The National Red Cell Reference Service at the Australian Red Cross Blood Service is a world leader in the field of immunohaematology. We support the organisation’s core activities in state-of-the-art laboratories designed to solve complex red cell immunohaematology cases. Through expert knowledge and a collaborative approach, we provide safe, high quality products and services supporting world-leading health outcomes.

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Australian governments fund the Australian Red Cross Blood Service to provide blood, blood products and services to the Australian community.
The Red Cell Reference Service provides an internationally recognised scientific and diagnostic service to support transfusion practice and clinical need. Our primary role is to support the clinical management and transfusion of patients and delivery of specialised blood components through:

- Excellent customer service;
- Specialised red cell serology and molecular genotyping services;
- Supporting the maintenance of a phenotyped inventory and rare donor panel, including an inventory of rare frozen red cells;
- Supporting education and exchange of resources nationally and internationally;
- Providing expert scientific and clinical advice;
- International collaboration to resolve complex cases; and
- Molecular genotype matching for safer transfusions.

Currently we complete over 2,700 complex antibody investigations and over 2,000 genotyping requests per year domestically. These complex investigations require specialised knowledge, training and know-how found in the Blood Service Red Cell Reference Service. The work in our laboratories is sophisticated, labour-intensive and often time-consuming, with the more complex investigations taking days, or even weeks, to complete. The expertise within the Blood Service Red Cell Reference Service is a national resource and is recognised nationally and internationally by our customers and peers. We are experts in our field. Our work is vital in ensuring we can provide compatible blood for transfusion to patients with particular red cell antibodies. The team identifies the antibodies, assesses the clinical significance and sources compatible red cells. Suitable blood may be found in our current donor panel, our frozen rare donor inventory, or from international blood services through our access to the International Rare Donor Panel.

We’ve developed this strategy to guide improvements in the National Red Cell Reference Service performance to provide a leading-edge, internationally recognised service supporting the Asia Pacific Region.
OUR RED CELL REFERENCE SERVICE STRATEGY

This Red Cell Reference Service strategy is innovative, customer-centric and at the leading edge. It will enhance our performance and raise our profile internationally over the next five years. We want to continue looking for ways to improve the lives of all Australians and drive positive change in all Red Cell Reference Services.

Every day, many patients receive blood for transfusion with few problems or complications, but for a small number of patients finding compatible blood can be a challenge. These patients need our services.

The increasing ethnic diversity of our population is a key driver in our need to expand our services into the Asia Pacific region, as we are seeing patients with blood group phenotypes and antibodies that are more prevalent in populations from this region. Our team’s continuing work with samples from patients originating from these regions provides valuable experience, knowledge and resources to better equip us to support Australian patients in the future.

INTO THE FUTURE

National Red Cell Reference Service:

Striving to provide safe, high quality products and services for world-leading health outcomes

Australia is a highly diverse nation—our population comprises people from over 190 different countries, with 48 per cent either born overseas or having at least one parent who was born overseas*. Australia has a higher proportion of overseas-born people than other countries founded on migration, such as the USA, New Zealand, and Canada, and migration now accounts for the majority of population growth in Australia. The proportion of the Australian population born overseas continues to grow, with highest growth coming from neighbouring Asian countries including Japan, China, Malaysia, and India; meanwhile, people from the UK and Europe account for a decreasing proportion of migrants.

We know that the frequency of blood group antigens and disease prevalence both vary across different ethnic groups. What is unclear is the impact of ethnic diversity in the Australian population on the provision of healthcare, including the supply of appropriate blood for transfusion. Over the course of the Blood Service’s previous strategic plan period (2014–2019), the Red Cell Reference Service has focused strongly on delivering and improving day-to-day business.

In 2019, it’s time to look to the future to ensure the services we offer remain relevant in an evolving healthcare climate. The Blood Service strategic vision is to provide a leading-edge, internationally recognised Red Cell Reference Service supporting the Asia Pacific Region.

To achieve this vision we require investment in our team’s development. We’ve identified opportunities to support staff recruitment and development, increase the breadth of services provided, establish or better use local and international collaboration networks, and raise the profile of the Blood Service and the Red Cell Reference Service.

