醫療財團法人
台灣血液基金會
捐血救人 Taiwan Blood Services Foundation

2022 ANNUAL REPORT

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In 2022, the COVID-19 pandemic once heated up. The number of daily infections even reached over 10,000 people for quite a long time, compelling the blood donation activities to suffer a row of heavy setbacks. Many colleges and universities adopted online teaching again, companies also started remote work mechanisms, and blood donation activities were canceled one after another. Only after the pandemic reached its peak in autumn and began to stabilize, gradually did the government relax its epidemic prevention restrictions step by step. As a result, the hospitals resumed normal diagnosis and treatment, and the blood consumption increased accordingly. There were 155,869 more units supplied in 2022 than in the same period of 2021, an increase of 4%.

Pandemic intrusion in the past three years caused several rounds of blood shortage crisis. However, we not only actively promoted and implemented anti-epidemic measures to provide a safe environment for blood donors, but also strengthened communication with the public to dispel their doubts and concerns about blood donation activities. Thus, we were able to maintain a normal blood supply to meet the demand. With all the efforts of our staff, the national blood donation rate reached 8.08% in 2022, a new high in the past ten years. Sufficient medical blood supply is a clinical need highly related to the life and health of people. Therefore, our blood centers, as the best backup for medical teams, have combined social resources to continuously raise sufficient blood sources to ensure the uninterrupted supply of blood products to fully support clinical needs.

Since 2020, Taiwan Blood Services Foundation(TBSF) has started to promote the importance of corporate social responsibility (CSR) and corporate sustainability to colleagues. Year 2021 was designated as an "education and training year" to introduce concepts related to sustainable development, with a focus on cultivating the relevant knowledge and ability for managers. After a resolution by the management consensus camp, 2022 was officially launched as the "First Year of Corporate Sustainability", establishing a Sustainable Development Promotion Committee to plan, implement and supervise the strategies and actions related to corporate sustainability of TBSF and its various blood centers so as to systematically implement sustainable goals step by step. We also published our first sustainability report in 2022 and participated in the "Taiwan Corporate Sustainability Awards (TCSA)" Report Category evaluation and won the "Silver Award in Category 2 of Government and NGO Units".

The goal of TBSF is to advocate for voluntary non-remunerated blood donation and to arouse the love of everyone to jointly complete the mission of blood donation to save lives. Thus, the sustainable development of blood business is an unshirkable social responsibility of TBSF. We should always review our relevant operations and services and strive towards the goal of sustainable development, especially when facing various challenges of the times. Therefore, the purpose of publishing the sustainability report is to review our corporate sustainability efforts and plan for future direction on an annual basis. In 2022, we fully digitized our official documents and attendance system and implemented paperless administrative operations. In the future, we will gradually undergo energy conversion, adopt electric energy blood donation mobiles, be friendly to the environment and implement carbon reduction. In terms of organizational streamlining, we have merged Tainan and Kaohsiung Blood Centers, because they are very close in distance. After merging, their service area accounts for about half of Taiwan's land area and serve 40% of Taiwan's population. This will allow for more effective systematic planning of blood sources and provide better services. The construction of the new workplace in Annan District, Tainan City started in May 2022 with the goal to build the most advanced blood component manufacturing center, which is scheduled to be completed and officially opened in October 2024. At present, the expansion site of Taipei Blood Center has been purchased and will be planned as two connected buildings of Taipei Blood

Center after the completion of relevant land use zoning changes. This will lay the foundation for the business development of Taipei Blood Center for the next 30 years. It is expected that the latest technology can be introduced into this new well-designed architectural space, making it the number one in Taiwan and hopefully a leader in Asia.

To ensure the safety of blood products, we replaced the testing instruments in the laboratories of our Taipei and Kaohsiung Blood Centers with a new type of virus nucleic acid testing machines and blood screening chemical luminescent particle immunoassay analyzers. These two new instruments are the mainstream testing equipment used by blood centers in advanced countries around the world. This update allows Taiwan's blood centers to keep pace with blood testing and greatly improve the quality and efficiency of blood testing. With better detection sensitivity than the previous equipment, the new instruments can shorten the testing time and alleviate the waiting time at the hospital during emergency blood demand. Year 2022 can be said to be a year of great leap forward for TBSF's testing quality. In addition to continuously improving and upgrading testing equipment, we have also gradually converted equipment in each blood center to more advanced and automated equipment so as to reduce the human error rate and make blood product manufacturing process more consistent.

No matter how advanced medical technology is, blood is still irreplaceable. Under the dual impact of declining birth rate and aging population, blood donation organizations must find new countermeasures to make it a sustainable cause in the balance of blood donation and supply. We always believe that the three years of pandemic attack was only transitional and would go away soon. With active publicity to call on the public to show great love, we have fulfilled our social responsibilities to make blood available for patients in need. We will continue to strive for excellence in blood quality and safety, so that Taiwan Blood Services Foundation can provide sufficient and safe clinical blood supply and become the strongest backing for the medical frontline. We will continue to create a warm platform to continuously encourage blood donation, serve blood donors and safeguard blood users. We always do our best for the common good of society and let love last forever.

Sheng-Mou Hou

President

About us

Our Aim

Upholding the concept of "happy blood donation and safe blood use," the TBSF practices a voluntary non-remunerated blood donation system, insists on strict blood quality control and provides the most complete services for blood donors and blood recipients so as to ensure a sufficient blood supply for clinical uses.

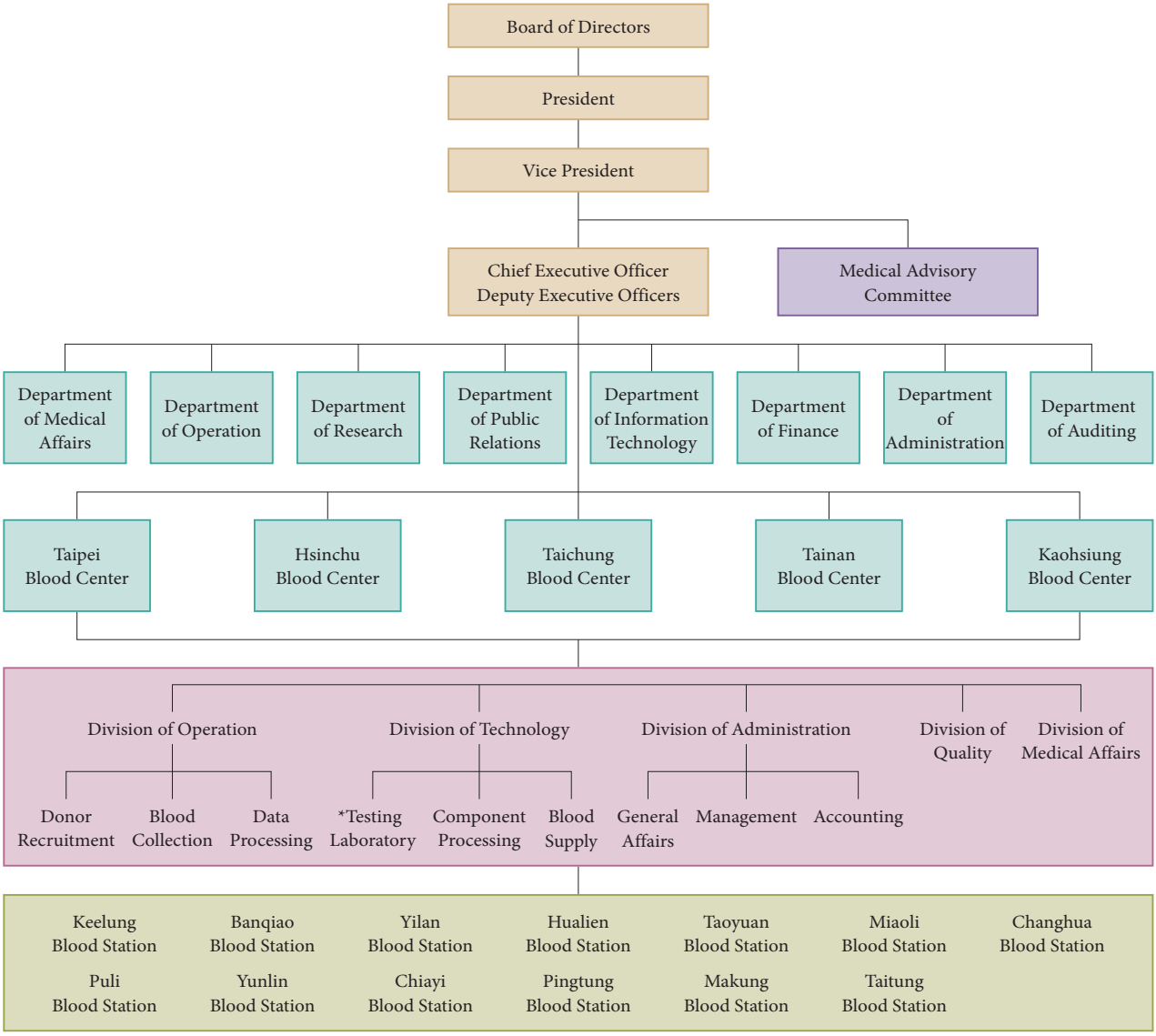
Our Vision

Adhering to sustainable development under the principles of integrity, harmony, efficiency, and innovation, the TBSF vows to become the leader in blood supply for safe clinical uses in Taiwan.

Our Missions

1. To plan and implement blood donation services.
2. To establish blood donation systems, and to conduct research and development on safe blood use.
3. To conduct research on blood science and technology.
4. To collect , laboratory-test, and supply blood for patients of public and private hospital.
5. To conduct research on the health maintenance of blood donors.
6. To conduct matters concerning the use and safety management of blood suitable for transfusion.
7. To plan and supply blood in large quantity at times of major disasters or wars.
8. To commission toll fractionation , to storage and supply domestic plasma derived products.
9. Other matters concerning blood donation and supply.

Organization



Note: * There are 2 centralized testing laboratories in Taipei and Kaohsiung Blood Center.

** From January 1, 2023: Tainan Blood Center will be reformed as Tainan Blood Station, under the administration of Kaohsiung Blood Center. Chiayi Blood Station will be under the administration of Kaohsiung Blood Center.

History of Taiwan Blood Services Foundation (1974~2022)

1974

April • Chinese Blood Donation Association was established.

August • Taipei Blood Center was established.

1975

October • Taichung Blood Center was established.

1976

December • The Kaohsiung Blood Center was established.

1978

July • Taipei Blood Center started the production and supply of blood components, including packed RBC, washed RBC, WBC concentrates, platelets, fresh frozen plasma and frozen plasma.

1981

July • Tainan Blood Center was established.

1983

January • Taipei Blood Center introduced leukocyte and platelet apheresis.

1985

July • Human leukocyte antigen (HLA) laboratory was established.

1987

June • Hospital-based and Red Cross paid donor blood banks were closed by government.

1988

January • Implementation of anti-HIV-I test.

1989

December • To prevent blood donations from high-risk AIDS groups and other unsuitable donors, the Blood Centers started "a conscience call back", whereby donors could call to notify the Blood Centers if the blood donated is unsuitable.

1990

January • Republic of China Blood Services Foundation was established by Chinese Blood Donation Association.

1991

April • Hualien Blood Center was established.

December • The annual blood donations exceeded one million units, and the blood donation rate

reached 5.18%.

1992

May • Hsinchu Blood Center was established.

• Implementation of anti-HCV test.

• Establishment of electronic database of red cell phenotypes.

July • Republic of China Blood Services Foundation was renamed as Chinese Blood Services Foundation.

1993

February • Introduction of HLA-matched apheresis platelets.

September • Building an information management system of blood donation and processing.

1995

April • It is the first time, the President summoned the 28 outstanding blood donors in the presidential palace for annual blood donor recognition event.

1996

January • Implementation of anti-HTLV test.

1997

January • The Minister of Department of Health, Chang Po-ya, and the President of TBSF, Lin Kou-Sin, jointly announced to start the productions of plasma derivative products.

1998

February • Implementation of RBC irregular antibody screening test.

April • The first public umbilical cord blood bank was established. The plan was ended in January 2013.

1999

March • The Blood Centers got approval of the MCA (Medicines Control Agency in UK) and sent source plasma to SNBTS (Scottish National Blood Transfusion Service) for fractionation.

2001

August • Consolidated 6 blood centers' testing laboratories into 2 centralized labs located in Taipei and Kaohsiung blood center.

December • The "TBSF" plasma derivative products started to supply.

2004

October • Chinese Blood Services Foundation was renamed as Taiwan Blood Services Foundation.

2007

January • Implementation of bacteria testing for all apheresis platelets.

2009

September • The archive sample bank built at Hsinchu Blood Center was launched.

2013

January • Implementation of Nucleic Acid Amplification Testing (NAT).

