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# Economic and Social Impact of Thalassemia in Cambodia: Challenges and Strategic Solutions

*by Shamila Ramjawan, MBA, TEFL  
Lecturer, CamEd Business School*

**Background:** Thalassemia, a hereditary blood disorder characterized by abnormal hemoglobin production, presents significant health challenges in various regions worldwide, including Cambodia. This genetic condition leads to the destruction of red blood cells, causing anemia and other severe complications. In Cambodia, thalassemia affects thousands of people annually, with a significant number of cases identified in younger populations. Awareness and understanding of thalassemia in Cambodia have gradually increased over the past decade thanks to efforts by health organizations, government initiatives, and international collaborations. However, despite these efforts, the management and treatment of thalassemia face significant obstacles. Severe thalassemia diseases are a major health problem in Southeast Asia.

**Causes:** Thalassemia is a genetic disorder, inherited from parents who are carriers of the mutated gene. It is not caused by environmental factors like pollution, but by genetic inheritance. This makes public awareness and genetic counseling essential in managing the disorder's prevalence. Limited access to medical facilities and specialized care poses a significant barrier for individuals with thalassemia. Diagnostic capabilities are often inadequate, with many cases going undiagnosed or misdiagnosed due to the lack of advanced diagnostic tools and trained medical personnel. Furthermore, the availability of treatment options is constrained. Blood transfusions, the most common treatment for thalassemia, are hindered by the scarcity of safe blood supplies. In rural areas, blood banks are limited, and the logistics of transporting blood to remote locations are

complex and costly. Iron chelation therapy, necessary to prevent iron overload in patients receiving regular transfusions, is often unavailable or unaffordable for many families.

**Challenges:** Cambodia has a notably high prevalence of thalassemia, partly due to the genetic transmission within the population. Economic limitations further exacerbate these challenges. Many families affected by thalassemia live in poverty, making it difficult to afford the ongoing medical care required. The cost of regular blood transfusions, iron chelation therapy, and other supportive treatments can be overwhelming. In addition, health insurance coverage in Cambodia is limited, and out-of-pocket expenses for healthcare are substantial. As a result, many families forego necessary treatments, leading to deteriorating health outcomes for individuals with thalassemia.

In the context of Cambodia's healthcare landscape, thalassemia is one of the critical disorders that pose a significant burden. Thalassemia ranks lower on the public health priority list compared to more prevalent infectious diseases such as malaria, dengue fever, and tuberculosis, which receive greater focus due to their infectious nature and higher mortality rates. While non-communicable diseases like thalassemia are gaining attention, the country continues to grapple with rising chronic conditions like diabetes and hypertension, as well as persistent issues like malnutrition. The lack of widespread awareness and screening for thalassemia contrasts with the more established programs for combating infectious and nutritional diseases, making it a unique but underrepresented health challenge in Cambodia.

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**Feasibility of Treatments:** Several challenges hinder the effective management of thalassemia in Cambodia. One of the primary challenges is the lack of awareness and education about the condition. In many rural communities, there is limited knowledge about thalassemia, its genetic transmission, and the importance of early diagnosis and treatment. This lack of awareness extends to healthcare providers, many of whom are not adequately trained to recognize and manage thalassemia. Consequently, individuals with the disorder often do not receive timely and appropriate care.

Stigma and cultural beliefs also play a significant role in the challenges faced by thalassemia patients. In some communities, there is a stigma associated with genetic disorders, leading to social exclusion and discrimination. Families may be reluctant to seek medical help or disclose their condition due to fear of stigma. Cultural beliefs and traditional practices can also interfere with the acceptance and adherence to medical treatments.

Treatment options, such as regular blood transfusions and iron chelation therapy, are available but expensive. Public awareness campaigns, promoting healthier lifestyles and better sanitation, could help reduce the incidence of preventable diseases and improve overall health outcomes, which may indirectly benefit thalassemia management.

**Economic Implications:** Thalassemia has significant economic implications that affect individuals, families, and the broader healthcare system in Cambodia.

**Healthcare Costs:** Thalassemia requires regular medical care, including frequent blood transfusions and iron chelation therapy to manage iron overload. These treatments are costly, and the expenses can accumulate over time. For many families in Cambodia, especially those in rural areas with limited financial resources, the cost of continuous medical care can be overwhelming.

**Loss of Productivity:** Individuals with thalassemia often experience chronic fatigue and other health complications that can limit their ability to work or attend school regularly. This reduced productivity affects not only the patients but also their caregivers, who may need to take time off work to provide care. The cumulative effect is a loss of household income and economic productivity at the community and national levels.

**Economic Burden on Healthcare System:** The healthcare system in Cambodia faces a significant burden in managing thalassemia. The need for specialized care, regular blood transfusions, and long-term treatment options like iron chelation therapy puts a strain on healthcare resources. Public hospitals and clinics, often operating with limited funding and resources, struggle to provide adequate care for thalassemia patients.

**Educational Impact:** Children with thalassemia miss school frequently due to their medical condition, affecting their education and future economic opportunities. This educational disruption can have long-term consequences on their ability to secure employment and contribute economically to their families and society.

**Solutions:** Addressing the challenges of thalassemia in Cambodia requires a multifaceted approach involving government commitment, healthcare system strengthening, community engagement, and support from the business sector. A key component of this strategy is the establishment of a comprehensive national program for thalassemia management. Such a program would include public education campaigns to raise awareness about the condition and genetic counseling services to help prevent the transmission of thalassemia.

To enhance the healthcare infrastructure, it is crucial to increase the availability of diagnostic tools, expand blood banks, and ensure the affordability and accessibility of iron chelation therapy. Training healthcare providers to recognize and manage thalassemia is also critical to improving patient outcomes. Educational programs for healthcare workers can be developed in collaboration with international health organizations to provide the necessary skills and knowledge.

The business sector can play a significant role in supporting thalassemia management efforts. Companies can contribute by funding public awareness campaigns, sponsoring healthcare facilities, and providing financial assistance for treatment costs. Corporate social responsibility programs can include initiatives to support blood donation drives, ensuring a steady supply of safe blood for transfusions. A broader involvement of businesses could greatly increase the reach and impact of these initiatives, helping to create a society that supports individuals with thalassemia.

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Public involvement is also crucial. Individuals can contribute by donating blood regularly, which is vital for children with thalassemia who require monthly transfusions. Community organizations and NGOs can facilitate awareness programs, support groups, and advocacy efforts to reduce the stigma associated with the condition.

Conclusion: Addressing the challenges of thalassemia in Cambodia requires a concerted effort from various stakeholders, including the government, healthcare providers, the business sector, and the community. Establishing a comprehensive national strategy for thalassemia management is essential to ensure coordinated and effective care for affected individuals. Improving access to healthcare services, particularly in rural areas, is crucial for early diagnosis and timely treatment. Enhancing public awareness and education about thalassemia can reduce stigma and encourage more people to seek medical help.

By adopting a comprehensive and coordinated approach, it is possible to reduce the burden of thalassemia on Cambodian society and improve the health outcomes of those affected by this genetic disorder.

The Cambodian Thalassaemia Association-CTA slogan is "*A Society free from Thalassemia*".