Through partnering with international and local collaborators we are able to use our experience to influence leading-edge practice in our field. The knowledge and experience we gain will ensure that we are positioned to provide the services that our customers need and expect from us, to keep providing improved patient outcomes.

Despite the significant progress made over previous years, there are challenges ahead. We’ve developed this strategic plan to ensure that the Red Cell Reference Service is able to deliver this vision and to provide appropriate support for patients from a diverse range of ethnic groups. The following outlines how we achieve this vision.

*Census of Population & Housing, 2016
We will prioritise new projects that deliver improved customer service and transfusion outcomes for patients.

FOCUS AREA 1

LEADING EDGE

The Red Cell Reference Service will increasingly focus and prioritise projects to deliver improved customer service and contribute internationally to the understanding of red cell blood group antigens and antibodies. This will improve the transfusion outcomes for patients.

STRATEGIC GOAL

We will work with Blood Service Research and Development and Business Development teams to develop and implement new technologies, assays and processes to expand and enhance our service offering. We will work collaboratively with local and international colleagues and research organisations to share, gain and use expertise. We will make significant changes to our planning and prioritisation efforts to achieve this with early input from key internal and external stakeholders.

Strategic Action 1

DEVELOP AND PRIORITISE PROJECTS THAT:

A. Expand our understanding of our customers’ immediate and future needs through:
   i. Increasing our customer engagement; and
   ii. Increasing our understanding of changes internationally and their potential impact or application in our region.

B. Ensure the continued and improved supply of appropriate red cell components for transfusion through:
   i. Increasing the availability of appropriately phenotyped red cell inventory; and
   ii. Increasing the availability of fresh and frozen rare phenotyped red cells.

C. Improve testing outcomes and patient management through:
   i. Increasing our knowledge and understanding of the clinical significance of red cell antibodies;
   ii. Determining and evaluating methods to establish the clinical significance of red cell antibodies;
   iii. Implementing improvements to current processes to improve quality and efficiency; and
   iv. Developing and implementing new technologies to improve patient management.

Strategic Action 2

INCREASE OUR INTERNATIONAL AND LOCAL CONTRIBUTION AND COLLABORATIONS IN THE FOLLOWING KEY AREAS OF FOCUS:

A. Molecular basis of blood group antigens through genotyping and sequencing;
B. Clinical significance of red cell antibodies; and
C. Identification of donors with rare blood types to enable growth and maintenance of the rare donor panel.

WE WILL KNOW IF WE HAVE ACHIEVED OUR GOAL OF LEADING EDGE TESTING IF, AT THE END OF FIVE YEARS, WE HAVE:

1. A. An expanded service offering to improve patient management with samples referred from the Asia Pacific region on a cost-recovery basis;
   B. Reduced our reliance on international colleagues to provide support with rare blood for transfusion;
   C. An extensive range of diagnostic tests that enable the resolution of complex blood group and antibody investigations, and an understanding of the clinical significance to support appropriate patient management; and
   D. Adopted appropriate digital technologies to support and improve the provision of Red Cell Reference Services.

2. A. One Red Cell Reference Service publication or presentation each year describing or reviewing the molecular basis of a blood group system or antigen (may be co-authored with the Research and Development team or international collaborators);
   B. One Red Cell Reference Service publication or presentation per region each year describing or reviewing the clinical significance of blood group antibodies; and
   C. Increased availability of rare blood from fresh or frozen inventory following recruitment of new donors identified through screening programs.
FOCUS AREA 2
OUR PEOPLE

Training and professional development opportunities in the field of red cell reference, both nationally and internationally, are very limited. In order to increase its national and international profile, the Blood Service will invest in opportunities that provide training and professional development both internally and externally.

By offering the opportunity to work on leading-edge research projects, we will increase our capacity to attract and retain the best and brightest scientists. By doing so we will contribute to a competitive, internationally recognised Red Cell Reference Service, where people feel they are part of a team with exciting future prospects.

STRATEGIC GOAL

We will work with the Business Development, Learning and Development and Transfusion Policy and Education teams to further develop the existing internal and external training programs and expand the service to a broader external client base as a fee-for-service offering. We will consider opportunities to work collaboratively with professional bodies or training organisations to leverage expertise. We will be recognised as a leading-edge provider of education and professional development in our field. We will be a preferred employer, attracting the brightest and best scientists and recruiting emerging talent from universities and collaborating laboratories.

