

KEEPING PACE  
WITH THE LATEST IN



# BLOOD SERVICES

## Blood Services Group

We are committed to improving efficiency and donor experience, whilst maintaining the safety of our nation's blood supply.



## KNOWLEDGE AND INNOVATION

We strive to maintain world-class blood services by strengthening our knowledge base and utilising innovation.

### LEVERAGING DATA FOR BLOOD COLLECTION ANALYSIS AND PERFORMANCE OPTIMISATION



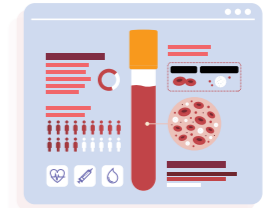
#### ●● Footfall Analysis for New Bloodbank

Last year, we analysed footfall data to optimise opening hours and closure days for the upcoming Bloodbank@One Punggol. The use of data analytics proved to be a much more efficient approach than manually compiling data from surveys, which would have required significant expenditure on manpower and resources.



#### ●● Supporting Decision-making and Performance Reporting

Starting from February 2023, we made use of Tableau to generate our blood collection data analysis report. The data available on the resulting interactive dashboard helps our Tableau data stewards to periodically evaluate and update blood collection and performance data, thereby supporting decision-making at the operations level. The performance reports also assist us in communicating relevant information to management and stakeholders.



### IMPROVING SURVIVAL IN HAEMATOPOIETIC STEM CELL TRANSPLANT WITH KIR AND HLA GENOTYPING USING RT-PCR



Our Tissue Typing and Platelet Reference Laboratory supports physicians conducting haematopoietic stem cell transplant. We achieve this by performing Human Leukocyte Antigen (HLA) and killer-cell immunoglobulin-like receptor (KIR) genotyping, which are vital for a successful transplant.

If a full HLA-matched donor is not feasible, physicians may consider haplo-identical transplants. KIR genotyping helps to identify the most suitable donor, which improves the survival rates for HLA-haploidentical haematopoietic stem cell transplants.

Our Real-time Polymerase Chain Reaction (RT-PCR) methodology combines the ability to test in batch or individual samples with the assurance of timely results reporting.

# TECHNOLOGY AND INFRASTRUCTURE

We embrace technology that helps us to raise efficiency in our work processes.

## NEW FEATURES IN OUR DONATEBLOOD APP

**January 2022:**

### Recruitment module was upgraded

We added an advanced search feature to identify and assign donor lists to tele-recruiters from the Blood Donor Programme. The new upgrade also allows staff to key in tele-recruitment related information and generate reports for data analysis.

**May 2022:**

### Faster and more seamless log-ins

Staff can now log in easily and securely to the DonateBlood intranet system using the Whole-of-Government Active Directory authentication.

**November 2022:**

### Mass notification feature was introduced

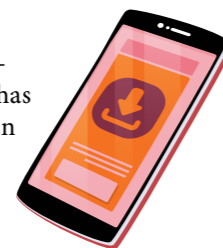
It enables staff to efficiently reach out to donors through SMS and email.

**August 2022:**

### Update of user interface

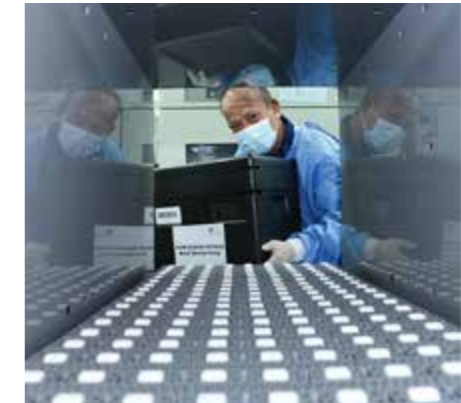
Enhancements were made to enrich the overall user experience.

As of March 2023, our well-received DonateBlood app has been downloaded more than **39,000 times**.



## IMPLEMENTING RFID IN OUR NATIONAL BLOOD PROGRAMME

In February 2023, we implemented real-time location tracking of blood and blood products by incorporating RFID chips in our blood labels. This transformation initiative significantly improves inventory management and reduces the time taken to retrieve blood products for distribution to hospitals.



## PRIORITISATION OF BLOOD USAGE DURING NATIONAL BLOOD INVENTORY SHORTAGES

We developed an action plan last year to prioritise the usage of red cells and platelets based on patients' medical conditions and urgency of surgeries. This plan will enable clear communication to hospitals on which patient groups will receive priority for blood transfusions during blood shortages. The plan will also allow hospitals to better manage and prioritise medical procedures.

## EVALUATION OF AUTOMATED SYSTEM FOR ANTIBODY IDENTIFICATION AND PHENOTYPING

Antibody identification result interpretation is mostly a manual process which requires a certain level of expertise for interpretation.

We will be implementing two automated systems to improve the process to make it more reliable. The adoption of these automated systems allows us to optimise our workforce by reallocating staff to other areas of need.



## PEOPLE AND VALUES

Our people are the cornerstone of our organisation. Hence, we are committed to investing in their growth and development to help them realise their full potential.

### CERTIFIED ON-THE-JOB TRAINING (OJT) CENTRE BY INSTITUTE OF TECHNICAL EDUCATION (ITE)

In August 2022, we successfully obtained the Certified OJT Centre accreditation by ITE. In this accreditation exercise, the Blood Services Group and HSA's Human Capital Management department developed the OJT blueprint that outlined the training requirements, skills and knowledge, and standards. The blueprint also included training guides, processes, and a structure to facilitate a more hands-on OJT learning approach.