2015

July • The TRALI (transfusion-related acute lung injury) prevention policy was initiated with the following two initiatives: 1) male plasma was prioritized for transfusions. 2) HLA & HNA antibody screening for female apheresis donors.

November • Implementation of cholesterol, LDL-C, and HbA1c tests every 3 years for those who have donated blood in the past 2 years and are above 40 years old.

2016

October • Implementation of the mobile social communication app LINE official account named " i-Blood " with intelligent query, personalized notification and instant push broadcast functions.

2017

February • Haemovigilance reporting system was launched.

April • Hualien blood center was reorganized and merged into Taipei and Kaohsiung blood centers.

2018

August • The new Blood Information Management System based on Internet Data Center was launched.

December • The universal screening of Mia antigen have been introduced.

• The TBSF hosted at the 5th APEC Blood Safety Policy Forum in Taipei.

2019

June • The singer, Miss Fang Wu, our blood donation spokesperson, composed the song to encourage the public to give blood.

November • Testing and labeling of RBC antigens C, c, E, e, Jka, and Jkb for leukocyte-reduced RBCs.

2020

March • Hsinchu Blood Center has added the supply of " irradiation of blood products " since March 1.

March • In response to the COVID-19 pandemic, we have set up the TBSF Epidemic Prevention Command Center.

June • To introduce the concept of patient blood management, we have published the " Practical Blood Transfusion Manual " and distributed it to hospitals.

August • The Hsinchu Blood Center has built a laboratory for "Emerging Infectious disease," which has been since September 25 approved as a "Designated Testing Agency for Reported Cases of Severe Special Infectious Pneumonia" by the Central Epidemic Command Center.

2021

August • Leukocyte-Reduced RBCs are comprehensively supplied to various medical institutions, opening an important milestone for blood transfusion safety.

October • Fubon Financial Holding donated "Taiwan's first electric blood donation mobile - Fubon" to Taipei Blood Center, not only providing a blood donation environment without exhaust gas but also making a contribution to the reduction of carbon dioxide for the earth.

2022

May • The Association of Tsai Ingwen's Friends", a civilian group founded by the fans of President Tsai Ing-wen, donated the "Little Ing" environmentally friendly electric energy blood donation mobile and blood delivery vehicle. The donation ceremony together with a blood donation drive was held in Daan Forest Park. TBSF President Sheng-Mao Hou represented to receive the gifts under the witness of President Tsai Ing-wen and others.

July • TBSF first issued its "2021 Sustainability Report".

OUR PERFORMANCE

OUR PERFORMANCE

Recruitment and retention of blood donors

Blood Donation Month — "Donate a bag of blood, love of life!"

Every year before and after Lunar New Year, coupled with the cold weather and many people catching cold, the number of people rolling their sleeves to donate blood decreases significantly. Moreover, due to the resurgence of COVID-19 pandemic, schools closed again, many companies implemented staggered offices or work from home, and people avoided going out. As a result, blood donation almost came to a halt. The theme of 2022 Blood Donation Month is "Donate a bag of blood, give love of life!" There was a press conference held on December 30, 2021, on

The theme of 2022 Blood Donation Month is "Donate a bag of blood, give love of life!" Left5 is the TBSF President Sheng-Mao Hou.

Photocall in front of the Presidential Office Building.

which TBSF President Sheng-Mao Hou stressed that during the period when the pandemic was prevalent in 2020, the nationwide blood donations had dropped by more than 10%. In 2021, due to the impact of the pandemic, blood recruitments were even more difficult; during the 2021 COVID-19 Level 3 alert period, hospitals had reduced their load, and clinical use had dropped by about 12.7%. After the downgrade of alert Level, patients returned and blood usage increased significantly in November 2021, an increase of 5% over the same period last year. The total blood supply in November was 214,295 units. As the pandemic slows down and stabilizes, it is estimated that blood usage will continue to grow. As Lunar New Year holiday is approaching, more blood donors are needed to return to the ranks of blood donation and continue to donate blood regularly.

Recognition of blood donors with outstanding donation merit

There were 36 representative blood donors with outstanding donation merit in 2021 received by President Tsai Ing-wen at the Presidential Office Building at 11 a.m. on Feb. 9, 2023.

Exerting social communication power and continuing to promote without slackening.

The "Comprehensive Blood Quality Control: The Unique Blood Management System with Ubiquitous Intelligence in Taiwan" submitted by Taiwan Blood Services Foundation (TBSF) has been unanimously approved by the review panel to be awarded with the bronze medal award in the "National Biotechnology and Medical Care Quality Award" contest and also certified by the "SNQ (Symbol of National Quality)

Certification — Medical Periphery Category / Public Welfare Service Group, proving that our medical blood is so excellent in quality that it provides peace of mind and health protection for our countrymen. This is the fifth time that TBSF has been recognized by the SNQ Award. This honor was reported in a special article in the "Economic Daily News" on January 25, 2022 and in the issue 1314 of "Business Today" published on February 24, 2022. During the interview, TBSF President Sheng-Mao Hou stated that the "Blood Management Information System" has not only built an intelligent expert model to assist in blood donation qualification review but also comprehensively connected the donation and blood supply processes to improve blood management efficiency and enhance blood safety. That is, comprehensive electronicization shortens time difference and provides more timely services, while technological and digital services improve the blood donation experience for donors. In the future, TBSF will not only accept irregular re-examinations and random inspections under the SNQ supervision mechanism but also actively and rigorously manage itself to become

以行動化、智能化全國單一血液管理資訊系統獲銅獎肯定及SNQ認證

台灣血液基金會 國家生技醫療品質獎5連霸

台灣血液基金會獲「國家生技醫療品質獎」紀錄

年份	獲獎題目	獎項
2017	安全醫療用血來源的領航者	國家生技醫療品質獎「醫療週邊類」銀獎
2018	全方位、高效能的捐血檢驗守護國人輸血安全	國家生技醫療品質獎「醫療週邊類」銅獎
2019	南台灣、偏鄉、離島病患用血的守護神－高雄捐血中心	國家生技醫療品質獎「醫療週邊類」銅獎
2020	全球首創人類單株抗體檢測米田堡血型、輸血安全更上層樓	國家生技醫療品質獎「醫療週邊類」銅獎
2021	行動化、智能化的全國單一血液管理資訊系統－全方位管控血液品質	國家生技醫療品質獎「醫療週邊類」銅獎

Economic Daily News" on January 25, 2022

台灣血液基金會打造智能平台 五度獲SNQ與國家生技醫療品質獎肯定

In the issue 1314 of "Business Today" published on February 24, 2022

"GTV News" produced a special topic called "Unlocking the Code of Passionate Blood" with a series of 5 episodes

a support for people's health. It will continue to uphold the concept of "happy blood donation and safe blood use", continuously improve, create a better blood donation environment, and provide high-quality medical blood.

"GTV News" produced a special topic called "Unlocking the Code of Passionate Blood" with a series of 5 episodes, including 'The Key to Taiwan's Blood Shortage: Low Blood Donation Rate Among Young People', 'Strict Control of Blood Quality: Managing Blood as Medicine', 'Strict Rules for Blood Donation: People with These Conditions Are Banned from Rolling up Sleeves for Blood Donation', 'Enterprises Raise Passionate Blood for Public Welfare: Entering Remote Areas to Spread Love', 'What to Do When Rare Blood Types Are Lacking? Establish a List of Blood Donors'. The series were aired through broadcasts during news hours and online playback, making more people aware of the various tasks of the blood donation centers and the importance of blood donation.

Strengthening the breadth of publicity and deepening the image of public welfare

In 2022, TBSF shot three new image videos, including "Dongyin Edition", "Pandemic Edition" and "Zi Nan Temple Edition".

The content of the Dongyin Edition is: Dongyin Island is located in the northern border of the country. Waited for 18 years, TBSF has prepared for several months and overcome all difficulties to transport a blood donation mobile to Dongyin, allowing soldiers and civilians in Dongyin to understand and participate in blood donation. It also symbolizes that the blood center hopes to extend its service to every township.

The content of Pandemic Edition is: The COVID-19 pandemic has affected the world, and avoiding contact with people has also made blood-raising activities difficult. However, the demand of blood users is still there, even though

resource constraints are imminent. During this period, thanks to the continuous support of various non-governmental organizations, activity units and blood donors, blood donation activities can continue and patients can tide over the difficulties.

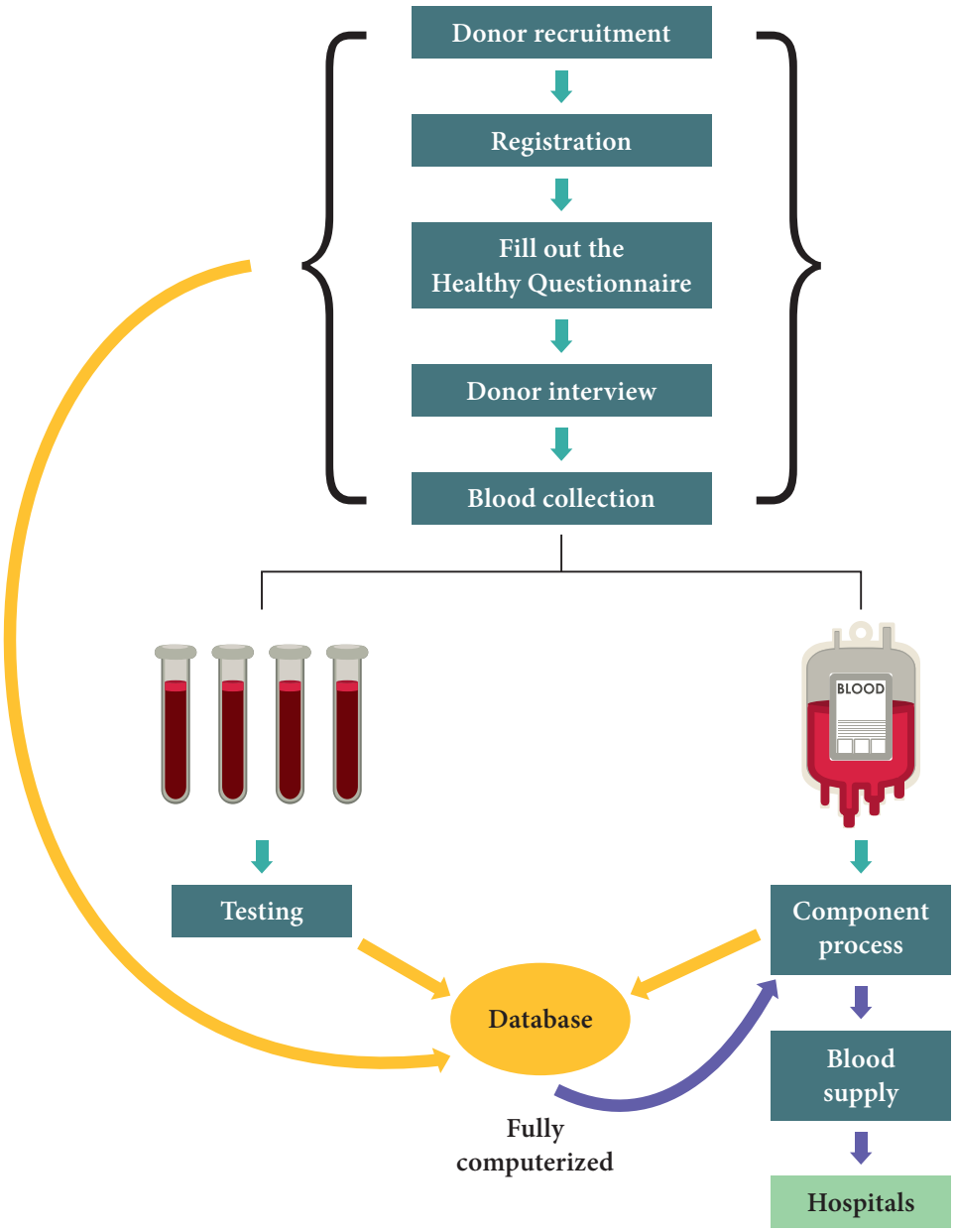
TBSF shot three new image videos, including "Dongyin Edition", "Pandemic Edition" and "Zi Nan Temple Edition"

The content of Zi Nan Temple is: Zi Nan Temple is the No. 1 blood collection organization in central Taiwan and also has the highest blood collection volume among temples in the country; it has spared no effort to support medical blood in central Taiwan for the past 11 years and has made a lot of contributions. It is the best "emergency support group" in the country.

Participate in international conferences and academic exchanges, share experiences and gain new knowledge

TBSF actively participates in various international conferences and exchanges to absorb relevant new knowledge and to obtain important references for various improvements. In fact, such events are also an important channel to learn of the current international situations. In 2022, most of the international conferences and exchange activities, such as APBN Board Video Conference , AABB and the 37th International Congress of the ISBT were held in the form of webinars due to the COVID-19 pandemic.