Strategic Action 1
ESTABLISH A SUSTAINABLE RECRUITMENT PROGRAM TO:
A. Attract, identify and recruit the best scientists and technicians with the knowledge, skills and attributes needed for the role.

Strategic Action 2
SET INTERNAL TRAINING AND PROFESSIONAL DEVELOPMENT TARGETS FOR ALL RED CELL REFERENCE STAFF TO:
A. Drive a learning culture within our team and to increase and enhance our skills and knowledge;
B. Improve staff engagement, retention and development within these teams for succession planning in key roles to ensure the maintenance and growth of the high quality work and reputation of the service; and
C. Provide opportunities to support and encourage existing staff to pursue post-graduate studies.

Strategic Action 3
ESTABLISH TRAINING AND PROFESSIONAL DEVELOPMENT PROGRAMS TO:
A. Provide opportunities to exchange staff with international collaborators;
B. Develop training and professional development materials for staff and external clients;
C. Contribute to world leading research and improved patient outcomes; and
D. Investigate opportunities to become a registered training organisation or collaborate with professional bodies (e.g. Royal College of Pathologists Australia) and/or training organisations like universities to leverage expertise.

Strategic Action 4
INCREASE THE NUMBER OF JOINT APPOINTMENTS WITH AUSTRALIAN OR INTERNATIONAL UNIVERSITIES TO:
A. Increase our integration with the broader health and blood transfusion community and expand the Blood Service’s Red Cell Reference footprint beyond our four walls.
We will increase our collaborations with research and clinical teams to better understand red cell antigens and antibodies to improve clinical outcomes for patients.

FOCUS AREA 3
COLLABORATION

A key strength of other internationally recognised red cell reference laboratories is their ongoing research to better understand red cell antigens and antibodies to improve clinical outcomes for patients. To increase its national and international profile, the Red Cell Reference Service will need to improve collaborative links with Research and Development to identify research needs, formulate research questions, monitor research progress, communicate information relevant to research projects and their application to the business, as well as translate research outcomes into practice. Linking with a university, research organisation or international red cell reference service would assist in raising our profile, developing staff and opening up other opportunities.

STRATEGIC GOAL

Over the next five years we will increase our collaborations with the Research and Development and Clinical Services teams to better understand red cell antigens and antibodies to ensure we have appropriate blood for transfusion and improve clinical outcomes for patients. We will have a well-established and tested technology transfer process that is delivering an enhanced service offering to reduce risk and improve transfusion outcomes. We will be recognised as an international leader in this field.

Strategic Action 1
ENGAGE RESEARCH AND DEVELOPMENT IN PROJECT PLANNING TO:
A. Identify areas in need of Research and Development input and to identify opportunities for collaboration; and
B. Participate in and lead design control and technology transfer processes to support successful translation of research projects.

Strategic Action 2
PARTICIPATE IN EXTERNAL COLLABORATIONS LOCALLY AND INTERNATIONALLY THAT WILL:
A. Provide opportunities for exchange of knowledge and expertise; and
B. Raise the profile of the Red Cell Reference Service locally and internationally.

Strategic Action 3
INCREASE THE NUMBER OF ABSTRACTS THAT ARE ACCEPTED AT LEADING INTERNATIONAL AND NATIONAL CONFERENCES AND MEETINGS TO:
A. Raise the profile of the Red Cell Reference Service locally and internationally.

WE WILL KNOW IF WE HAVE ACHIEVED OUR GOAL OF INCREASED COLLABORATION IF, AT THE END OF FIVE YEARS:

1. A. All red cell reference-related research projects are jointly sponsored by Research and Development and Red Cell Reference Service leaders, as nominated by the Executive Director; and
B. New technologies developed by the Blood Service satisfy the design control and technology transfer requirements for implementation as an in-vitro diagnostic.

2. A. Two publications or presentations are co-authored with international collaborators; and
B. We have active participation in the International Society of Blood Transfusion (ISBT) working party for Rare Donors, ISBT working party for Immunohaematology, or have equivalent international representation.

3. A. Abstracts are accepted at relevant national and international conferences and meetings with at least one oral presentation per year.
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