As a certified OJT provider, we can award our staff an e-certificate when they complete their OJT module. This programme seeks to recognise our staff while motivating our trainers to develop better OJT modules.

## NEW LOCAL PARTNERSHIPS

We continued to build capabilities by forging new partnerships locally.

### ●● Manufacturing In-house CAR-T Products

In July 2022, we collaborated with clinicians from KK Women's and Children's Hospital and Singapore General Hospital to use our Cell & Gene Therapy Facility as a manufacturing site for various CAR-T products.

Our in-house CAR-T products were employed in clinical trials, providing innovative and more affordable salvage therapy for patients with haematological malignancies such as lymphoma and leukaemia, who are unresponsive to conventional chemotherapy treatment.



## NEW OVERSEAS PARTNERSHIPS

We collaborated with overseas counterparts, exchanging experience and knowledge to enhance our capabilities.



**May 2022:** In collaboration with SCG Cell Therapy Pte Ltd, we successfully completed the validation for the generation of a genetically modified cell product, SCG 101. The validation of SCG 101 processes was performed at our Good Manufacturing Practice (GMP)-certified facility in accordance with GMP requirements.

This has led to the commencement of Phase I clinical trial for treating patients with Hepatitis B virus-related Hepatocellular Carcinoma.

**September 2022:** We partnered with University of Hong Kong (HKU) and partner hospitals (Prince of Wales Hospital and Queen Elizabeth Hospital) to develop an implantable tissue engineered structure for autologous knee repair.



**October 2022:** We welcomed visitors from the Malaysia Transplant Programme to our laboratories. Together with the Singapore General Hospital Transplant Team, we are helping them to establish their National Transplant Programme.

## AWARDS AND ACCREDITATIONS

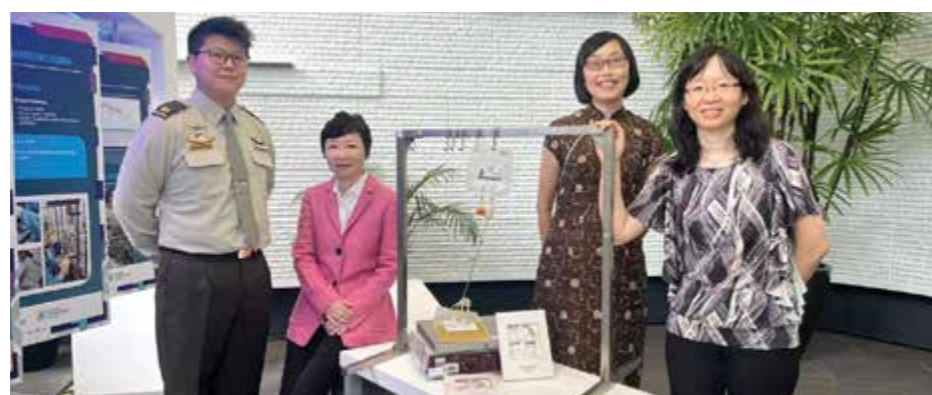
The efforts of our Blood Services Group were validated through the following awards and accreditations in FY22/23.

### AWARDED DEFENCE TECHNOLOGY PRIZE FOR BREAKTHROUGH METHOD TO PRESERVE PLATELETS

In October 2022, HSA, DSO National Laboratory, Singapore Armed Forces Army Medical Service and Singapore General Hospital, jointly received MINDEF's most prestigious defence technology award, the Defence Technology Prize.

This award was given in recognition of our joint work to extend the shelf life of platelets through a cryopreservation technique. Through this breakthrough, we will be able to achieve a more stable supply of platelets to be used by patients with massive bleeding, or patients who suffer from low platelet counts due to various medical reasons. This is especially critical for stockpiling of platelets for civil emergencies and to meet the special clinical requirements of patients who need specific types of platelets.

The team successfully extended the shelf life of platelets from **7 days to 2 years.**



### GOOD MANUFACTURING PRACTICES (GMP) CERTIFICATION

Our Gene Therapy Facility successfully achieved GMP certification while our Cell Therapy Facility renewed its certification last year. The facility was audited based on HSA's new guidelines for Cell, Tissue and Gene Therapy products.

### NURSES' MERIT AWARD 2022



Ms Joanna Hiok, Senior Staff Nurse at Blood Resources, received the Nurses' Merit Award for exceptional performance and contribution to nursing.

It was awarded to 125 nurses by Minister for Health, Mr Ong Ye Kung in July 2022.

### NATIONAL AWARDS (COVID-19)

Ms Noorhayati Rahamat, Blood Resources' Head of Planning & Controls was honoured with the Commendation Medal for her outstanding contributions.

The award ceremony recognised individuals and teams that made significant contributions in the fight against the COVID-19 pandemic.



### SINGAPORE HEALTH QUALITY SERVICE AWARDS 2023

The Singapore Health Quality Service Awards (SHQSA) Ceremony was held in February 2023 at the University Cultural Centre, with President Halimah Yacob as the Guest of Honour.

SHQSA is Singapore's first dedicated platform for honouring outstanding healthcare professionals who have delivered quality care and excellent service to patients and the public.



We took home **two Gold Awards** and **five Silver Awards.**