Blood operation process



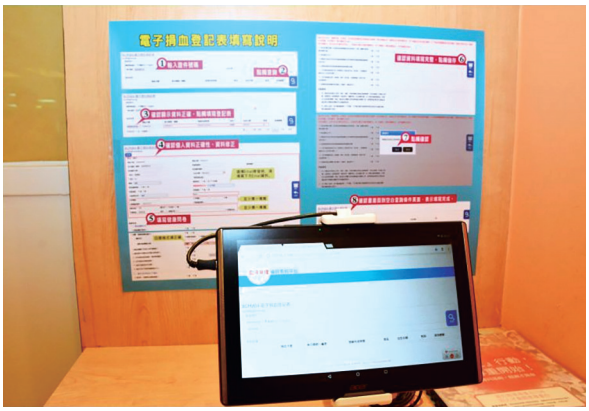
The production of each bag of blood results from regional blood donation activities held after the evaluation and planning by the Donor Recruitment Section of the Blood Center. The personal information of each blood donor is filed and stored after the blood donor completes the blood donation registration form, the physical examination interview, and the blood collecting process. Then, each tube of collected blood is sent to the Laboratory for viral, biochemical, & blood-type testing. The testing results are automatically delivered to the computer for product labeling. Each blood bag is sent to the Blood Component Processing Section to be further processed, such as packed RBCs, platelets, and so on. Finally, each qualified blood unit will be sent to the Distribution Section based on the need of the hospitals.

Blood donation operation process

A “Private Interview Space” is arranged in each blood center, blood donation room, and blood donation van so that each blood donor can honestly complete the survey and relevant questions in private surroundings. The following is an introduction to the blood donation process:

A photo ID, such as an Identification Card of Taiwan is needed to verify the identity of a blood donor during the blood donation process. In 2022, more than one million people donated their blood so the blood supply reached approximately 6 billion milliliters.

Inside the blood donation van, each seat is equipped with a monitor that plays a health lesson video about blood donation to remind blood donors of the importance of blood safety.

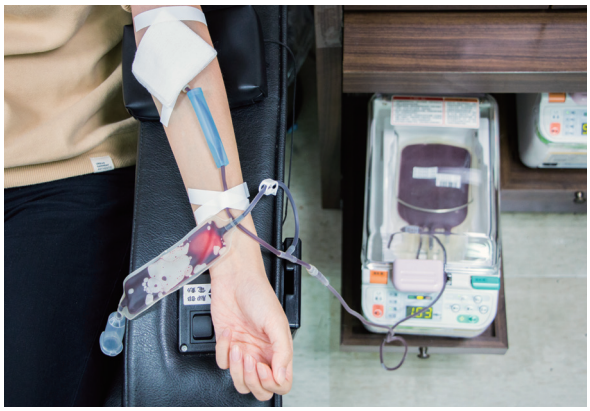


Each person needs to fill in the blood donation registration form, which in addition to basic information, also asks questions concerning recent individual health status and whether there is a high risk of sexual behavior and other issues that need to be answered honestly. Lastly, each person needs to sign the form.

The “Private Interview Space” is arranged to enable blood donors to honestly answer the questionnaire and related questions in private surroundings.

In addition to measuring weight, body temperature, blood pressure and hemoglobin, a staff will provide health education about blood safety and ensure that the blood donor is qualified. This is the first step for blood safety check.

The “Conscience Call Back” sheet can remind blood donors to call the blood center back via the phone number on the sheet to ensure appropriate follow-up treatment of the blood can be carried out if they have not told health professionals of high-risk behaviors or any issues that they think may affect the safety of the blood.



During the blood collection process, each blood bag is put in the automatic oscillator for weight measurement, and the quantity of collected blood is monitored to protect the safety of blood donors.

Each blood donation will have four sample tubes reserved. Three of them are for blood grouping, biochemical and infectious disease test, and the rest one is for archive storage.

The collected blood will be temporarily stored in a temperature-controlled container to maintain quality.

In the bright and open blood donation rest area, snacks like cookies and milk are served. Magazines and TVs are also provided in the area so that blood donors can relax after the process.

The collected blood and tubes will be delivered to the blood center by professionals in dedicated incubators and trolleys.

The following table lists relevant criteria and conditions for blood donation:

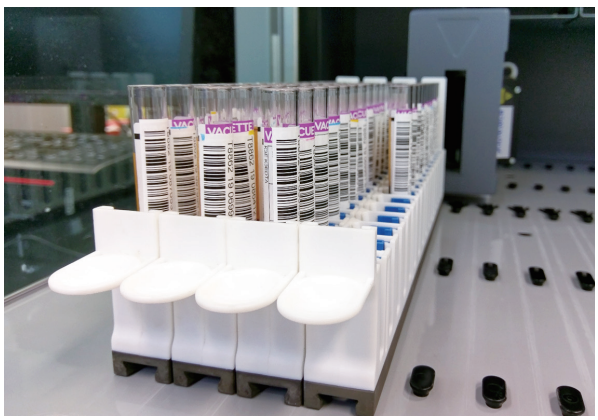
	Whole blood		Platelet apheresis	
Volume	250 ml	500 ml	1 unit	2 units
Age	17-65	17-65	17-65	17-65
Body weight	male: 50 kg female: 45 kg	60 kg	60 kg	60 kg
Oral Temperature	35.5~37.5°C			
Hemoglobin	male: 13g% female: 12g%			
Platelet count			180,000/uL	Trima: 250,000/uL MCS: 300,000/uL Amicus: 250,000/uL
Interval	2 months	3 months	2 weeks	
Max donations per year	male: 1500 cc female: 1000 cc		24 donations	

Blood testing

Donor screening is mainly performed in two sites, Taipei and Kaohsiung. Routine donor screening includes ABO, D, Mia antigen, irregular antibody, ALT, HBsAg, anti-HCV, anti-HTLV, anti-HIV, syphilis, and nucleic acid testing (HBV, HCV, and HIV). Testing volume is around 5,000 per day using fully automated testing equipment. Test results are delivered via an exclusive network to each blood center to meet the goals of speed, accuracy, and safety.

The testing procedures are as follows:

The specimen centrifugation.



Tube ranking.

Alinity s:

Test for HBsAg, anti-HCV, anti-HTLV, anti-HIV, and syphilis.

Beckman PK7400:

Test for ABO, D, Mia, C, c, E, e, Jka and Jkb.

Canon TBA-nx360:

Test for ALT, Cholesterol, and LDL-Cholesterol.

Procleix Panther:

Test for HBV, HCV, and HIV

Donor services

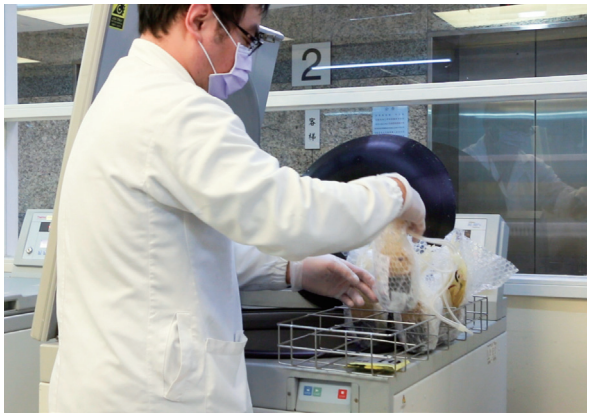
In addition to the routine donation testing, our Foundation has performed total cholesterol, LDL-cholesterol, and HbA1c test for regular blood donors of 40 years old or more.

Component processing

After non-remunerated blood donated is returned to the blood donation center, it will go through the counting process, computer input, blood component processing, checking and bacteria testing (Apheresis platelet) to be made into a variety of final blood products. These final products will be supplied to each hospital for patient blood transfusions after undergoing strict blood testing processes.

The number of blood units is counted and recorded in the computer.

Generally, blood will be sent to the Component Process Section within 8 hours of blood collection.



Based on different centrifugal criteria, different final blood products can be produced.

Blood can be separated into plasma in the upper layer and red blood cells in the lower layer based on the principle of different blood composition density. The automatic blood components extractor can squeeze plasma out into adjunct bags to be sealed.

Packed RBC is sealed into four sections for blood group testing and cross matching in the future.
Each blood bag tubing has a unique section number for further tracing, checking, and testing.

Using a leukocyte reduction filter or inline filtration blood bags, white blood cells are removed to make the blood safer for transfusion recipients.

Every blood bag has a unique barcode and blood type label for further tracing, checking, and testing.

Qualified blood products are put in blue baskets while unqualified ones are put in red baskets; while ones with quarantined blood products are put in green baskets, and ones that have not been examined are in yellow baskets.

Each qualified component needs to be labeled and placed neatly in blue baskets. These items are then managed in the warehouse according to different temperature conditions.

Separated plasma and each final product needs to be carefully placed neatly to avoid stacking for uniform freezing.

Bacterial testing

Each unit of apheresis platelets is supplied only after passing bacteria testing to ensure the safety of transfusion recipients.

The preservation time, temperature, and material cost for each final product are listed in the table below:

Component	Expiration	Storage temperature	Cost (Dollar/ unit)
Washed red blood cells	24 hours	1~6°C	675
Deglyceride Frozen RBCs	24 hours	1~6°C	1,375
Whole blood	35 days	1~6°C	575
Leukocyte-Reduced RBCs	35 days	1~6°C	925
PLT Concentrate	5 days	20~24°C	300
Apheresis platelets	5 days	20~24°C	4,300
Pre-storage Leukocyte-Reduced Apheresis Platelet	5 days	20~24°C	7,300
White blood cell	1 day	20~24°C	300
Cryoprecipitates	1 year	< -20°C	150
Fresh frozen plasma	1 year	< -20°C	300
Frozen plasma	5 years	< -18°C	200

Distribution

The management, allocation, and transportation of blood for medical use are monitored based on the strictest standards in the five blood donation centers. The blood storage warehouse in each blood donation center sets different conditions for preservation temperature, environment, and equipment for different blood products. Blood supplies for hospitals are always available 24 hours. Specific refrigerator vans for blood freezing/storage are responsible for the allocation and transportation of blood for medical use in each hospital blood bank.

Current blood supply channels include five blood centers, 13 blood stations, and several proxy-supply hospitals. Each blood storage warehouse of a blood center is equipped with a central temperature monitoring system to monitor blood temperature 24 hours/day. In addition to written documents, relevant information about temperature is filed and stored in electronic files so the records are more complete and accurate, and both the blood items and the equipment are safer and more secure. Each blood transportation

vehicle of a blood donation center is equipped with the latest cold-storage/freezing system to monitor whether the temperature is stable and maintained within the standardized range so that the quality of each blood item can be ensured. Blood supplies are currently classified into two categories: individual and group. Individual blood supply refers to the approach for an individual to get blood from the blood center when patients in hospitals that neither have blood banks nor a signed group-supply contract for the need of a blood transfusion. Group blood supply refers to hospitals that have blood banks or have signed a "group-supply contract" with a blood center. With this approach, the blood center will regularly deliver blood products needed to each hospital for storage so that blood is ready for transfusion at any time. Meanwhile, each blood center has established a list of blood donors filed by red blood cell antigen. If a blood usage emergency occurs, the center will contact blood donors for immediate support.

The blood supplies of each blood center are available to hospitals 24 hours/day.

The quantity of stored blood in each blood center needs to be maintained at more than seven days for safety concerns. Four to seven days of storage are a bit lower, while less than four days of storage is considered dangerous. There is a safe storage quantity signal display set up on the official website of Taiwan Blood Services Foundation so that people can check the latest information of each blood donation center.

Each kind of final blood product to be dispatched to hospitals will be checked by computer one by one to ensure safety.

Based on the needs of each hospital, final products are put into boxes with clear labels for blood-type and blood item name.

They are put in specific transportation vehicles according to the temperature requirement of the blood item with temperature-monitored equipment and are ready to be delivered to each hospital.

Each packaged box of blood items will be put into a dedicated incubator bags.

In line with the health policy of "National blood used by the nation", our Foundation started to collect source plasma in January 2007 to ease the difficult situation of a lack of blood plasma derivatives in Taiwan. The collected blood plasma's original material is delivered by batch to the CSL plasma fractionation factory in Australia to be further processed into blood plasma derivatives. Three blood plasma derivatives of the TBSF are made: 20% Human albumin for Intravenous Use, Human Immunoglobulin for Intravenous Use, and 250IU Blood Coagulation Factor VIII Concentrate.

Research

To improve blood quality and safety, we continue our research programs. All studies have been reviewed by IRB (Institutional Review Board). Our research is primarily published in peer-reviewed journals. We conducted a surveillance study of SARS-COV-2 and its antibody among blood donors after a nosocomial infection in Taiwan, and an evaluation of red cell phenotypes testing using an automated analyzer and commercial kits, these reports were published in AABB or ISBT congress meeting.

