34,671	62,318

**NUMBER OF ISSUED BLOOD
COMPONENTS BY THE
TRANSFUSION SERVICE IN 2011**

Transfusion service	Number of units conc. erythrocytes	Number of units conc. platelets from whole blood	Number of units conc. platelets from thrombapheresis	Number of units of fresh frozen plasma
BTCS Ljubljana	40,824	4,032	2,453	14,502
Izola	5,665	117	5	819
Jesenice	2,248	67	2	761
Novo mesto	4,015	372	15	1,110
Slovenj Gradec	2,345	141	0	761
Trbovlje	1,792	40	0	305
BTCS total	56,889	4,769	2,475	18,258
CTM Maribor	16,017	1,786	114	7,775
Murska Sobota	4,088	250	42	646
Ptuj	2,188	56	2	977
CTM Maribor total	22,293	2,092	158	9,398
CTM Celje	7,510	550	1	1,762
TD Nova Gorica	3,590	237	9	889
Slovenia	90,282	7,648	2,643	30,307

DETECTED INFECTIONS IN 2011 IN THE SCREENING OF COLLECTED BLOOD UNITS:



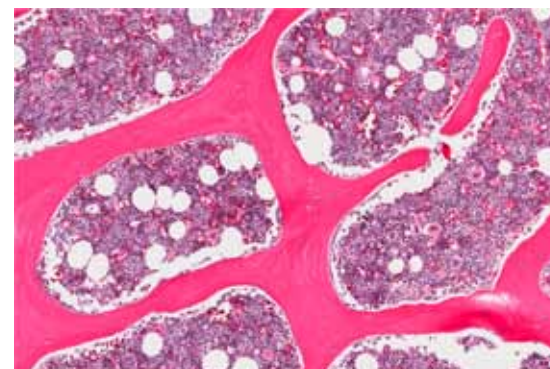
17	hepatitis B positive units
0	hepatitis C positive units
2	HIV positive units (AIDS)
12	anti-Treponema Pallidum positive units (syphilis)

FOR IMMUNOHAEMATOLOGIC TESTS FOR PATIENTS WE PERFORMED:



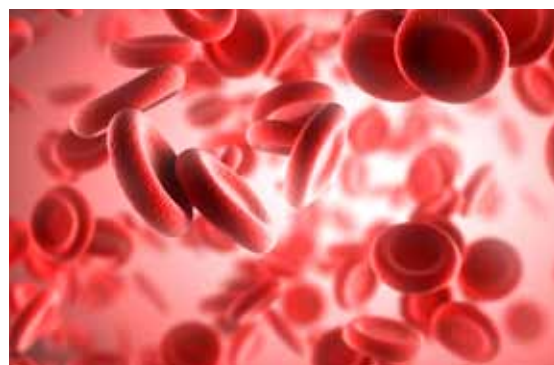
143,288	compatibility tests
76,789	ABO, RhD and Kell blood typing
74,642	indirect Coombs tests
16,194	direct Coombs tests
2,553	specifications of erythrocyte antibodies
6,851	tests preceding Ig anti-D injection (during pregnancy or after labour)
1,247	platelet tests
459	granulocyte tests
351	molecular biology tests

PERFORMED EXAMINATIONS, TESTS AND SERVICES RELATED TO TISSUE MATCHING:



9,681	services supporting organ transplantation
1,735	services supporting bone marrow transplantation
2,119	HLA typing for the Slovenia Donor Registry
717	services for diagnostics
559	services for the Slovenia Donor Registry

FOR THERAPEUTIC SERVICES IN 2011, WE PERFORMED:



2,115	autologous blood collections (autotransfusions)
1,488	therapeutic whole blood collections
62	autologous stem cell collections
21	allogeneic stem cell collections
37	granulocytophereses
23	therapeutic aphereses

ACTIVITIES PERFORMED BY THE SLOVENIA DONOR REGISTRY:



2	members of our Slovenia Donor Registry donated HSCs for a patient abroad
21	Slovenian patients received matching HSC donors (20 in foreign registries and one in ours)
2	patients received matching umbilical cord blood units

NUMBER AND TYPE OF REPORTED ADVERSE REACTIONS IN BLOOD TRANSFUSIONS IN SLOVENIA IN 2011:



3	haemolyses
1	transfusion-related acute lung injury (TRALI)
10	circulatory overloads (TACO)
57	allergies
7	anaphylactoid reactions
50	non-haemolytic febrile reactions
3	dyspneas
5	other
136	total

ANNOUNCEMENTS

PUBLICATIONS

1.01 ORIGINAL SCIENTIFIC ARTICLES

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BLOOD TRANSFUSION SERVICE IN SLOVENIA

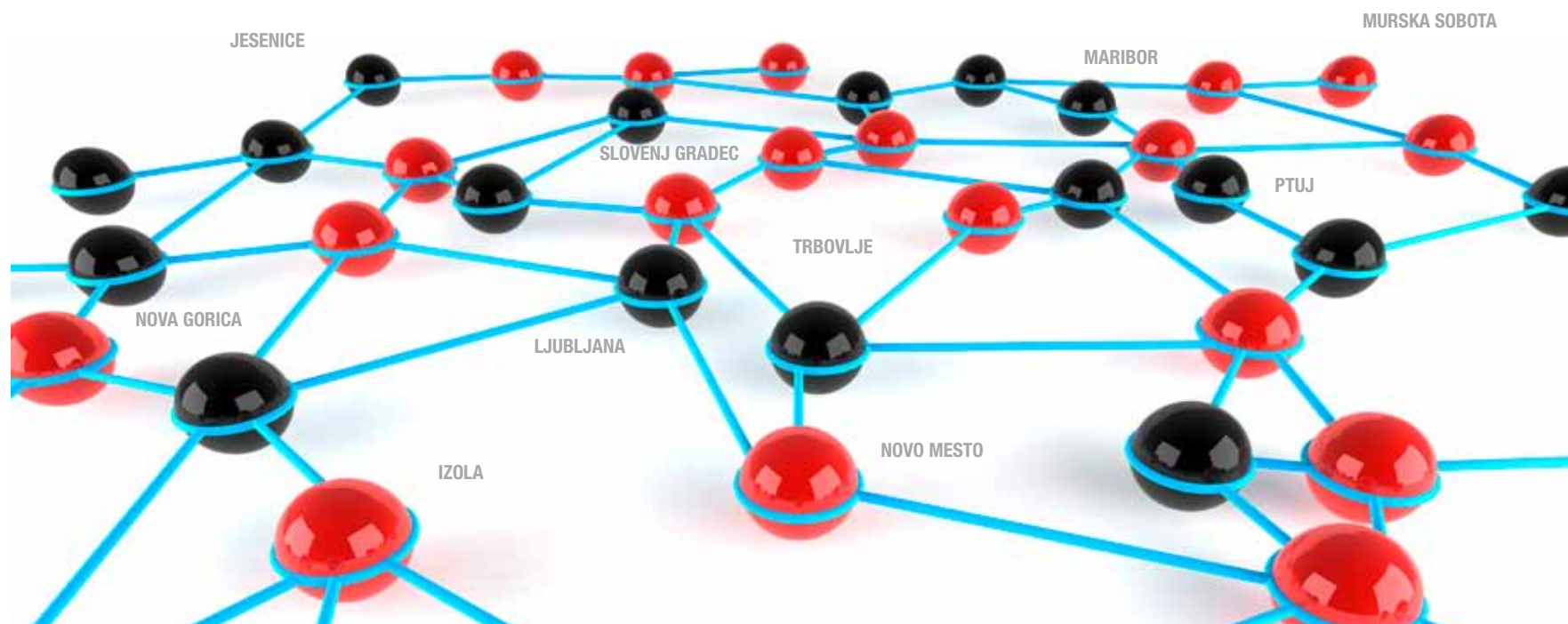
The transfusion service in Slovenia is comprised of the Blood Transfusion Centre of Slovenia (BTCS) with the associated Novo mesto, Trbovlje, Slovenj Gradec, Izola and Jesenice Units of Transfusion Medicine; The Centre of Transfusion Medicine Maribor (CTM), with associated units in Ptuj and Murska Sobota; the Centre of Transfusion Medicine Celje (CTM) and the Department of Transfusion Medicine of Dr. Franc Derganc Nova Gorica General Hospital.

