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アジア諸国の献血制度の  
構築と普及に関する研究

平成27年度 総括研究報告書

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アジア諸国の献血制度の構築と普及に関する研究  
(H26-地球規模 A-指定-001)

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研究要旨

WHO 世界保健機関では、2020 年までに全ての国が 100%献血を実施し、原料血液を確保することを求めているが、開発途上国を中心に未達成の国が多い。我が国では 1964 年のライシャワー事件をきっかけに、政府閣議決定以降、日本赤十字社を中心として献血制度と血液需給システムが整備され、輸血用血液製剤は 1974 年に、血漿分画製剤は 1990 年に、原料血液を献血による自給を達成した。当時、我が国は開発途上国であったといえるが、社会啓発と教育によって献血制度を構築普及できるという我が国の経験は、世界各国へモデルとして提示できるものである。

本研究の前身として、平成 23 年度から 3 年間で、カンボジアにおける献血活動の支援を行い、若者の代表である大学生を中心とした献血活動の推進に一定の成果を上げてきた。そこでカンボジア以外の国での献血活動を推進するためアジア諸国の献血活動担当者を招聘して国際会議を開催し、各国の献血の実態を発表してもらい議論を交わした。その結果、若者を中心として献血活動を推進するというコンセプトについては同意が得られるものの、それぞれの国において輸血製剤の準備状況や献血活動の実施には様々に異なる問題点のあることが明らかとなった。この会議を通じて得られたことは、まず、こうしたアジア諸国の献血活動に関する意見交換を重ねていくことが重要であり、そこでの議論を基にして、本研究班の献血活動支援を広げていくことが適当と考えられる、ということである。

それをさらにすすめるため、本年度は第二回のアジア諸国献血担当者による国際会議を開催し、リピータードナーの確保を軸として各国の状況の報告と議論を実施した。前回の会議からさらに各国の抱える問題の多様性が明らかになった。

A. 研究目的

我が国の 1970 年代及び 80 年代の献血制度の構築と普及に関する経験とノウハウ、また、カンボジアモデルを完成させ、周辺国に両方の経験を伝達していく。以って、開発途上国における献血制度の普及を促進するという国際貢献を図っていくことが本研究の目的である。これまでの前身の研究においては、当初、我が国の献血活動発展に関する知識、経験をそのまま伝え、それを利用してもらうことで開発途上国の献血活動を推進させられる戸考えていた。しかし、カンボジアにおけるパイロットプロジェクトから、当事国における事情に合わせてそれぞれの献血ムーブメントをサポートすることの重要性が明らかとなった。すなわち、「知識

の供与」ではなく、我が国が経験したプロセスの伝達こそが重要ということである。

本班では、アジアを中心とする開発途上国での献血思想の普及確立がひとつの活動目標であるが、そのために昨年度、アジアを中心として 7 カ国が参加する献血活動に関する国際会議を開催した。この会議に於いて各国が様々な問題を抱えつつ献血活動の活性化に取り組んでいることが明らかとなったが、本年度もさらにこうした理解を深めるため、第二回の国際会議を開催し、リピータードナー確保の問題を中心にそれぞれの取り組みと意見交換を行った。

B. 研究方法

本研究の主要計画は以下の 3 点である。

1. カンボジアにおける大学献血キャンペーンモデルの定着化を図る。

2. カンボジア王国献血思想普及5ヵ年Action Planの策定に着手する。

3. 周辺国を巻き込んだ国際会議やワークショップを開催し、モデルケースの伝達をする。

ここにあげた「3.」をさらに推進するため、今年度はリピータードナーの確保を中心点キナテーマとして各国の現状、取り組みについての意見交換と議論を行った。

アジアを中心に8カ国が参加した献血活動に関する第二回目の国際会議を開催した。

この会議開催、並びに今後の研究においては、当該国政府及び献血担当部門、WHOとの連携を密にして進める。

#### C. 研究結果

2015年11月9日、10日、ベトナムのハノイにおいて献血活動に関する第二回の国際会議を開催した（THE 2ND ASIAN MEETING FOR SELF-SUFFICIENCY OF BLOOD AND BLOOD PRODUCTS BASED ON VOLUNTARY NON-REMUNERATED DONATION）。参加国は、マレーシア、ラオス、フィリピン、ベトナム、カンボジア、シンガポール、ドイツ、日本の8カ国で、ドイツはラオスの献血活動をサポートしている。アジア諸国の献血活動担当者が参加し発表、意見交換を行った。以下、アジア各国からの報告について記載する。

##### (1) カンボジア

人口1500万人のカンボジアにおいて献血者の割合は0.3%程度であり、決して高くない。国立輸血センターと地域のセンター（21カ所）において献血が実施されている。VNRBDの占める割合は33.6%程度であり、その定着はまだ、達成されていない。輸血後のレシピエント感染症は2014年で6.1%となっており、輸血の安全性確立のためにも、様々な活動を通じてVNRBDの推進を図る必要がある。リピータードナー確保

のための活動として、製剤貯蔵の改善、献血スタッフの教育、replacementドナーに対してのVNRBDへの協力依頼などを行っている。

##### (2) マレーシア

マレーシアではほぼ100%VNRBDを達成している。2900万人の人口で、2014年には70万件の献血が実施された。人口に対するドナー割合は2.4%程度である。その60%は複数回ドナーであった。こうしたドナーの管理に対してマーケティングの手法を導入しており、パンフレット、ポスター、新聞、ラジオ、テレビなどを通じた情報提供を行っている。これを通じて、献血に関する教育と意識付けの重要性が明らかとなってきた。

##### (3) ラオス

1995年よりラオス赤十字の輸血部門が輸血プログラムを実行している。国立輸血センター（NBTC）1箇所、地域の血液センター13箇所、血液貯蔵部として17の地域病院と6の軍隊病院がある。2014年は献血の53%程度をNBTCで採血した。献血車による採血やシンガポール赤十字の支援を受けた職員教育、高校生、大学生の教育を行っている。人口の1%が献血ドナーとなるよう、活動を続けている。