Blood transfusion safety

To assist the hospitals in seeking possible causes of blood transfusion adverse reactions, we have established Taiwan Haemovigilance System with Taiwan Society of Blood Transfusion since 2016, which five hospitals (namely National Taiwan University Hospital, Taipei Veterans General Hospital, Far Eastern Memorial Hospital, Linkou Chang Gung Memorial Hospital, and Tri-Service General Hospital) have taken the lead in demonstrating how to send notifications since 2017. In the year of 2022, 70 hospitals have been qualified for notification. It is expected that after the system is gradually expanded to all the hospitals in Taiwan, we will be able to collect and analyze blood data from patients, provide better blood transfusion strategies to solve those issues related to blood donation and transfusion, and help to improve blood transfusion safety. On the

"Precise and Practical Blood Transfusion Handbook"

other hand, we have re-written the “Handbook of Blood Component Therapy”. Adding the concept of PBM (Patient Blood Management). We published brand new “Handbook of Precise and Practical Blood Transfusion” which has been distributed to hospitals since June, 2020. Due to the continuous advancement of medical technology, we believe it is necessary to revise it. We convened the original editors and a review team to re-examine the content in 2021. We officially published the second edition of "Precise and Practical Blood Transfusion Handbook" in May 2022. The content of this guideline is mainly based on indications, supplemented by evidence-based medicine, and provides doctors with a more comprehensive blood transfusion model. We look forward those patients who really need blood therapy could be transfused with various blood components more accurately and effectively, and at the same time achieve the goal of preventing adverse blood transfusion reactions and effectively reducing medical costs, so that the quality of blood transfusion for patients is safer and better. Further, to reduce the risk of transfusion-related acute lung injury (TRALI), the policy of supplying male-donor-predominant plasma has been implemented since July 11th, 2015. Female blood donors for apheresis donation must pass the leukocyte antibody screening, which has led to the reduction in donations of antibody-positive blood. Therefore, more protection is provided for our blood supply.

BMS, blood information management system

The blood donation and supply information management system that was used since 1999, until 2011 the hardware and software were gradually inadequate. All its software and hardware were no longer able to carry and calculate millions of pieces of data. In the face of the leap forward in digital technology and the need to update many functional requirements. Therefore, it is imperative to upgrade the information system. Realizing that the package system may not be suitable for Taiwan, decided to customize it in 2015, re-evaluated its user requirements, network architecture, programming language, and database.

Adopt a cloud website, develop an ubiquitous, intelligent and paperless system, and integrate big data from each blood donation center.

The "Blood Management Information System" enabled in 2018, Undergoing the process of system analysis, program writing, unit testing, integration testing, user acceptance testing, data conversion, parallel testing, environmental construction, and education and training.

BMS with two major features:

Ubiquitous: Let the blood donation cart be able to do blood donation wherever there is a mobile network. The "Blood Donor Area" can download test reports, blood donation records, and make appointments for blood donation. The

"Hospital Network Operating Platform" provides online order blood and EDI (Electronic Data Interchange) download.

Intelligence: Automatically review blood donation and blood product eligibility. The establishment of a quarantine code mechanism can set multiple controls and quarantine on blood donors and blood products, and comprehensively control the safety of blood products. The special blood product intelligence matching function improves the quality and efficiency.

TBSF has not only overcome the overwhelming challenge in transferring the information on blood donors that has been accumulated for more than 40 years to the new system, but has also incorporated the databases originally scattered in the blood donation centers across the country into the era of cloud synchronization and virtual and real integration. In the part of the blood donation process, the TBSF has used the cross-platform APPs in the cloud technology to import by a single click the blood donor's data into the database, making the work and service processes even more rigorous and smoother. All high-end information devices are placed in the professional IDC (Internet Data Center) computer rooms, so as to synchronize remote backup and improve system stability and availability.

The biggest change for blood donors is the electronization of the process and the simultaneous uploading of the blood donor data to the database. Blood donors can complete the registration and health questionnaire on a tablet, and confirm their personal information with a digital signature. As this data collection process is digitized and can be carried out online in advance.

This paperless movement is not only more environmentally friendly but also more convenient in that a blood donor can either insert his or her health insurance card or read the barcode on his or her ID card to get his or her name and other personal information, accelerating the data display time and replacing the manual operation with automation for double certification to greatly reduce human errors. It is particularly worth mentioning that the health questionnaire is designed to be more rigorous. This is to strengthen blood safety management by linking a donor's reply to each question in the front-end health questionnaire to each of the blood products and the control code of donors in the blood management information system.

If any condition that makes someone unsuitable for blood donation is triggered, the system will automatically flag the donor and trace back all their previous blood products, based on the system's preset conditions, forming a completely monitored protection network in the blood safety management.

In order to shorten the waiting time for the blood donors, the Blood Management Information System provides an appointment service for making blood donations. Those who donate whole blood can make appointments in advance within one month, and the system will take the initiative to remind the donors by

email 2 days before the appointment date. Those who donate blood by apheresis can make 2 appointments within a month, but if your blood donation conditions are not met, the system will suspend your appointment for blood donation.

In the "Blood Donor Area" system, you can check the previous blood donation records, the next donation date, the records of praise and recognition, and even download the blood donation certificate online. All of these operations can be done not only on a personal computer, but also on your mobile phone or tablet.

The processes and services before and after blood donation are more convenient, and closer to the donors, making blood donation a convenient and simple good thing! For the hospitals, we have also constructed a "hospital network operation platform" on the system. Not only can the hospital blood bank directly subscribe to various required blood products through the platform, but it can also answer in the system such information as blood uses, blood transfusion investigation, blood consultation application, etc. This horizontal integration of the hospital's blood and blood supply operations improves the response efficiency, making the two-way management of blood products more rapidly and more reliably. It not only provides better and more efficient services for the hospitals, but also improves the blood quality for medical uses.

BMS certified by Symbol of National Quality (SNQ) with “Comprehensive Blood Quality Control - The Unique Blood Management System with Ubiquitous Intelligence in Taiwan”. In addition, awarded the Bronze of 2021 National Biotechnology and Medical Care Quality Award in the Public Services, Medical Supplies and Services Category.

Information security issue is never ending

TBSF officially has an ISO 27001 certification in Feb 2022. ISO 27001 is an international standard for Information Security management. It provides a model to establish, implement, maintain and continually improve a risk-managed Information Security Management System (ISMS).

We build the information security system on the Gateway of the TBSF main office and the end points of each of the TBSF Blood Centers so as to strengthen information security and meet the requirements of the regulations. To ensure the security of the TBSF computer information system, we need not only to continuously update the antivirus software, but also to establish the gateway to enhance the filtering of malware and viruses from the email and URL system. When the system judges an attachment of an email to be malicious software, the email attachment will be deleted automatically by the system. We conduct information asset risk assessments on information equipment and materials every year and control the possible risk levels to a low risk range. Outsourcing Security Operation Center (SOC) to continuously monitor and improve security posture while preventing, detecting, analyzing, and responding to cybersecurity incidents.

The enhancement of information security requires a high degree of cooperation from all

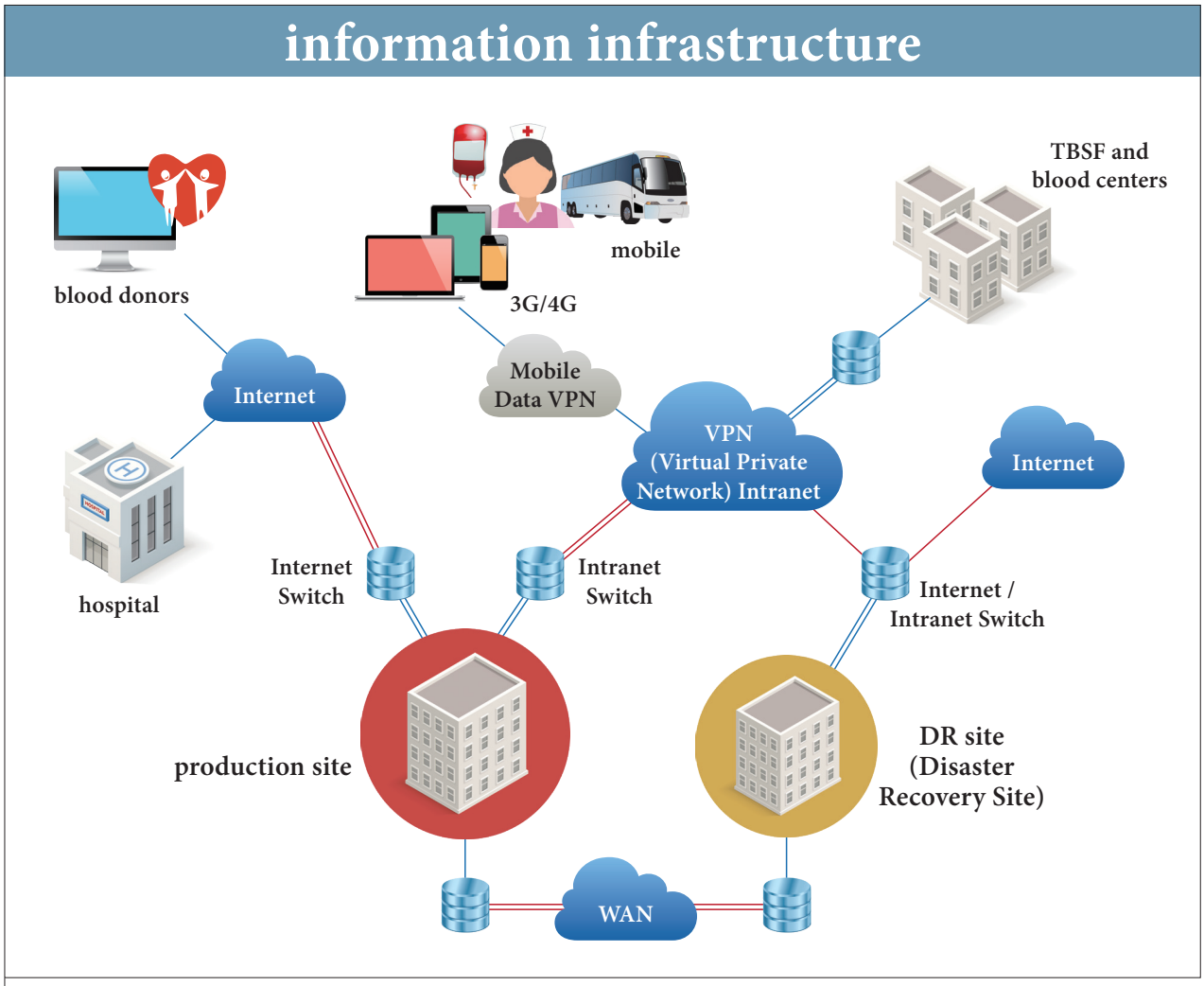


Illustration: The blood donation and supply system is supported by our Foundation's information infrastructure. With high-speed network connections, donor information can be verified quickly and accurately at each donation site.

our colleagues. As everyone must have a correct concept, we hold annual all-round education and training to give lectures and conduct assessments and continue to deepen the publicity of security issues, so that our colleagues can collect, handle and utilize personal information according to relevant laws, administrative orders or internal norms.

Practice of Social Responsibility and Sustainable Development

In 2015, the United Nations proposed 17 Sustainable Development Goals (SDGs) as a guideline for countries to promote sustainable development before 2030 and to address the issues and challenges faced by mankind. Although TBSF is a medical institution, we still must do our best for sustainability. This year, we continue to send staffs to participate in the "ESG Report-GRI" and "Corporate Energy Conservation and Carbon Reduction and ESG" courses to strengthen the relevant knowledge of our colleagues.

TBSF has since 2022 officially launched its First Year of Corporate Sustainability and set up its Sustainable Development Promotion Committee, with Chairman Hou serving as its chairman, CEO as its executive member, and the heads of various departments and centers as committee members. They plan, implement and supervise the strategies and actions related to corporate sustainability for our Foundation and four blood centers, so as to gradually accomplish the sustainability goals.

Aiming to provide the most comprehensive services to blood donors and recipients, ensure a secure supply of medical blood, and communicate with stakeholders, TBSF has completed its first 'Taiwan Blood Services Foundation 2021 Sustainability Report'. This report has won the Silver Award in category 2 NGO group of the 'Taiwan Corporate Sustainability Awards' organized by the Taiwan Institute for Sustainable Energy. TBSF is the highest-level award-winning organization in this group this year.

