Editorial

Blood services in Thailand: 2025 perspectives

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Introduction

Blood transfusion services in Thailand have experienced remarkable growth and transformation in recent years. This progress stems from strong collaboration among key stakeholders, notably the National Blood Centre, Thai Red Cross Society, the Ministry of Public Health, and an extensive network of 159 blood service branches. Their unified efforts have elevated Thailand's blood transfusion system, ensuring it meets the evolving needs of patients and healthcare providers nationwide.

Blood donation and patients' safety

In 2025, number of blood donation in Thailand stands out on the global stage, with 43.93 donations per 1,000 population which is substantially higher than the median rate of 31.5 donations per 1,000 population in high-income countries.[1] This achievement reflects the effectiveness of public awareness campaigns, and donor recruitment strategies. It meets clinical demand and maintains a robust blood supply.

Blood services in Thailand have made significant strides in screening for transfusion-transmissible infections such as HIV, hepatitis B (HBV), hepatitis C (HCV), and syphilis. The adoption of advanced testing technologies such as Individual-NAT has reduced the likelihood of contaminated blood entering the supply. However, residual risk that a donation made in the infectious window period is not detected on testing has remained, such as the number of potentially HIV infectious donations not detected in one million donations is 15.31 which exceeds that of high-income countries, 0.05 in one million donations.[2] Factors contributing to this gap include variations in donor self-assessment and interviewing processes, epidemiological trends, and donor resource availability. Addressing these challenges requires continued surveillance, research, and international collaboration to benchmark and enhance safety standards.

An effective Patient Blood Management (PBM) is vital for optimizing transfusion practices and patients' safety. PBM not only conserves blood resources but also reduces exposure to potential risks associated with transfusion. By prioritizing evidence-based guidelines and multidisciplinary collaboration, Thailand's transfusion services are promoting PBM, aims to enhance outcomes for patients while minimizing unnecessary interventions.

Although transfusion carries inherent risks including transfusion adverse reactions and transfusion transmitted infections, National Hemovigilance monitoring, reporting, and managing these risks remains essential. Continuing education for clinicians and staff helps ensure prompt recognition and response to complications, thereby improving patients' safety.

Blood supply and management

Leucodepleted blood components

The universal provision of leucodepleted blood components is another key policy initiative in Thailand. Leucodepletion reduces the risk of immunological complications and transfusion reactions. Efforts are underway to increase production capacity, ensuring that more patients benefit from safer blood products. Progress in this area demonstrates Thailand's commitment to aligning with global best practices in transfusion medicine.

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Blood cold chain and logistics

Proper management of the blood cold chain is essential for preserving the integrity and safety of blood products. Recent improvements in storage and transportation systems have strengthened the reliability of Thailand's supply chain. Investments in temperature monitoring and transportation materials ensure that blood components remain usable, reducing wastage and enhancing patient outcomes.

The implementation of a centralized blood logistics system has begun in Thailand, aiming to streamline blood transportation processes nationwide. This initiative enhances readiness, convenience, and efficiency by ensuring that blood products reach healthcare facilities rapidly and cost-effectively. Additionally, the system adheres to rigorous standards, guaranteeing that the integrity and safety of blood products are maintained throughout the supply chain.

The national blood service action plan (2022-2027) sets forth ambitious goals for blood sustainability and safety in country, standardization and quality assessment in branches, patient blood management, and the development of a centralized information system of blood donor and inventory.[3] These strategies aim to harmonize operations, optimize blood resource allocation, and facilitate real-time tracking of blood products.

Continual quality improvement is at the heart of Thailand's transfusion service strategy. Adoption of internationally recognized standards, including ISO 9001, ISO 15189, ISO 15190, Good Manufacturing and Distribution Practice (GMDP), Laboratory Academic Standard, and ISO 27001 will ensure that processes are robust, risks are minimized, and patient trust is prioritized. These certifications serve as benchmarks for excellence and accountability in healthcare delivery.

Facing future challenges

Although Thailand has continually developed and enhanced its blood services, the country still faces emerging challenges arising from rapid changes in information technology, workforce limitations, and economic and geopolitical volatility. Therefore, it is crucial to have dynamic operational plans, such as the implementation of national centralized and automated information systems using lean processes that ensure the security and integrity of data, as well as integrated collaboration under unified policies. Additionally, concise communication targeting specific groups, particularly the younger generation and adolescents, helps bridge generational gaps. Preparing for emergencies and disasters is also essential to ensure a safe and uninterrupted blood supply in the future.

Conclusion

Through collaboration, technology, and international standards, Thailand's blood transfusion services prioritize safety and continual improvement, remaining a leader in life-saving care.

References

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