##### (4) フィリピン

フィリピンでは健康省、フィリピン赤十字、フィリピン血液共同協議会（Philippine Blood Coordinating Council）の三者が協力して活動を行っている。献血血液の中央検査態勢が整備され、VNRBD率は84%で、献血の79%は複数回ドナーからの採血である。リピータードナーを増やすためにメディアの利用、情報管理の推進を行っている。

##### (5) ベトナム

ベトナムでは5カ所の広域血液センター、10カ所の地域血液センター、70カ所のびよん血液バンクによって献血活動を行っている。2013年から2014年

の VNRBD は献血の 96%を占め、100%達成まで近づいてきている。国家の人口比を反映してドナーの 60%は 24 才以下、全体の 92%が 34 才以下と極めて若く、当面、ドナー人口は確保されている。しかし複数回ドナーは 31%と決して高くはないため、対応が必要である。

(6) シンガポール

シンガポールでは人口比 2%程度が献血ドナーとなっているが、65 才以上の人口が増加するに従って血液製剤の需要が毎年増加している。複数回ドナーは 39%程度で、その増加を目指している。一方で国全体では様々な分野でボランティアとしての活動を呼びかけられるようになっており、そうした意味では献血に対する意識が希釈されてしまっている。そのため、献血意識の向上、ドナーにとっての献血しやすさの確保、ドナーへの感謝を伝える、ドナーを献血推進活動に巻き込むといったマーケティング戦略を採用している。

D & E. 考察及び結論

当班の活動としてアジア各国に参加を呼びかけての献血活動の会議によってアジアにおけるそれぞれの国の献血状況が少しずつ明らかになってきた。今回もこの会議は大変貴重な情報交換の場となったといえる。国の置かれている状況によって、それぞれに異なる問題点、それに対する取り組みが見られており、こうした会議での議論の中からそれぞれが VNRBD 達成への対応策を作り上げる一助となることを期待している。国を超えての情報共有、問題解決への議論は極めて重要である。

第二回目の会議を終え、こうした場がアジア全体の献血活動の活性化に寄与すると感じた。今回、シンガポールが新たに参加したが、国の状況は違っていても人口の高齢化という我が国が抱える問題と類似の状況が起こり始めており、問題点を共有できた。

こうした会議を定期的開催し、VNRBD 達成とその維持に向けた地道な活動の現状、新たな取り組みなど、国を超えての情報交換はどの委

員からも必要であるという意見であった。

研究班として、今年度初めてカンボジアからベトナムに活動範囲を広げたが、それも意義のある点であった。

F. 健康危険情報  
(総括研究報告書にまとめて記入)

G. 研究発表  
なし

H. 知的財産権の出願・登録状況(予定を含む)  
なし

資料 1  
会議のサマリー



**THE 2<sup>ND</sup> ASIAN MEETING FOR SELF-SUFFICIENCY  
OF BLOOD AND BLOOD PRODUCTS  
BASED ON VOLUNTARY NON-REMUNERATED DONATION**

**SUMMARY**

**November 9-10, 2015**

**National Institute of Hematology and Blood Transfusion, Vietnam**



**THE 2<sup>ND</sup> ASIAN MEETING FOR SELF-SUFFICIENCY  
 OF BLOOD AND BLOOD PRODUCTS  
 BASED ON VOLUNTARY NON-REMUNERATED DONATION**

**AGENDA**

<b>Day 1: November 9, 2015</b>	
<b>9:00 am</b>	<b>Opening ceremony: (30 min)</b> <ul style="list-style-type: none"> <li>Welcome remarks by Prof Yasushi Miyazaki, Nagasaki University</li> <li>Opening remarks by Prof. Nguyen Anh Tri, Director of NIHBT, Vietnam</li> <li>Opening remarks by Prof. Le Quang Cuong, Vice Minister, Ministry of Health, Vietnam</li> </ul>
<b>9:30 am</b>	<b>Group photo</b>
<b>9:40 am</b>	<b>Report on past activities</b> By Nagasaki University
	<b>Voluntary blood donation among youth in university – Cambodia model</b> By Eang Rothmony, PharmD, PhD, University of Health Sciences, Cambodia
<b>10:10 am</b>	<b>Global status of blood supply, challenges and strategies</b> By Dr. Sek Mardy, Technical Officer – Transfusion Safety, WHO Representative in Cambodia
<b>10:30 am</b>	<b>Coffee break</b>
<b>10:40 am</b>	<b>Japan’s experience: Measures for future stable supplies in Japan – securing repeat donors</b> By Mr. Masahiro Takikawa, Blood Service Headquarters, Japanese Red Cross
<b>11:00 am</b>	<b>Case studies in Asian countries: “Country reports and their efforts and experiences in increasing blood donor repeaters”</b> Malaysia: Dr. Wool Seong, National Blood Centre Singapore: Mr. Robert Teo Wei Long, Singapore Red Cross Vietnam: Dr. Ngo Manh Quan, NIHBT
<b>12:00 pm</b>	Discussion
<b>12:30 pm</b>	<b>Lunch</b>
<b>1:45 pm</b>	<b>Case studies in Asian countries (continued)</b> Cambodia: Dr. Kimcheng Hok, National Blood Transfusion Center Lao PDR: Mr. Phenthong Banchanthavong, Lao Red Cross Philippines: Dr. Christie Monina M. Nalupta, Philippine Red Cross
<b>2:45 pm</b>	<b>Coffee break</b>
<b>3:00 pm</b>	<b>NIHBT Tour</b>
<b>4:00 pm</b>	Discussion
<b>5:00 pm</b>	<b>Conclusion session for case studies</b>
<b>Day 2: November 10, 2015</b>	
<b>8:30 am</b>	<b>Japanese experience: Marketing strategy development to increase repeaters</b> By Prof. Yasushi Miyazaki, Nagasaki University
<b>8:50 am</b>	<b>Plenary discussion: How to increase blood donor repeaters</b> Topic 1: Communication strategies Topic 2: Donor care activities
<b>10:00 am</b>	<b>Coffee break (15 min)</b>
<b>10:15 am</b>	<b>Plenary discussion: How to increase blood donor repeaters</b> Topic 3: How to maintain blood supply stably? Topic 4: How to retain walk-in blood donors in remote and island areas?
<b>11:25 am</b>	<b>Future collaboration among Asian countries for self-sufficiency based on voluntary non-remunerated donation (VNRD)</b>
<b>12:00 pm</b>	<b>Closing address:</b> <ul style="list-style-type: none"> <li>Prof Yasushi Miyazaki, Nagasaki University</li> <li>Prof Nguyen Anh Tri, Director of NIHBT</li> </ul>
<b>12:30 pm</b>	<b>Lunch</b>