TBSF won the Silver Award in category 2 NGO group of the 'Taiwan Corporate Sustainability Awards'

Reward records

2022

TBSF, corporate sustainability report won the Silver Award in NGO group of the 'Taiwan Corporate Sustainability Awards'

The certification of SNQ (Symbol of National Quality) The Theme: " Detection of extended red-cell antigens to support pretransfusion blood matching, a milestone in precision transfusion medicine. "


SNQ 國家品質標章證書
Certificate of the Symbol of National Quality
台灣血液基金會
廣泛性血型抗原之測試與配對 精準輸血醫學之里程碑
認證效期：至 2023 年 12 月 31 日止
This is to certify that
Detection of extended red-cell antigens to support pretransfusion blood matching, a milestone in precision transfusion medicine
by
Taiwan blood services foundation
has been awarded the Symbol of National Quality.
Category: Public & Community Services
This certificate is valid until December 31st, 2023

Quality assurance

1999

Approval of the Medicines Control Agency (MCA, UK) to meet their standards of the blood quality.

2001

Implementation of the ISO 9001 quality system.


SGS

TAIWAN BLOOD SERVICES FOUNDATION

ISO 9001:2015

2006

Approval of the Therapeutic Goods Administration (TGA, Australia) to meet their standards of the blood quality.

2010

The testing laboratories accredited by the Taiwan CDC for syphilis, HIV and HCV.

2012

ISO 15189 laboratory accreditation.

2012

GMP manufacturing facilities licensed by the Taiwan Food and Drug Administration (TFDA).

2018

GDP Distribution facilities licensed by the TFDA.

2021

Implementation of the ISO27001 quality system.

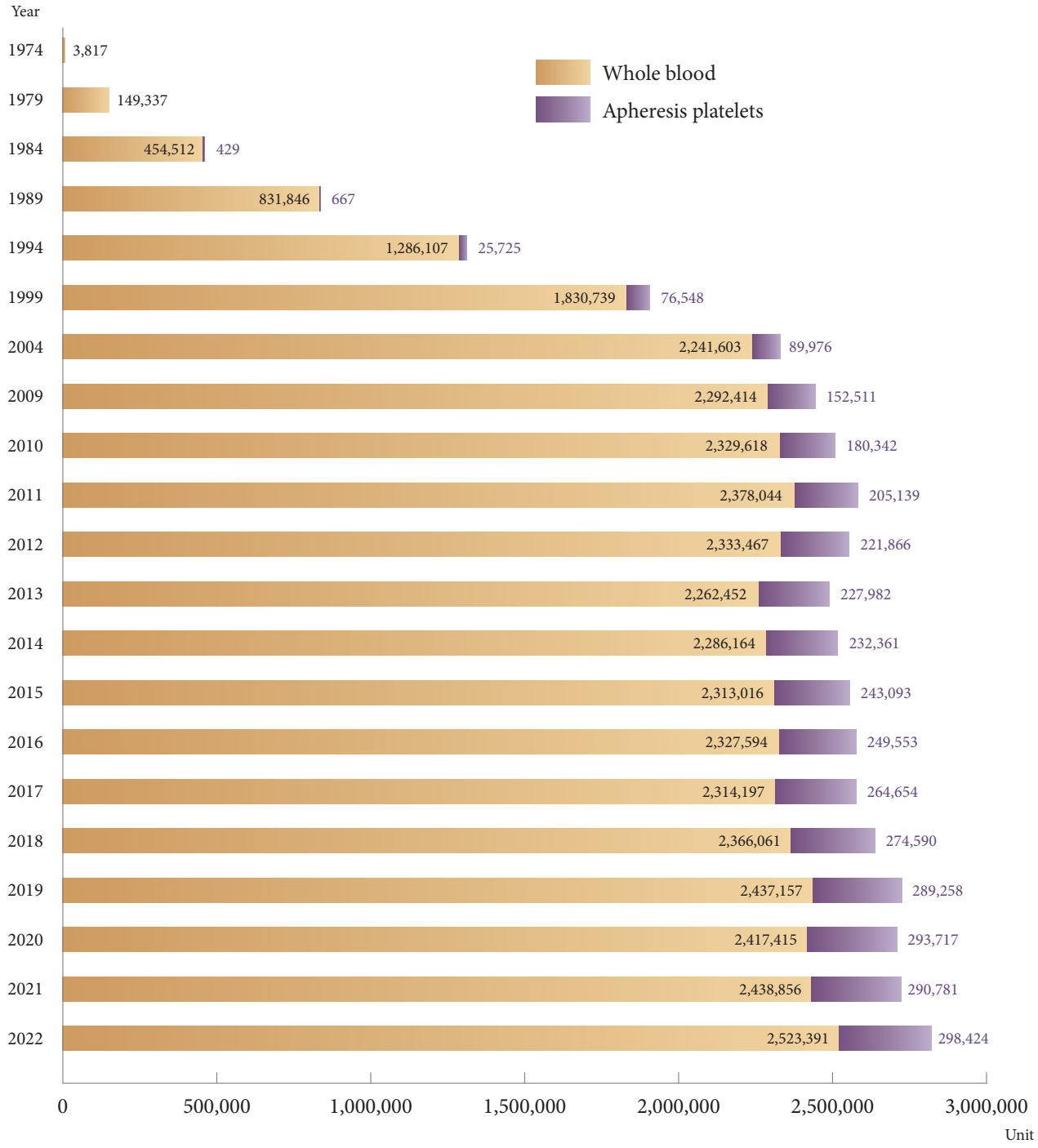

SGS

TAIWAN BLOOD SERVICES FOUNDATION

ISO/IEC 27001: 2013

STATISTICS

Annual blood collection, 1974-2022



Note: 1. 250ml per unit for whole blood and 500ml counts for 2 units.

2. Single adult dose per unit for apheresis platelet and double dose counts for 2 units.

Annual blood collection by blood centers, 1974-2022

Unit

Year \ Blood centers	Taipei blood center	Hsinchu blood center	Taichung blood center	Tainan blood center	高雄捐血中心 Kaohsiung	Hualien blood center	Total
1974	3,817	-	-	-	-	-	3,817
1979	92,730	-	24,723	-	31,884	-	149,337
1984	187,362	-	101,219	60,123	106,237	-	454,941
1989	312,578	-	231,199	119,179	169,557	-	832,513
1994	406,604	161,765	252,889	173,297	252,897	64,380	1,311,832
1999	553,940	266,497	378,516	257,309	360,060	90,965	1,907,287
2004	642,945	333,898	489,079	321,441	437,362	106,854	2,331,579
2009	718,841	326,619	487,230	382,251	420,616	109,368	2,444,925
2010	738,274	343,531	500,298	389,938	423,333	114,586	2,509,960
2011	753,611	347,807	507,104	405,553	453,274	115,834	2,583,183
2012	752,304	343,225	504,362	405,409	434,767	115,266	2,555,333
2013	737,642	336,853	487,170	401,442	414,876	112,451	2,490,434
2014	743,926	337,408	485,767	409,314	431,181	110,929	2,518,525
2015	744,106	355,943	498,956	418,909	423,721	114,474	2,556,109
2016	771,779	364,244	507,973	421,457	447,145	64,549	2,577,147
2017	841,241	360,146	520,231	420,428	436,805	-	2,578,851
2018	869,019	373,358	536,306	424,617	437,351	-	2,640,651
2019	894,031	393,568	551,889	426,291	460,636	-	2,726,415
2020	896,115	387,625	620,102	362,506	444,784	-	2,711,132
2021	860,089	391,556	643,307	375,515	459,170	-	2,729,637
2022	888,189	414,233	665,895	378,916	474,582	-	2,821,815

Note: 1. Total blood collection units: calculated by both whole blood and apheresis collection.

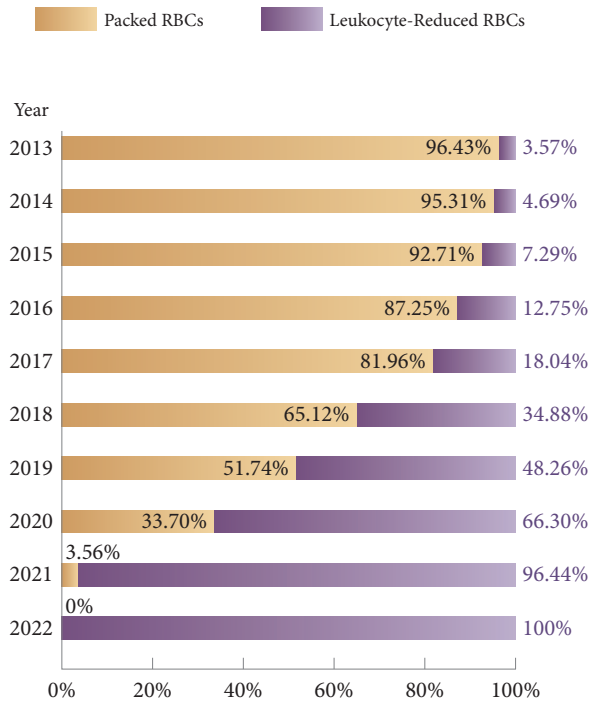
2. 250ml per unit for whole blood and 500ml counts for 2 units.

3. Single adult dose per unit for apheresis platelet and double dose counts for 2 units.

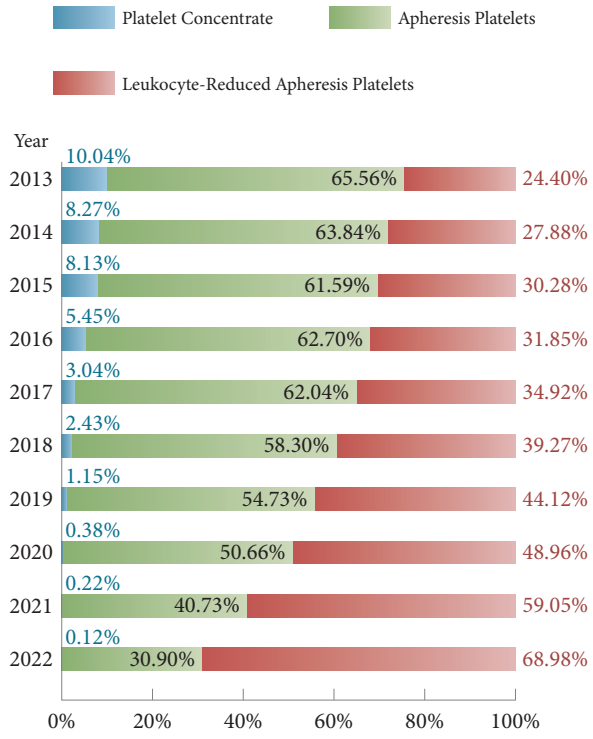
Annual blood supply, 2013-2022

Unit

Red blood cell products

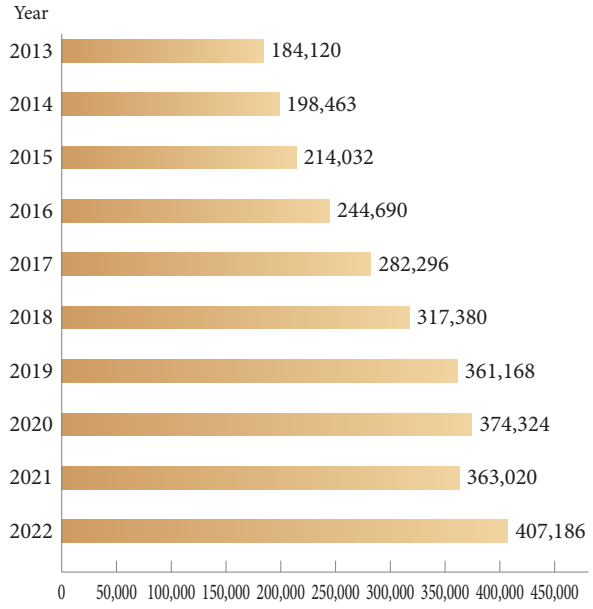


Platelet products



Plasma products

Cryoprecipitate



Note: 1. 250ml per unit for whole blood and 500ml counts for 2 units.