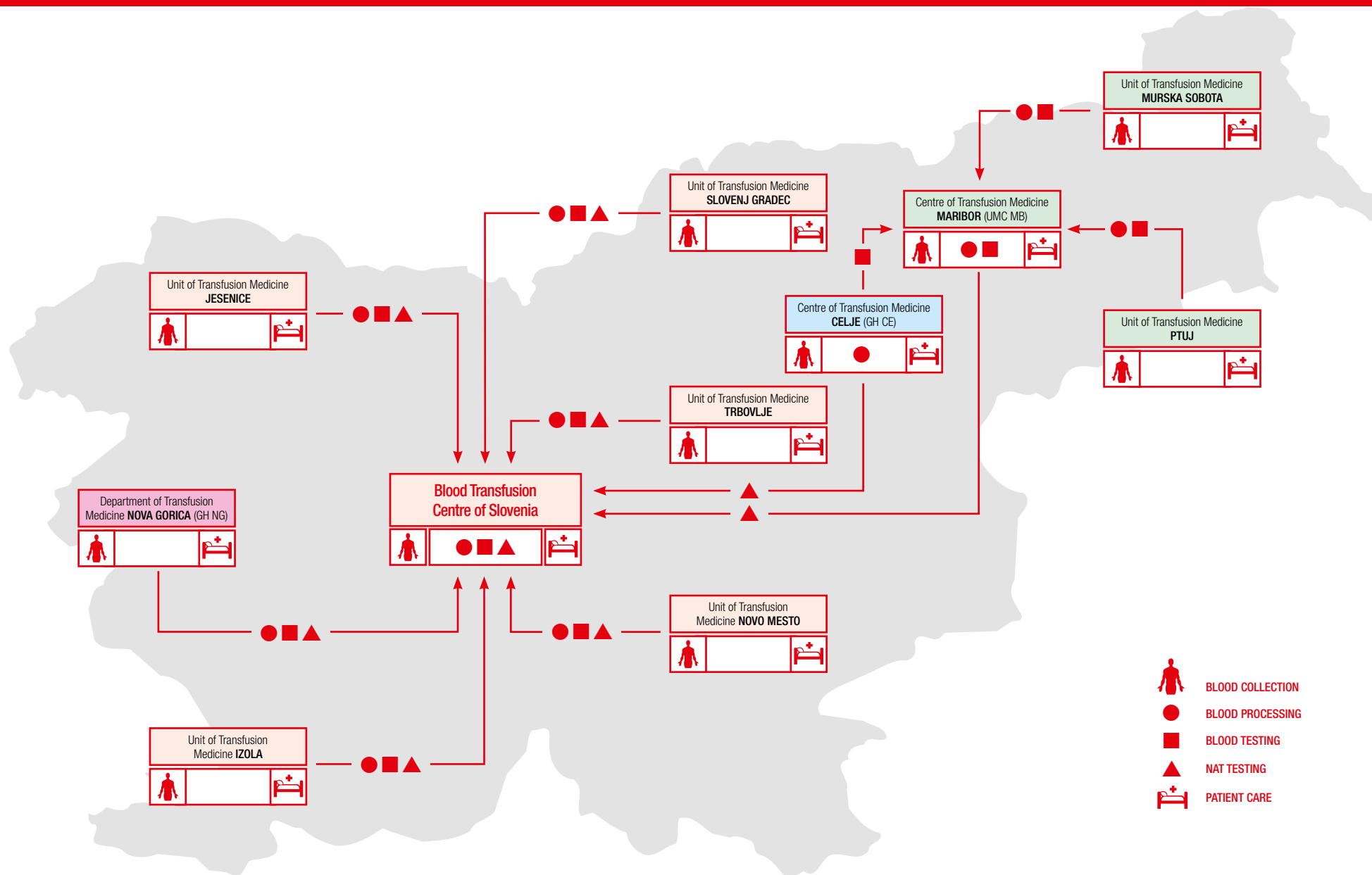
The entire transfusion service performs the activity of blood collection from blood donors.

The processing of blood into components is performed at the Blood Transfusion Centre of Slovenia in Ljubljana, the Centre of Transfusion Medicine Maribor and the Centre of Transfusion Medicine Celje.

The processed blood is returned to the units according to their needs and the plan.

Blood testing is performed at the Blood Transfusion Centre of Slovenia in Ljubljana and the Centre of Transfusion Medicine Maribor.





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