## SUMMARY OF MEETING

**Day 1: November 9, 2015**

### Opening Ceremony

#### Welcome remarks

**Dr. Ngo Manh Quan** welcomed all delegates to the Second Asian Meeting for Self-Sufficiency of Blood and Blood Products based on Voluntary Non-remunerated Donation (VNRD). It was noted that in 2014, the WHO and Nagasaki University had collaborated to hold the first meeting in Cambodia, in collaboration with the Cambodian National Blood Transfusion Center (NBTC). The representatives of seven countries exchanged information on blood donation. This, the second meeting, was being co-organized by the National Institute of Hematology and Blood Transfusion (NIHBT), Ministry of Health of Vietnam and Nagasaki University. The participants, including distinguished officials of the Ministry of Health, were introduced.

**Prof. Yasushi Miyazaki** noted that it was a great privilege to hold the second meeting in Hanoi, which is being jointly organized by NIHBT, Ministry of Health of Vietnam, Ministry of Health, Labour and Welfare (MHLW) of Japan, the World Health Organization (WHO), the Japanese Red Cross and Nagasaki University. He noted that timely access to blood is a very important issue and self-sufficiency of blood products based on VNRD is highly necessary. Many countries are still on the way to obtaining sufficient products. One of the reasons is the lack of programs for VNRD. Efforts have been implemented since 2011 in Phnom Penh to promote VNRD among youth in Cambodia. This program resulted in great success and the experiences of Cambodia will be presented in this meeting. Campaigns for blood donations among Cambodian students were implemented by students in seven universities in Phnom Penh. This is one of the ways to make VNRD sustainable. In order to share experiences in Cambodia with other Asian countries the first meeting was held in Cambodia. As Dr. Ngo Manh Quan had noted in his introductory remarks, representatives from seven Asian countries participated in the meeting and information was exchanged about the situation in the various countries. The previous meeting had made it clear that there are different situations and problems in each country, but there are also common issues. Networking in Asian countries regarding VNRD is helpful for all to address common issues.

Prof. Miyazaki noted that in this two-day meeting it is hoped that efforts to expand VNRD will be exchanged and valuable discussions will take place.

#### Opening remarks

**Prof. Nguyen Anh Tri**, Director of NIHBT, Vietnam, noted that it was an honor to organize and host the second meeting. The efforts of Nagasaki University for giving NIHBT the honor of holding this meeting are highly appreciated. The objective of the meeting is to share experiences. During the meeting the delegates will have a chance to learn about the experiences of Japan and international and local specialists. It is to be hoped that all the participants will join in active discussions on ensuring blood safety in Vietnam and other countries. By organizing this meeting Vietnam seeks to gain further partners in blood transfusion. Prof. Tri expressed his thanks to the Ministry of Health of Vietnam and to the Vietnam Red Cross for their support in organizing the meeting.

**Prof. Le Quang Cuong**, Vice Minister, Ministry of Health of Vietnam, noted that he was delighted to attend the second meeting. On behalf of the Minister of Health he welcomed all delegates. Ensuring self-sufficiency of blood and blood products is an important challenge for many countries and therefore this meeting is very timely and much appreciated. The Minister of Health assigned responsibility for blood transfusion and hematology to the NIHBT and the first VNRD day was held in Vietnam in 1994. This program has since gone on to achieve tremendous results. Vietnam has developed blood centers in major cities and regional and provincial blood transfusion services.



Blood collection in various forms is being organized, through mobile blood drives and using various large media campaigns, among other measures. Activities have been organized at every level nationally since 2006. Through this conference it is hoped that the sharing of lessons and experiences will help others to achieve VNRD.

### **Report on past activities**

Dr. Jun Fukuyoshi, Nagasaki University team, reported that the first meeting was held in Phnom Penh, Cambodia in November 2014. Universal access to safe blood and blood products is an essential component of healthcare provision. A resolution of the WHO urges member states to take all necessary steps to establish sustainable blood and plasma programs is the aim of achieving self-sufficiency. WHO, Cambodian National Blood Transfusion Center and Nagasaki University have collaborated to expand the participation of youth in VNRD in Cambodia since 2011, and have made significant progress owing to the efforts of university students in Phnom Penh. The meeting in 2014 was held to expand progress on VNRD and to share information and experiences among ASEAN countries to further enhance VNRD. The objectives of the meeting were to share experiences on different strategies and mechanisms for working towards self-sufficiency in safe blood and blood products based on VNRD and to review evidence, challenges and trends in donation, as well as safety, ethics, access, sufficiency and self-sufficiency in blood and blood products and to identify the need to prioritize actions to achieve this goal at national, regional and global levels.

The outcomes of the meeting were the recognition of the situations regarding VNRD of each participating country, exchange of information of national systems, strategies, mechanisms and resources of Asian countries to achieve self-sufficiency in safe blood and blood products based on VNRD, and the establishment of strong unity among participating countries for future collaboration.

### **Voluntary blood donation among youth in university – Cambodia model**

Dr. Eang Rothmony, University of Health Sciences, Cambodia, reported that seven universities in Cambodia had worked together on a campaign to promote voluntary blood donations among youth in universities, titled “Big Challenges for Great Universities.”

The campaign was composed of three main phases. Firstly, prior to the campaign many meetings were held to help promote understanding about the underlying strategy. Surveys were also implemented prior to the campaign and materials were prepared for activities. Entertainment was also planned that would attract youth.

During the campaign, operations were conducted to coordinate and facilitate all processes. Information was provided to blood donors and care provided after donation. Media coverage was also implemented.

After the campaign, meetings were held for feedback and reports were made to university leaders and the National Blood Transfusion Center (NBTC). Awareness was raised through social media and keys for success and challenges were identified. A certificate was given to all volunteers and peer education was provided for volunteers.