2. Single adult dose per unit for apheresis platelet and double dose counts for 2 units.

3. Platelet concentrate per dose for adults 12 units.

Blood and blood components issued in 2022

Unit

1. Whole blood

Blood \ Blood centers		Taipei blood center	Hsinchu blood center	Taichung blood center	Tainan blood center	Kaohsiung blood center	Total
RBCs	Whole blood	7,603	4,751	1,503	1,785	835	16,477
	Washed RBCs	7,716	1,671	3,673	4,282	4,953	22,295
	Leukocyte-reduced RBCs	740,750	361,422	589,138	323,470	416,750	2,431,530
	Frozen thawed deglycerolized RBCs	6	0	0	0	2	8
Subtotal		756,075	367,844	594,314	329,537	422,540	2,470,310
Plasma	Fresh frozen plasma	318,512	163,509	244,184	137,474	142,012	1,005,691
	Frozen plasma	44,085	26,163	41,835	25,859	44,057	181,999
Cryoprecipitate		155,746	50,482	99,810	60,516	40,632	407,186
Platelets	Platelet concentrate	522	2,598	1,348	0	0	4,468
WBCs	WBC concentrate	9,646	238	80	0	0	9,964
Total units issued		1,284,586	610,834	981,571	553,386	649,241	4,079,618
Rate of components		99.41	99.22	99.85	99.68	99.87	99.60
Rate of whole blood		1.01	1.29	0.25	0.54	0.20	0.67
PR ratio		47.96	51.56	48.13	49.56	44.04	48.08

2. Apheresis

Unit

Blood \ Blood centers	Taipei blood center	Hsinchu blood center	Taichung blood center	Tainan blood center	Kaohsiung blood center	Total
Apheresis platelets	36,264	8,295	17,388	14,716	14,658	91,321
Leukocyte-reduced apheresis platelets	74,572	27,769	46,867	21,200	33,481	203,889
Total	110,836	36,064	64,255	35,916	48,139	295,210

Note: 1. 250ml per unit for whole blood and 500ml counts for 2 units.

2. Single adult dose per unit for apheresis platelet and double dose counts for 2 units.

3. The plasma numbers issued are for medical usage only,plasma for fractionation not included.

4. PR ratio=Plasma/RBCs

Whole blood collection per 1000 head of population, 2013-2022

Liter / 1,000 population

Blood centers / Year	Taipei blood center	Hsinchu blood center	Taichung blood center	Tainan blood center	Kaohsiung blood center	Hualien blood center	Total
2013	22.90	22.03	25.09	27.03	25.08	24.90	24.23
2014	22.97	21.81	24.94	27.71	26.14	24.58	24.43
2015	22.90	22.63	25.33	28.32	25.64	25.33	24.65
2016	22.97	22.57	25.52	28.63	25.69	24.73	24.73
2017	23.18	21.99	25.85	28.28	25.13	-	24.56
2018	24.01	22.48	26.60	28.63	24.97	-	25.09
2019	24.63	23.37	27.31	28.64	26.51	-	25.83
2020	24.67	22.96	26.58	30.49	25.59	-	25.63
2021	23.78	23.10	27.69	32.15	26.68	-	25.96
2022	25.18	24.62	28.93	32.76	27.77	-	27.21

Note: 1. Mid-year population, data from the ministry of interior.
2. Both whole blood and apheresis donations are included.

Donation rate by blood centers, 2013-2022

Donation rate

Blood centers / Year	Taipei blood center	Hsinchu blood center	Taichung blood center	Tainan blood center	Kaohsiung blood center	Hualien blood center	Total
2013	7.21%	6.80%	7.80%	8.68%	7.47%	7.85%	7.54%
2014	7.12%	6.70%	7.64%	8.71%	7.72%	7.55%	7.50%
2015	7.09%	6.94%	7.71%	8.77%	7.59%	7.73%	7.54%
2016	7.10%	6.86%	7.67%	8.73%	7.53%	7.42%	7.49%
2017	7.15%	6.70%	7.80%	8.58%	7.33%	-	7.44%
2018	7.41%	6.84%	7.89%	8.45%	7.34%	-	7.55%
2019	7.64%	7.11%	8.00%	8.55%	7.74%	-	7.77%
2020	7.65%	6.91%	7.74%	9.11%	7.46%	-	7.68%
2021	7.39%	6.93%	8.06%	9.50%	7.76%	-	7.76%
2022	7.76%	7.30%	8.36%	9.65%	8.08%	-	8.08%

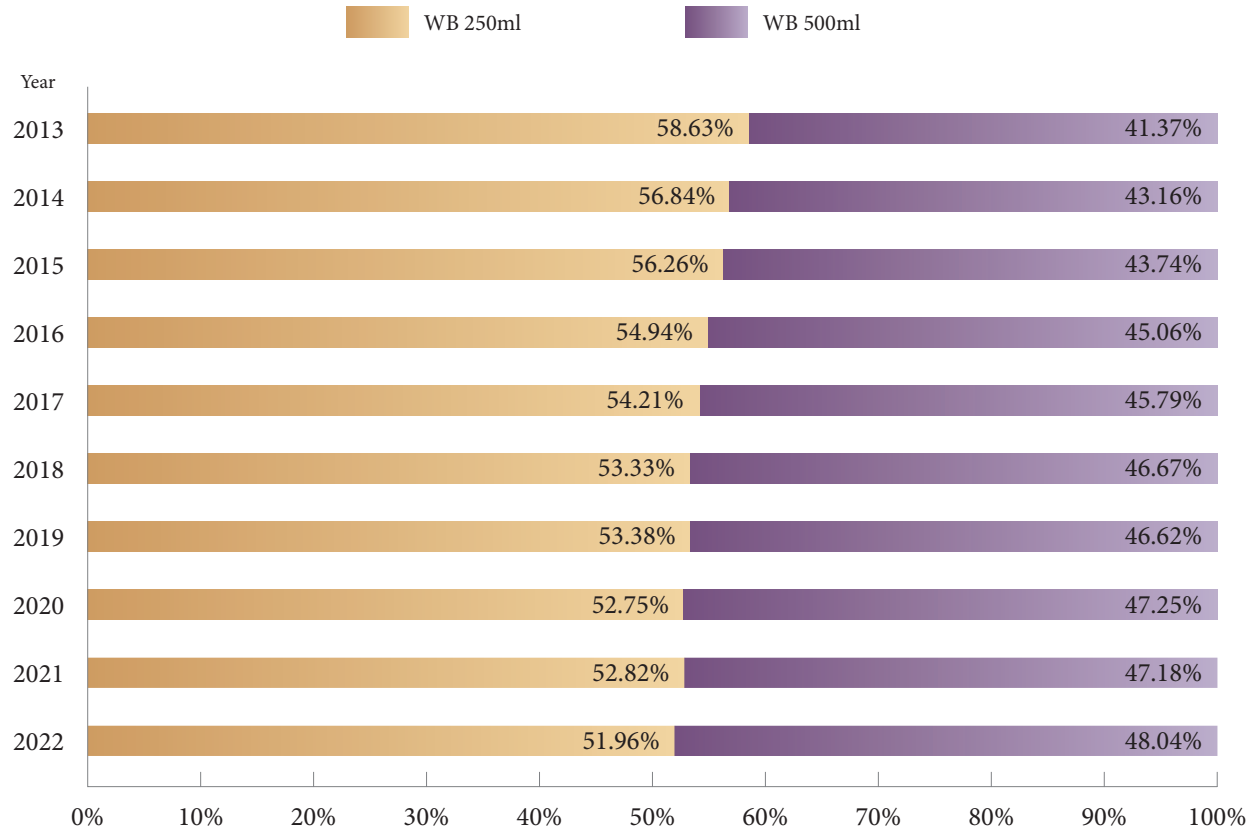
Note: 1. Mid-year population, data from the ministry of interior.
2. Both whole blood and apheresis donations are included.

Types of blood donation in 2022

Donation

Type / Blood centers	Whole blood				Apheresis				Total
	250ml	%	500ml	%	Apheresis - 1U	%	Apheresis - 2U	%	
Taipei blood center	281,412	46.99	248,072	41.42	28,265	4.72	41,184	6.88	598,933
Hsinchu blood center	136,232	48.77	120,280	43.06	8,261	2.96	14,590	5.22	279,363
Taichung blood center	200,456	46.16	200,286	46.12	2,193	0.50	31,337	7.22	434,272
Tainan blood center	120,853	48.11	110,172	43.86	2,625	1.04	17,547	6.99	251,197
Kaohsiung blood center	146,648	47.21	140,085	45.10	0	0	23,882	7.69	310,615
Subtotal	885,601	47.25	818,895	43.69	41,344	2.21	128,540	6.86	1,874,380