The key messages of the campaign were identified as “Youth, humanity and hope,” “Donating blood is saving lives,” “My heart, my blood, my nation,” and “Give blood, give hope.”

In terms of the campaign results, in response to the question “Have you ever donated blood?” prior to the campaign the response rate was only 11%, whereas after the campaign it increased to 23%.

Keys for success of the campaign were support from government and university leadership, the creation of strong teams with clear objectives and strategies, the conducting of education and entertainment activities, the planning of clear objectives and ensuring motivation.

Challenges that remain include feelings of concern among voluntary donors feeling about transparency of blood use, some donors being worried with health problems after donation or being afraid of needles and blood, or discouragement from parents and relatives. There is a general lack of awareness of the importance of VNRD.

In terms of recommendations for future activities, it will be important to increase awareness of the importance of VNRD among youth in other universities to maintain repeat donors, increase transparency in blood use to win public trust, increase the blood service availability for patients in need, and create donor recognition.

In terms of recommendations for future campaigns it is hoped that strong support from university leaders and national leaders will be provided. In addition, good collaboration and coordination between students and existing blood donor coordinators in the university is needed. Another key requirement for future success is “edutainment.” Good budget management based on existing resources is also essential.

**“Towards self-sufficiency in blood and blood products based on VNRD: Global status, challenges and strategies”**

Dr. Sek Mardy, Technical Officer – Transfusion Safety, WHO Representative Office in Cambodia, noted that the need for blood and blood products is rising. In high and middle income countries the need is driven by increasingly sophisticated medical and surgical procedures. In low-income countries the majority of transfusions are for road traffic accidents, complications during pregnancy and childbirth, and management of trauma and congenital blood disorders.

The WHO has called for increases in voluntary blood donors to save millions of lives: “The best way to guarantee a safe and adequate supply of blood and blood products for transfusion is to have a good supply of regular donations by voluntary unpaid blood donors.”

Every year 108 million blood donations are made globally and approximately half of these are made in high income countries, which account for only 18% of the global population. The blood donation rate is an important indicator for blood availability in a country. There is a marked difference in blood availability between low-income and high-income countries. The median blood donation rate per 1,000 population is 36.8 in high-income countries and 11.7 in middle-income countries. 75 countries report collecting fewer than 10 donations per 1,000 population. The age distribution of blood donors is very important for creating recruitment strategies. Proportionally there are more 18-24 year olds who donate blood in low and middle-income countries than in high-income countries. 73 countries collected more than 90% of VNRD; however, 72 countries collected less than 50% of VNRD. There has been an increase in voluntary unpaid donors by 8.6 million from 2004 to 2012 and there have also been various successes in VNRD, including in Vietnam, which increased VNRD from just one-third of total supplies to 96.2% in just 10 years.

There are many challenges in blood safety and availability. These include: lack of safe blood donors and low donation rates, weak voluntary non-remunerated blood donor programs, discarding of more than five million whole blood/red cells globally per year, stringent donor selection criteria reducing the pool of eligible donors, and an aging donor population impacting blood supply.

In terms of the risk of transfusion-transmitted infections, there is a high risk of transfusion-transmitted HIV and hepatitis B and C in developing countries. There is also limited capacity in processing and poor quality systems, relating to capacity to provide patients with the different blood components they require being limited and the absence of quality systems.

In terms of a response, it is important to improve blood safety and availability. This includes: Establishment of a national blood system with well-organized and coordinated blood transfusion services; collection of blood plasma and other blood components from low-risk, regular, voluntary

unpaid donors; quality-assured screening of all donated blood for transfusion-transmissible infections and systems for processing blood into blood products as appropriate; rational use of blood and blood products to reduce unnecessary transfusions and minimize the risks associated with transfusion; and step-wise implementation of effective quality systems, including quality management, standards, good manufacturing practices, documentation, and training of all staff.

### **Discussion**

Dr. Ngo Manh Quan asked about the results for 2015 that had been achieved in Cambodia through the university-based campaign. Dr. Rothmony responded that the campaign is ongoing and now the original students have graduated they have gone out into the community to further promote donations. New intake students are being recruited to engage in activities and now the program has become self-sustaining.

Dr. Ngo Manh Quan asked about repeat rates in the Cambodia university program. Dr. Rothmony noted that the universities rely on educational activities, because once people have a better understanding of blood transfusion they tend to repeat their donation activities. Therefore education activities are very important and efforts in this area have proved to be very effective.

Dr. Mardy noted that in 2013 when the campaign concluded, it was expected that the number of blood donations from the campaign in 2014 would be higher than 2013. However, the result was that there was no significant increase. A key question, therefore, is how to encourage students to become repeat donors.

Ms. Cecilia Tan from Singapore Red Cross congratulated Cambodia on the success of its efforts. She noted that one of the factors for success is the involvement of various stakeholders. She made a comment about sustainability and ensuring repeaters. In low and middle-income countries the number of young donors is very high, but once they join the workforce after graduation the number of donors reduces to below that of high-income countries. One possible response measure would be to encourage community corporate responsibility. It would be useful if companies could be encouraged to promote blood donations among their employees.

Dr. Truong Thi Kim Dung, Ho Chi Minh Hospital of Blood Transfusion and Hematology, noted that Vietnam has made significant achievements in recent years. Every year about 200,000 units are collected in Ho Chi Minh City, a great majority of which is from students. It is important to conduct blood donation campaigns to encourage students to participate. She asked about efforts to encourage students to engage in blood donation on a daily basis and to continue donating blood after graduating from university. She also noted that in Ho Chi Minh City there is a strategy for voluntary blood donation, which is focused on whole blood.

Prof. Miyazaki noted that in Japan there is a university student club to promote donations, which is based on completely voluntary activities. It is very important to promote education. Prof. Miyazaki noted that Mr. Takikawa would be presenting on this topic later in the meeting. In terms of blood component donation, it is important to educate the population on this topic as it would improve donation efficiency. Donors in Japan are made aware of the importance of blood components. The repeater percentage is much higher in blood component donors. The question of how to promote repeaters is a key theme for this meeting. It is important to exchange information about efforts in each country to promote whole blood donation and blood component donation.

A participant from Hanoi noted that research has been conducted on the barriers to blood donation in universities in Hanoi. It has been found that students are worried about non transparency of blood use. He asked about the type of media campaigns that are likely to be effective to promote donations.

Dr. Rothmony responded that the same concerns existed in Cambodia, because not everyone has access to information about the use of blood donated. Therefore efforts have been promoted to boost transparency. Educational seminars are implemented to enhance understanding about the

importance of blood donation. For media campaigns, Facebook is heavily used, which covers most students. In addition, student days are held, and blood donation is promoted on these days.

Dr. Mardy added to Dr. Rothmony's comment, noting that transparency of blood use has been a significant issue. Next year the focus for the blood service in Cambodia is to establish a committee that will work on efforts to enhance transparency and gain public trust.

#### *Coffee break*

#### **Japan's experience: Measures for future stable supplies in Japan – securing repeat donors**

Mr. Masahiro Takikawa, Blood Service Headquarters, Japanese Red Cross, noted that securing repeat donors is an important topic for Japan in ensuring stable supplies of blood and blood products. In 1986 400ml donations were introduced in addition to 200ml donations and since that time the proportion of 400ml donations has increased. In terms of the age range of blood donors, the number of donors in their 40s has increased, but the number of donors in their 30s has dropped off significantly. This means that there has been a 22.3% decrease in blood donation among those who were in their 20s ten years ago and who are now in their 30s now. It is important to take action to ensure that there are sufficient donors in the future. A simulation conducted by the Japanese Red Cross shows that if current trends continue there will be a shortage of 0.85 million donors in 2027. The MHLW and Japanese Red Cross have established specific mid-term goals for boosting blood donation. This program is termed "Blood Donation Promotion 2020." This program includes promoting blood donation to persons from their teens to their 30s, promoting blood donation to elementary, junior high and high school students, and promotion efforts to secure repeat donors.

A repeat donor is defined as someone who donates more than twice a year. Efforts to ensure repeat donations include a "Repeat Donor Club," as well as requests by postcard or direct phone calls. The use of phone calls to request donations is used as an effective means of eliminating temporary blood type imbalances. The postcard request method entails significant cost, and measures have been implemented to move to notifications via e-mail.

With regard to the "Repeat Donor Club," blood centers contact club members directly to request blood donations. Club members receive a specially designed donation card and information via e-mail. The Repeat Donor Club office also sends information about events. However, sometimes donors may receive multiple communications via letter, e-mail and phone call, which creates stress for the donors themselves. The new data system, which is scheduled to be put into operation in 2017, aims to streamline operations and prevent multiple communications to donors. This system will contribute to ensuring stable blood supplies in the future.

#### **Discussion**

Dr. Rothmony noted that the Repeat Donor Club is a very effective means of securing repeaters and Cambodia is also considering measures to establish a similar club. He asked about benefits of club membership in Japan and what measures are implemented to recruit members. Dr. Miyazaki responded that the incentive to join the club is the management of the donors' blood data and results. Members can access past blood donation data via the internet at any time. Dr. Rothmony asked whether providing information about blood tests raises concerns about recruiting high-risk donors. Dr. Miyazaki noted that this was not the case as screening is conducted.

Ms. Cecilia Tan noted the sharp drop-off in donations between those in their 20s and 30s and asked why this was the case in Japan. She also referred to donor stress caused by multiple communication channels and asked why social media are not more actively utilized. Prof. Miyazaki responded that the stress was caused because the three separate communication methods did not share the same database, meaning that donors were contacted on multiple occasions. This is why

a new system will be introduced by 2017 that will unify the system and ensure that donors are not contacted on multiple occasions. Dr. Fukuyoshi responded to the question about the drop-off in donors between their 20s and 30s. It is assumed that the engagement of the people in their 30s is weak. General social awareness of blood shortages is low and this is a challenge that needs addressing.

A participant from Vietnam asked which method of communication is most effective and also asked about the success rate of these methods of communication. Prof. Miyazaki responded that postcard or letter has a response rate of 30-40%, whereas the phone call method results in a response rate of 70%. However, the phone call method is only used for rare blood groups or to correct a temporary imbalance in blood type needs.

A participant from Vietnam asked about the system for donor care. He asked whether the system is operated by the Red Cross or by blood centers. He also asked about methods to promote repeaters if they do not respond to initial communications, either by mail or phone call. Prof. Miyazaki responded that the blood donation centers are operated by the Red Cross. With regard to requests, if potential donors do not respond to two requests, no further requests are made, in order not to create undue stress for donors.

### **Case studies in Asian countries: “Country reports and their efforts and experiences in increasing blood donor repeaters”**

#### **Malaysia: Marketing strategy for increasing regular blood donors**

Dr. Wooi Seong, National Blood Centre, Malaysia, noted that blood donation in Malaysia is by VNRD, with 99-100% of donations being made by VNRD, according to WHO statistics. In 2014 close to 700,000 donations were received and in terms of the proportions of regular and new donors in Malaysia, regular (repeat) donors account for approximately 60% of the donor base. Different states around the nation perform differently and have various challenges. Kuala Lumpur accounts for 25-30% of all donations. The National Blood Centre of Malaysia has seen blood collection volumes steadily rise, from 70,000 donations in 1998 to almost 180,000 donations in 2014. The proportion of repeat and new donors was approximately 50:50 in 2008 and it was recognized that efforts needed to be made to retain donors. Efforts since then have seen the proportion of repeat donors rise to 62% in 2014. One-quarter of all donations are from students. The majority of blood donors have previously been in the 18-24 year group. However, in 2014 there was a shift in age distribution of donors from the 18-24 year group to the 25-34 year group. This demonstrates that recruitment drives and awareness campaigns that were started early in younger year groups translates into greater volumes of donations in older age groups in future years.

Conventional marketing strategies that are used include pamphlets, posters, banners, newspapers, radio and television. Over the years it has been realized that marketing strategies evolve and focus has shifted to activities that educate and raise awareness, which is one of the keys to blood donation marketing strategies. There is a need to inculcate blood donation as a culture and lifestyle and new donors need to be encouraged to become regular donors. It is important to create a pleasant experience before, during and after blood donation. Moves are being implemented to transform from a hospital service to a hospitality-oriented service, which aims to create a positive image of blood donation. There is also a need to engage and collaborate with blood donors and ensure that donation is convenient and accessible for all.