Types of whole blood donation, 2013-2022



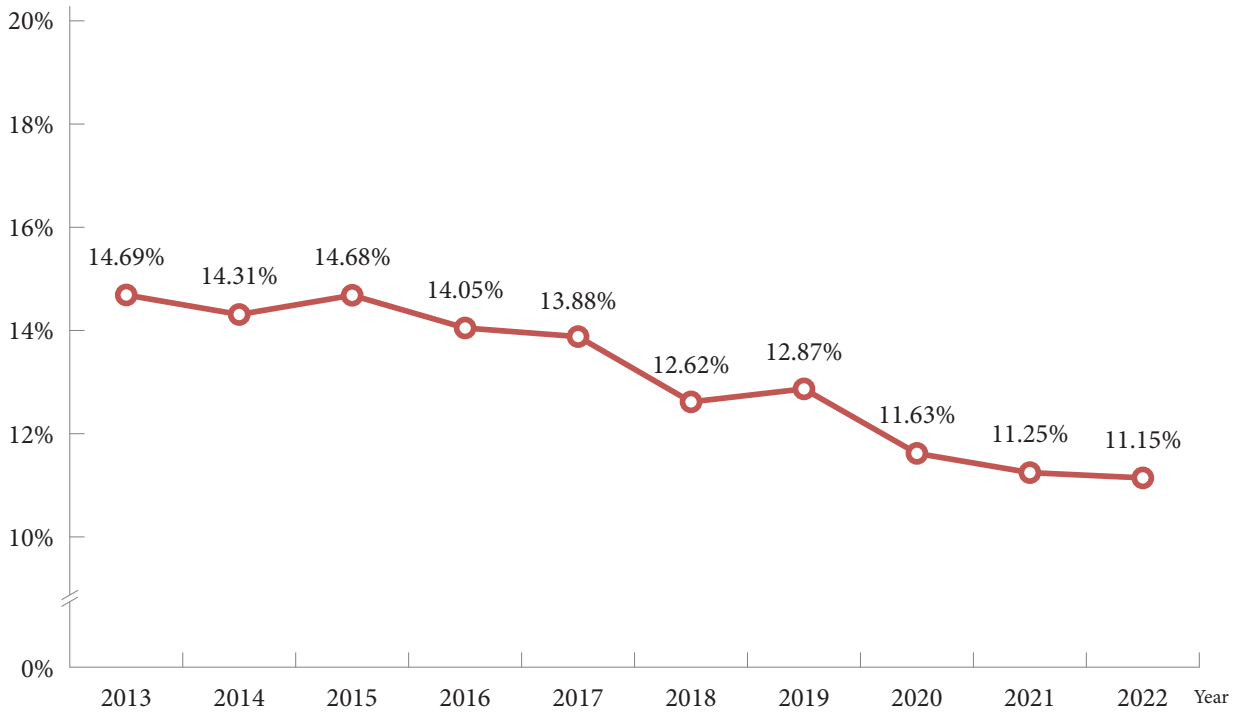
First-time Donors in 2022

Donor

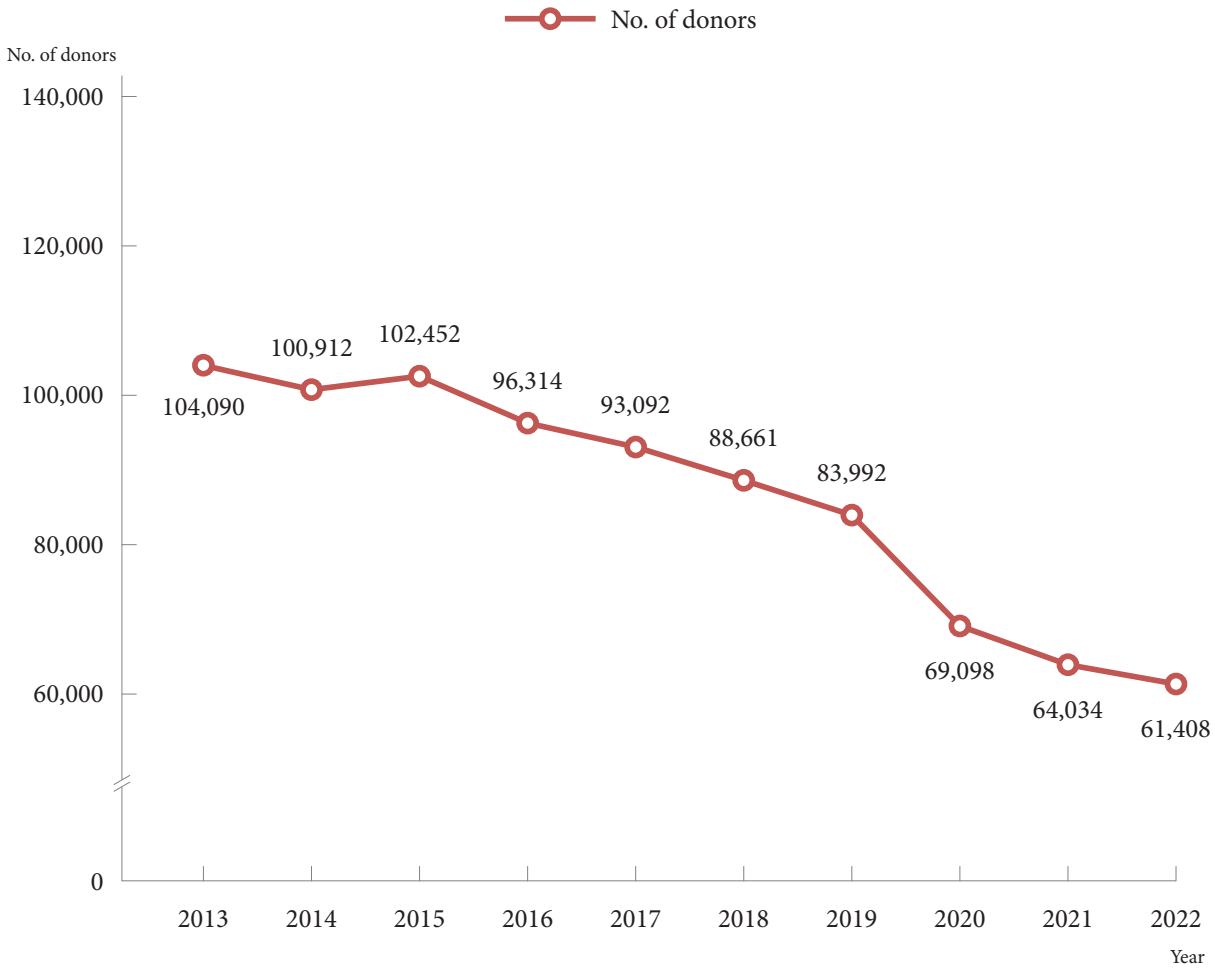
Item \ Blood centers		Taipei blood center	Hsinchu blood center	Taichung blood center	Tainan blood center	Kaohsiung blood center	Total
Total donors(A)		340,325	162,958	255,731	138,739	173,481	1,038,525
First-time donors	No.(B)	38,207	17,702	25,914	14,971	18,982	115,776
	%(B/A)	11.23%	10.86%	10.13%	10.79%	10.94%	11.15%
First-time donors Age≦24	No.(C)	18,460	8,199	13,695	9,673	11,381	61,408
	%(C/B)	48.32%	46.32%	52.85%	64.61%	59.96%	53.04%

Note: Donors who donated on more than one occasion in this year would be counted as once.

Rates of first-time donors, 2013-2022



Age ≤24 first-time donors, 2013-2022



Distribution of donor by gender and age in 2022

Donor

Gender \ Age	≤20	21~30	31~40	41~50	51~65	>65	Total [3]
Male	34,639 (5.79%)	119,663 (20.01%)	158,792 (26.55%)	159,091 (26.60%)	138,064 (23.08%)	1,478 (0.25%)	598,104 (57.59%)
Female	40,235 (9.14%)	99,884 (22.68%)	106,106 (24.09%)	98,957 (22.47%)	102,366 (23.24%)	845 (0.19%)	440,429 (42.41%)
Total	74,874 (7.21%)	219,547 (21.14%)	264,898 (25.51%)	258,048 (24.85%)	240,430 (23.15%)	2,323 (0.22%)	1,038,525 (100.00%)

Note: 1. Donors who donated on more than one occasion in this year would be counted as once.

2. Age refers to the actual age on the day of blood donation, and donations made by the same person at different age groups are included in the calculation.

3. Total count refers to the sum of the number of blood donors within the current year.

Donation frequency by gender and age in 2022

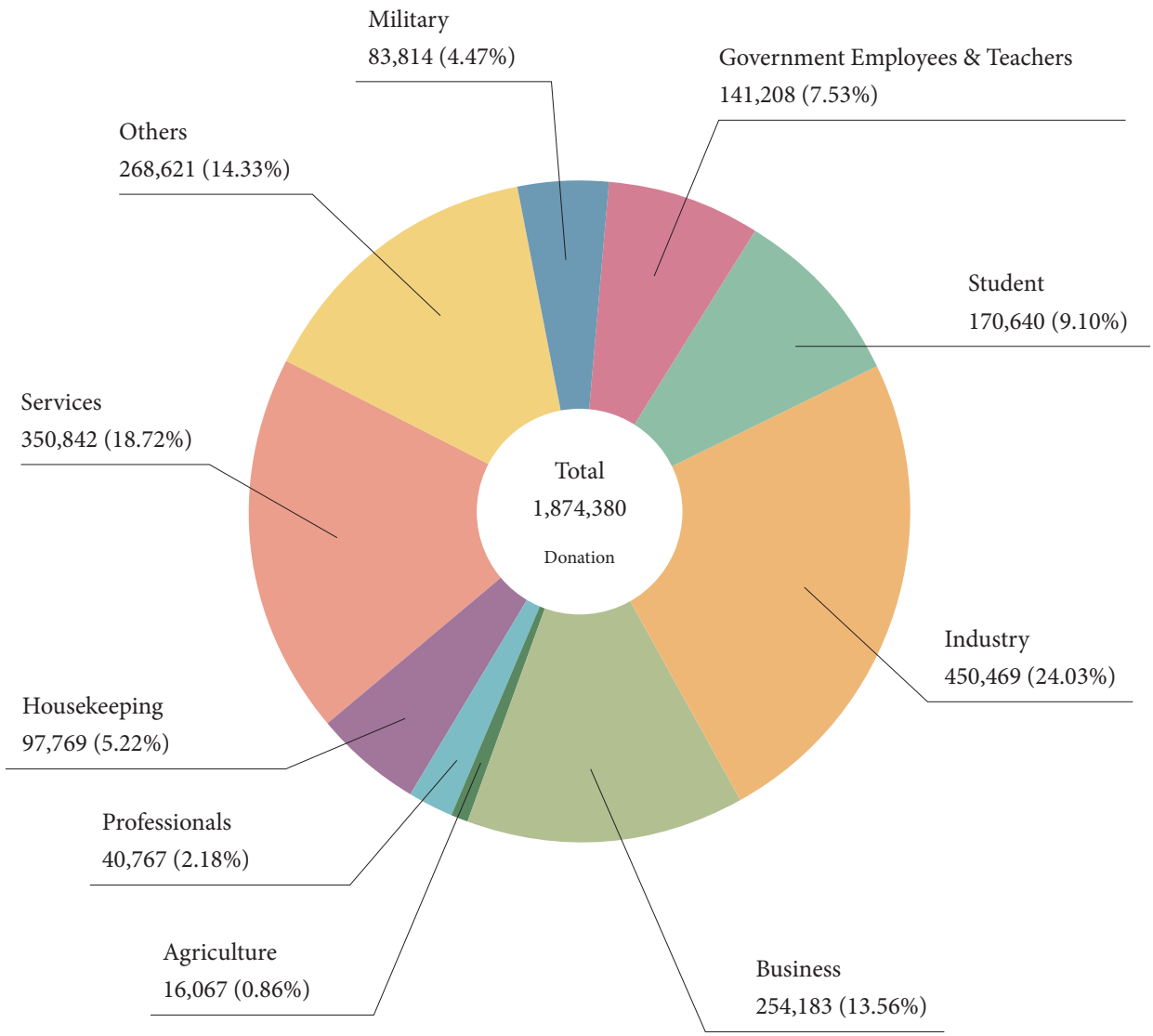
Age / Gender		Donation frequence	
≤20	Male	1.29	1.33
	Female	1.36	
21-30	Male	1.54	1.51
	Female	1.48	
31-40	Male	1.82	1.71
	Female	1.54	
41-50	Male	2.06	1.90
	Female	1.64	
51-65	Male	2.23	2.05
	Female	1.82	
>65	Male	3.22	2.85
	Female	2.20	
Total	Male	1.94	1.80
	Female	1.63	

Blood collection by sites in 2022

Donation

Blood centers / Sites	Taipei blood center	Hsinchu blood center	Taichung blood center	Tainan blood center	Kaohsiung blood center	Total
Fixed site	329,577	138,985	216,099	137,833	167,576	990,070
	55.03%	49.75%	49.76%	54.87%	53.95%	52.82%
Mobiles	269,356	140,378	218,173	113,364	143,039	884,310
	44.97%	50.25%	50.24%	45.13%	46.05%	47.18%
Total	598,933	279,363	434,272	251,197	310,615	1,874,380

Occupational distribution of donors in 2022



Pre-donation deferral in 2022

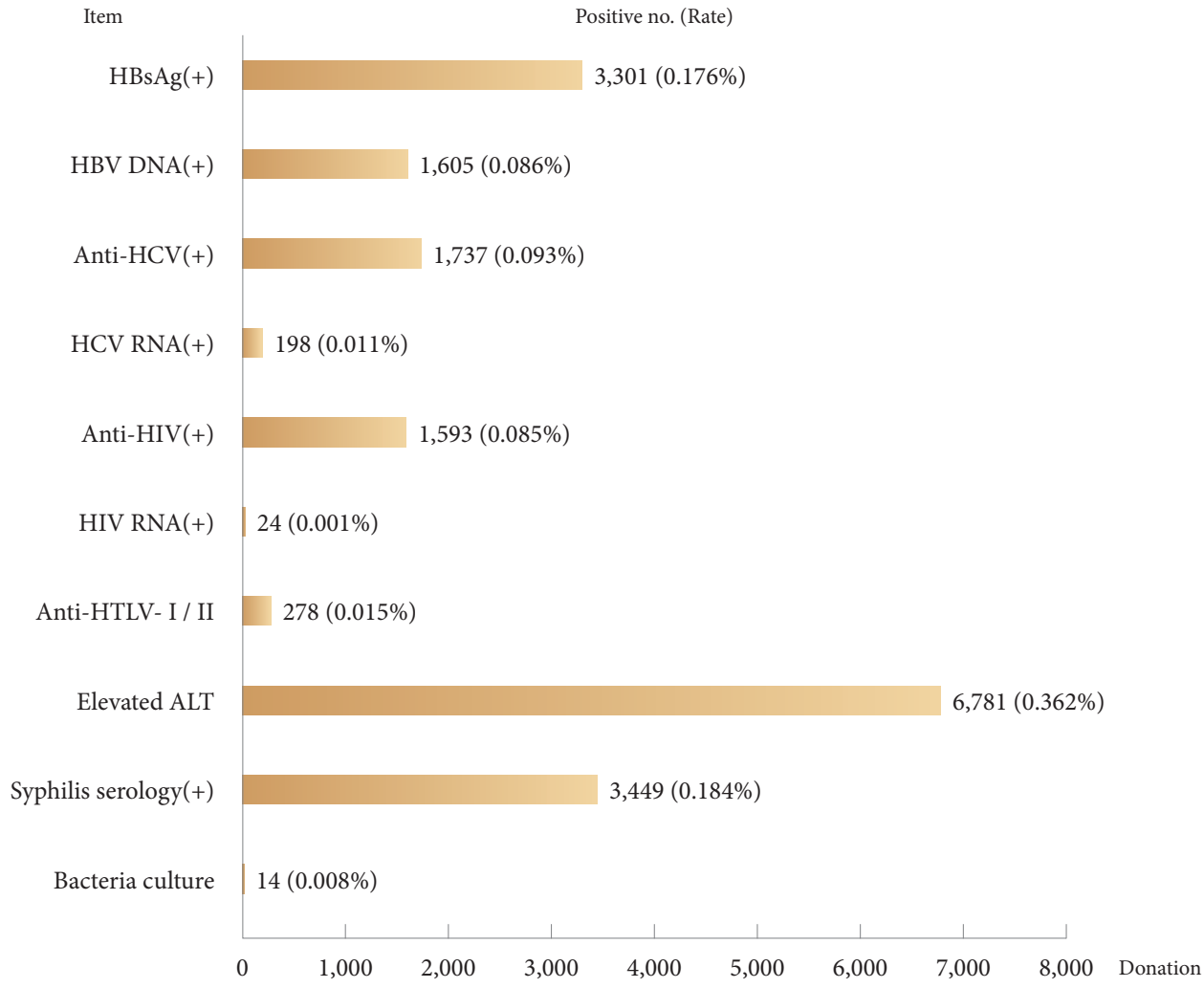
Participants

Reasons of deferral \ Blood centers		Taipei blood center	Hsinchu blood center	Taichung blood center	Tainan blood center	Kaohsiung blood center	Total
1	Low hemoglobin	37,385	6,699	27,486	12,511	22,627	106,708
2	Health questionnaire defferal	29,532	8,536	15,203	11,327	7,911	72,509
3	Blood pressure too high or too low	4,992	2,847	3,526	645	1,374	13,384
4	Blood vessels too thin	630	194	743	568	86	2,221
5	Low body weigh	538	203	156	313	185	1,395
6	Platelet count less than 150,000/μl or more than 600,000/μl	540	69	354	207	120	1,290
7	Tension	70	25	103	61	29	288
8	Body temperature too high	71	137	27	12	32	279
9	Other abnormalities	7,733	2,291	2,768	1,063	3,443	17,298
Total deferral		81,491	21,001	50,366	26,707	35,807	215,372
Total participants		680,424	300,364	484,638	277,904	346,422	2,089,752
%		11.98%	6.99%	10.39%	9.61%	10.34%	10.31%

Note: Total participants include deferred participants and successful donations.