Specific marketing activities that have been launched in recent years include: calling donors by phone, using websites and social media, and creating blood donation mobile apps. Another measure that has been implemented to boost donation is the extension of National Blood Centre opening hours. Blood donation talks are conducted in schools, colleges, universities and offices. Blood donation campaigns are implemented regularly in similar areas. Corporate social responsibility (CSR) is also utilized as a means of encouraging companies to promote donation

among their employees. Celebrities are also recruited to act as figureheads for donation activities, including at such events as World Blood Donor Day. Malaysia has also created Whole Blood Donor Day and Apheresis Week as other events, which are timed to coincide with seasons when blood stocks are usually running low. In terms of CSR, one of Malaysia's largest malls has agreed to provide space for a blood donation suite within the mall, which is run by the National Blood Centre. This provides convenience to shoppers. Also convenient for donors is the blood donation bus, which attracts further donors. Educational and study tours to the National Blood Centre are also promoted.

### **Singapore: Increasing donor retention through marketing initiatives**

Mr. Robert Teo, Blood Donor Recruitment Programme, Singapore Red Cross noted that the blood donor population makes up less than 2% of Singapore's residential population, which is a challenge for the recruitment program. First-time donors make up 29% of the donor pool, with repeat donors accounting for 39% of all donors. Demand for blood and blood products is likely to increase in the future, as the society of Singapore ages. More than 22,000 units of blood will be needed annually by 2030. In terms of the total number of donors, there were 70,824 donors in 2013 and 68,868 donors in 2014. However, if the first-time donors in 2013 could have been retained this would have ensured an increase in the following year's repeat donors. A key challenge, therefore, is to boost efforts in retaining repeaters.

One of the difficulties in retaining donors is competition with other charities. The number of registered charities in Singapore has risen significantly over the previous decade. Blood donation is also well-established in Singapore and this may lead to a tendency for younger people to consider that blood donation is already successful and be therefore more inclined to support other charities.

Challenges for blood donation therefore include attrition of first-time and regular donors and the crowded charity landscape, in addition to accessibility of blood donation sites. The response to these challenges is to highlight the importance of blood donation through emotional engagement, ensure accessibility of blood donation aligned with donor lifestyle, show appreciation for donors while installing a regular-donation mindset, and engage donors as advocates.

Marketing activities and initiatives include the creation of thank-you videos and printed ads. The purpose of these videos is to achieve emotional engagement and highlight to donors the real-life impact of their donations and highlight to non-donors the need for blood by people like themselves. Another initiative is the issuance of a thank-you card to donors. The purpose of this card is similarly to create emotional engagement and instill a regular donation mindset. This card conveys to donors the appreciation from beneficiaries and reminds them of their next donation date. The card features different beneficiaries, with a mix of circumstances and conditions.

Another marketing initiative aiming to retain donors is to provide giveaways. The purpose of this initiative is to express appreciation to donors and instill a regular donation mindset. This Christmas season a series of fridge magnets will be distributed to donors as a thank you gift. Other seasonal events that are focused on include Halloween, Chinese New Year, Hari Raya and Deepavali, all with the purpose of aligning donation with donor lifestyles and expressing appreciation to donors.

When reaching out to youth donors the Red Cross Connection app has proved to be effective, including message alerts and event updates, as well as a blood-stock impact tracker. The blood-stock impact tracker makes it possible to target specific donors in response to need.

The #Needleface campaign in Singapore is an initiative to create a regional/global success story like the Ice Bucket Challenge. The campaign shows videos of the faces of people when having a needle stuck in their arm for the first time and is intended to create online buzz about the blood donation campaign in Singapore.

## **Discussion**

A participant from Vietnam asked about the Singaporean marketing campaign and the content that is used to persuade donors to donate blood and the way different donors are targeted. She asked which marketing activity is the best one to retain donors.

Mr. Teo responded that emotional engagement is very important, but the content depends on the target audience. For example, in schools, the focus is on youth-friendly language that is not overloaded with medical terms. It is important to tailor content for corporate or religious organizations. The focus on corporate and religious organizations is CSR, namely encouraging these organizations to make a contribution to society by helping with blood donations.

Dr. Seong responded that in the case of Malaysia, media content will depend on the target group. For example, when targeting university students it is important to focus on the fun side of donation. It is important to engage with student leaders. It is also important to use media to dispel concerns about blood donation and make it more accessible.

Ms. Tan asked about the percentage of retention for new donors in Malaysia. Mr. Seong responded that although he did not have the specific figure, the National Blood Centre is working on ways and means of quantifying retention rates, which would provide a good means of evaluating the effectiveness of media campaigns.

Dr. Truong Thi Kim Dung thanked Malaysia and Singapore for their presentations, noting that the two countries are implementing very positive and dynamic messages that are accessible to young people. She also highly evaluated the initiative by Singapore to provide thank-you cards from beneficiaries to donors. The Repeat Donor Club initiative in Japan is also interesting. In Vietnam there are also clubs for repeat blood donors. She asked if there are regular meetings for club members in Japan.

Prof. Miyazaki responded that the virtual donor club connects everyone via mail or SNS. Another initiative is the Action Club, which brings together university students for a major meeting once a year.

A participant from Cambodia asked Malaysia about challenges currently being faced and asked Singapore about the kind of blood products for which there is demand.

Dr. Seong responded that challenges being faced include shortages of blood and it is therefore important to build up strategies to build up blood reserves at seasons when shortages are predicted. Different marketing tools exist and in Malaysia the e-mail method has not proved effective (less than 5% repeaters). It is important to ensure that out of the limited budget available a good proportion of funds is targeted for donor retention, in addition to recruitment. It is important to be creative and innovative and move with the times and technology.

Mr. Teo responded the broad breakdown of blood usage in Singapore is 31% general surgery, 25% general medical, 14% orthopedic, 14% cardiothoracic, 10% hematology, 6% accident and emergency.

## *Lunch*

### **Case studies in Asian countries (continued)**

#### **Cambodia: Country report and efforts and experiences in increasing repeater blood donors**

Dr. Hok Kimcheng noted that with a population of approximately 15 million the donation rate in Cambodia is relatively low, with three donations per 1,000 population. The system is in transition,

with one public National Blood Transfusion Centre (NBTC), 21 public provincial centers and one hospital blood bank. The five-year national strategic plan is based upon a comprehensive blood system assessment (2011/12) and provides a system-wide technical framework for blood program delivery. The National Blood Program is guided by a five-year national strategic plan 2013-17.

In terms of hospital and patient blood management, key achievements in 2013 and 2014 include the formulation of national clinical guidelines, and training for trainers, as well as the transfer of programs to local ownership.

In terms of community and donor motivation, key achievements in 2013 and 2014 include the formulation of a national strategy for donor recruitment, the production of consistent branding and signage, as well as demand and supply planning and mobile collection planning.

In terms of creating a nationally coordinated blood service, an 18-month lab plan for testing, components, quality, cold chain, equipment and staff training have been implemented, and automated testing platforms have been selected. Efforts have been made to improve laboratory work flow, including serology and samples. A new facility funded by US PACOM has opened in 2015 and a national center in Phnom Penh and two regional centers in Kampong Cham and Siem Reap are also due to be opened.

In terms of key indicators, VNRD across the entire country stood at 33.6% in 2014, down slightly from 2013. The regular donor rate stood at 10%. Infectious disease markers are gradually reducing, going down from 8.4% in 2012 to 6.1% in 2014.

Blood demand is increasing year by year, by approximately five to six percent. With regard to VNRD management and strategy, the objectives are to work with provinces to identify barriers to VNRD and find solutions. In addition the strategy calls for the establishment of provincial voluntary blood donation steering committees. These committees will work to convert family replacement donation (FRD) to VNRD and promote VNRD targeted at youth. Another key point in VNRD management and strategy is to incorporate VNRD education into the national education curriculum, including B2C engagement with the Ministry for Youth, Education and Sports.

The NBTC is working to improve transfusion safety, with a focus on donor selection, using revised donor selection guidelines. Pre-donation screening is also being enhanced, with an improved donor questionnaire and staff training. Improved testing algorithms are also being used in the laboratory environment.

A very important current challenge is to recruit and retain VNRD and blood donation campaigns are generally successful in boosting donations when they are implemented. However, the bigger challenge is to secure repeat blood donors. The goal of the NBTC is to achieve a consistent decrease of family replacement donors over time and corresponding increase in VNRD to meet demand. Management activities include stock management, education of NBTC and hospital staff, and education of family replacement donors to return as voluntary donors.

In collaboration with the union of Youth Federations of Cambodia the “Youth contributions to Blood Donation Promote Towards 100% VNRD by 2020” program is to be launched from 2016. A blood donor club will be established in 2016.

In terms of next steps for Cambodia’s blood program, the aim is to continue to implement the strategic plan, identify barriers to implementation, and work with local stakeholders to develop sustainable solutions.

## **Discussion**

Ms. Tan noted that 2020 is five years from now and achieving 100% VNRD will be difficult to achieve in that time. She asked what specific initiatives were being planned to achieve the target of 100% VNRD by 2020 in Cambodia. Dr. Hok responded that strategic plans are reviewed each year.



The mission of the Union of Youth Federations of Cambodia is to promote education on healthcare and healthcare service delivery. Although the plan to achieve 100% VNRD is very ambitious, Dr. Hok noted that it is important to have dreams.

Dr. Seong noted that the statistics that have been shown for Cambodia are very impressive, showing consistent improvement. Dr. Hok responded that demand for blood is increasing every year and the NBTC is seeking to boost donations over the next few years.

### **Lao PDR: Country progress report on Lao blood services**

Mr. Phengthong Banchanthavong, Lao Red Cross National Blood Transfusion Centre (NBTC), reported that the Lao Red Cross National Blood Transfusion service has been carrying out its blood program since 1995, which plays a leading role in providing safe and adequate blood supply. It is fully responsible for blood donor recruitment, retention, collection, processing, testing and supply of blood and blood components to hospitals. The blood program is implemented at one national center, three regional blood centers, 13 provisional blood centers and 17 blood storage units in district hospitals and six military hospitals.

In terms of blood donation in 2014 the NBTC collected 53.16% of the total, with provincial centers collecting 46.84%. Students account for 56.28% of all donations. Of total donations, 65% are made by male donors, significantly higher than the donations by female donors.

An Action Plan for 2014 set a mobile blood campaign target of 35,200, which was narrowly missed (35,017 units). However, in terms of training activities, a total of 119 donor recruiters were trained at the provincial level (supported by Singapore Red Cross), 366 youth were trained from 30 high schools and three universities in Vientiane. In addition, 26 annual meetings with target groups worked to set up a plan and calendar for mobile blood collection.

In terms of donor recruitment and retention activities, annual planning for establishing a plan and calendar for blood donor recruitment is conducted at the central and provincial level. Meetings are held with key focal points to plan activities before conducting mobile blood donation. Blood campaigns are conducted on special days, such as Red Cross Day, World Blood Donor Day and Lao national holidays.

Issues and challenges being faced include: increasing demand of blood supply due to increases in population and development in cities; the need to provide health products and other supporting materials quickly and efficiently; systematic screening of every blood unit; high-quality preparation of blood products; and the need to build infrastructure and energize resource mobilization.

A future plan is to continue to work to improve the health status of the Lao population by providing sustainable access to safe and adequate blood supply; meeting the WHO recommendation of at least 1% of total population donation per year, as well as 100% VNRD; and implementing quality management of blood services at all levels. Other areas of the action plan include strengthening provisional blood centers to provide safe and sufficient blood supply; creating additional blood storage units at the district level; and promoting blood donation via social media.

### **Discussion**

Ms. Tan noted that the number of repeat donors had increased very significantly. She asked how that retention of repeat donors was achieved. Mr. Phengthong Banchanthavong responded that staff are recruited and these staff are well motivated to recruit people, which has proven to be very effective.