Positive rate of blood screening in 2022

Total positive rate：0.94%



Note: Only platelet apheresis donations were tested for bacteria culture.

Inventory of rare RBCs

Blood groups		Unit
Rare blood groups	ABO blood groups	
para-Bombay	A	8
	O	13
	AB	2
RzRz	A	4
	B	6
	O	26
	AB	2
s(-)	O	24
Lu(a-b-)	A	26
	O	10
K_0	A	10
Fy(a-)	A	8
	B	2
	O	25
Fy(a-)s(-)	O	14
Fy(a-b+)Jk(a-b-)	A	2
D(-)Fy(a-b-)	O	2
Jk(a-b-)	A	44
	B	40
	O	52
	AB	2
Di(b-)	A	4
	O	12
i adult cell	A	2
	B	1
	O	3
Jr(a-)	O	4
p phenotype	A	4
	B	1
	O	1
Lan(-)	AB	3
Dc-	O	8
D--	A	6
JENU-	O	3

Human resources in 2022

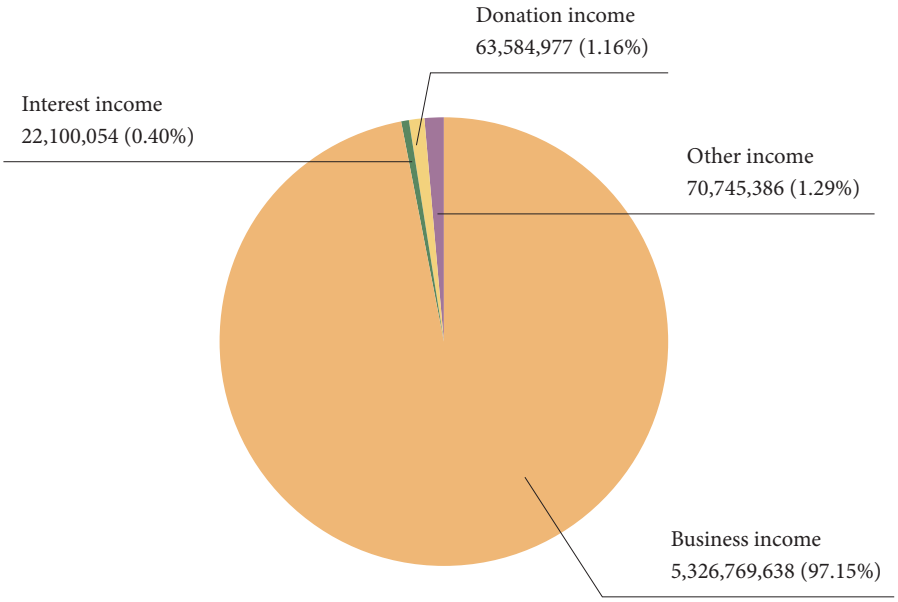
Person

Classification / Blood centers	Physician	Technician and researcher	Nursing staff	Administrative staff	Temporary	Total	%
Head Office	1	14	0	30	0	45	3.70
Taipei blood center	10	153	156	99	20	438	36.05
Hsinchu blood center	3	55	55	43	1	157	12.92
Taichung blood center	3	71	89	51	7	221	18.19
Tainan blood center	4	43	49	36	13	145	11.94
Kaohsiung blood center	5	81	66	45	12	209	17.20
Total	26	417	415	304	53	1,215	

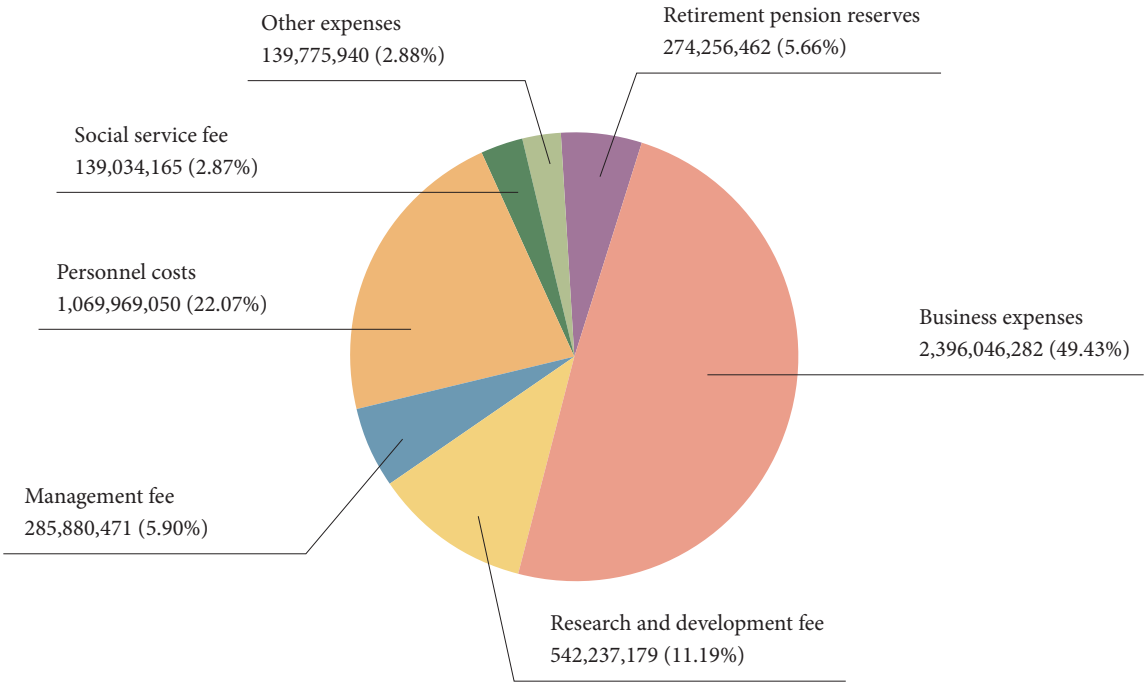
Incomes and expenditures in 2022

NT Dollar

1. Total incomes: NT$ 5,483,200,055



2. Total expenditures: NT$ 4,847,199,549



3. Balance after tax: NT$ 636,000,506

4. Capital expenditures: NT$ 191,722,245 (Equipments purchase)

APPENDIX

Locations

Head office

Taiwan Blood Services Foundation

3 FL. No. 3, Nan-Hai Road, Taipei 10066, Taiwan, R.O.C.
TEL: 886-2-2351-1600 FAX: 886-2-2395-1002
Website: www.blood.org.tw

Blood Centers

Taipei Blood Center

No. 123, Lih-Der Road, Taipei 112, Taiwan, R.O.C.
TEL: 886-2-2897-1600 FAX: 886-2-2897-1601
Website: www.tp.blood.org.tw
Service area: Taipei City, New Taipei City, Keelung City, Kinmen County, Matsu County, Hualien County, Yilan County.

Hsinchu Blood Center

No. 8, Lane 215, Guangming 11th Road, Jhubie City, Hsinchu County 302, Taiwan, R.O.C.
TEL: 886-3-555-6111 FAX: 886-3-555-0305
Website: www.sc.blood.org.tw
Service area: Taoyuan County, Hsinchu City & County, Miaoli County

Taichung Blood Center

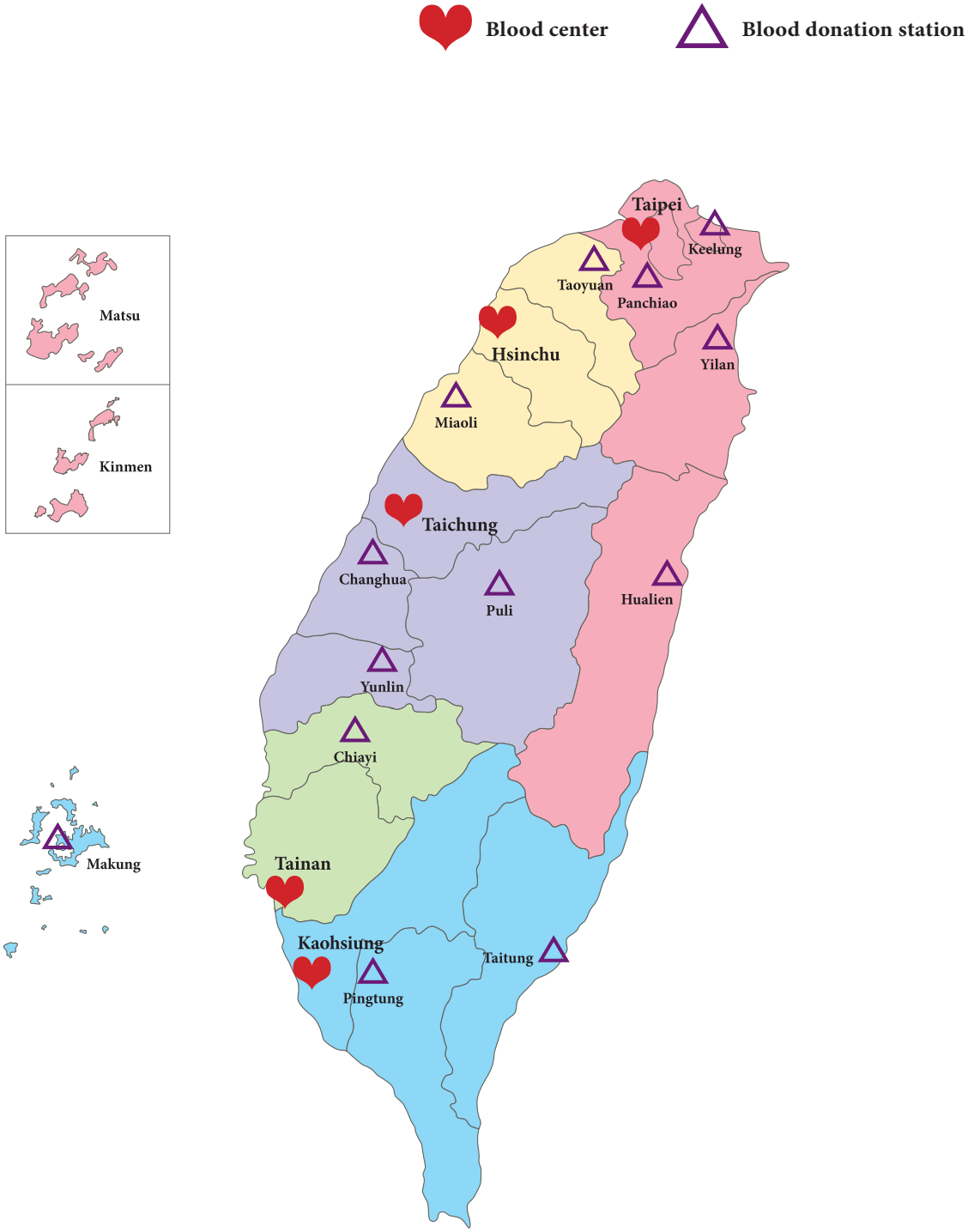
No. 1176, Sec. 4, Taiwan Boulevard, Xitun Dist., Taichung City 407, Taiwan, R.O.C.
TEL: 886-4-2461-2345 FAX: 886-4-2461-3939
Website: www.tc.blood.org.tw
Service area: Taichung City, Changhwa County, Nantou County, Yunlin County

Tainan Blood Center

No. 85, Sec. 1, Yongfu Road, West Central Dist., Tainan City 700, Taiwan, R.O.C.
TEL: 886-6-213-1212 FAX: 886-6-213-3201
Website: www.tn.blood.org.tw
Service area: Tainan City, Chiayi City, Chiayi County

Kaohsiung Blood Center

No. 1837, Gaonan Highway, Nanzi Dist., Kaohsiung City 811, Taiwan, R.O.C.
TEL: 886-7-366-0999 FAX: 886-7-364-1556
Website: www.ks.blood.org.tw
Service area: Kaohsiung City, Pingtung County, Penghus County, Taitung County


Blood center
Blood donation station
Matsu
Kinmen
Makung
Taipei
Keelung
Taoyuan
Panchiao
Hsinchu
Yilan
Miaoli
Taichung
Changhua
Puli
Hualien
Yunlin
Chiayi
Tainan
Kaohsiung
Taitung
Pingtung

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