### **Philippines: Blood services in the Philippines – how to increase repeat donations**

Dr. Christine Monina M. Nalupta, Philippine Red Cross, noted that the mission of the National Voluntary Blood Services Program is to be a national and efficient networking of blood service

facilities based on voluntary blood donation that will ensure safe, adequate, timely and accessible blood supply and the rational use of blood in the Philippines through advocacy, professional education and research. The service is run under a tripartite organization, consisting of the Department of Health, Philippine Red Cross, and the Philippine Blood Coordinating Council. Blood service facility categories are: blood center, blood banks, blood collecting units and blood stations. The Philippines Red Cross has as its motto: "To become the leading provider of safe and quality blood in the Philippines."

There has been a steady increase in general blood donation. In order to ensure blood safety, centralized blood testing is implemented, including a platform of five TTIs, with nucleic acid testing in the pipeline. The VNRD rate is 84%. In 2014 repeat donations stood at 79.83% of the total.

With regard to the question of how to increase repeat donations, the power of cyber-media, radio and television all need to be harnessed. The Philippines is engaged in partnership with TV/media personalities, who are being recruited as "Blood Governors"

Strategies to advocate and promote VNRD include common strategies, such as letters, phone calls and e-mails, in addition to newer strategies in information and communication technology, such as SMS broadcasts and viral marketing. Viral marketing is the latest craze and has high networking penetration, with a personal touch, with the power to link "friends of friends of friends." On the day that the SMS service went live, more than 380,000 followers tweeted about it. In November a national blood donation drive will again be implemented using this service.

Another strategy is the partnership with colleges and universities titled PLEDGE 25, or otherwise known as the Red Cross Youth (RCY). Under PLEDGE 25 programs members are aged 18-25, who pledge to regularly donate up to four times a year. PLEDGE 25 partners are the Commission on Higher Education, Sanggunian KABATAAN Federation, and the Philippine Association of Colleges and Universities. This is a key project that is used to promote donor recruitment and retention partnership at work.

The RC143 (community) program aims to recruit 1+43 members in every village, school and workplace to mobilize the power of humanity. As RC143 Blood Service Volunteers the members are expected to advocate and recruit voluntary unpaid blood donations, become regular and standby blood donors when needed, organize a weekly village-based voluntary mobile blood donation, and recruit blood Samaritan donors.

A government project is the Advocacy and Promotion of VNRD to use school children as blood donation advocates. The aim of the program is to integrate voluntary blood donation in the curricula of primary and secondary school students.

The Philippines celebrates World Blood Donor Day each year and also organizes a blood donation month. In order to have better recruitment capabilities it is important to gain various types of certification. The Philippine Red Cross has gained ISO9001 certification for its quality management system.

## **Discussion**

A participant from Vietnam asked about the Philippines experience in implementing activities across multiple islands and how disaster response is made. Dr. Nalupta responded that the Philippine Red Cross has 82 blood service facilities, each situated strategically. Although the Philippines is an island country, each region is represented by a Red Cross blood supply station. If there is shortfall in a certain location, the national Red Cross blood inventory system makes it clear which facilities are reaching a critical level.

Dr. Seong observed that RC143 is an important example of community involvement. He noted, however that blood collection is still less than 1%, and asked whether the Philippines is self-sufficient. He also asked about response to disasters and how the system copes. Dr. Nalupta

responded that the Red Cross had a hard time managing its logistics in the immediate aftermath of the typhoon disaster the previous year. It took five days until a blood products/blood bank refrigerator and generator could be provided to the disaster zone, due to space restrictions on cargo aircraft. It was only the Red Cross that had blood facilities in Leyte in the post-disaster environment. With regard to the poor blood collection rate of less than 1%, although there is certainly room for improvement, there are no reports from the government that people are dying due to lack of blood supply.

### **Vietnam: Self-sufficiency of blood and blood products based on VNRD in Vietnam**

Dr. Ngo Manh Quan, NIHBT, reported that blood collection has achieved significant improvements in Vietnam in recent years. The percentage of VNRD is 96.24%. Repeat blood donors are a challenge for Vietnam, and the current proportion of total donors is about 31% for repeaters. TTIs screening is also demonstrating improved results year by year. For example, in 2006 the percentage for HBsAg – HBV stood at around 7%, whereas in 2014 the percentage had fallen to 2.11%.

Before 1994 less than 15% of blood demand was being met and more than 90% of blood was taken from paid donors, with no TTIs screening. In the space of little over 20 years this situation has improved to the current situation today, where over 96% of blood is sourced through VNRD. A national steering committee and stakeholders also take an active role in VNRD activities. The National Steering Committee on VNRD oversees provincial, district and commune-level steering committees, which collaborate with regional, area and hospital blood banks, as well as other institutions, including universities.

In terms of the impact of centralization of blood service, following the establishment of five regional blood centers, 10 area blood centers and 70 hospital blood banks, the rate of VNRD by NIHBT has risen to 98.17% in 2014. Challenges that remain include the need to find solutions to stabilize monthly blood collection. Seasonal campaigns are planned that coincide with festivals and holidays, including the Pink Spring Festival. A nationwide campaign is the “Red Journey,” which is implemented across the country. Other massive blood collection events are held throughout the year, resulting in increases in collection results. Vietnam also holds events on June 14, World Blood Donor Day. Various volunteers are also encouraged to participate in VNRD programs.

In terms of the plan for the future, the overall target for 2020 is to achieve donations from 2% of the population, with VNRD at 100%. This will entail efforts to recruit more new donors and retain donors, establish blood donation laws, organize campaigns, and improve donor services. Another vital factor is to expand collaboration and boost regional and international linkage and exchange.

*Coffee break*

### **NIHBT Tour**

The delegates toured NIHBT. The delegates were split into three groups, with each group visiting the Department of Recruitment and Planning, the Blood Donation Department, the Blood Component Department and the Blood Screening Department of NIHBT.

### **Discussion & closing of case study session**

Prof. Miyazaki had a question for Dr. Ngo Manh Quan. He noted that Dr. Ngo had detailed specific campaigns at certain times of the year. He noted that in such cases it is likely that there would be huge spike in the space of one or two days and asked how this spike is averaged out.

Dr. Ngo Manh Quan responded that it is at these specific times of the year that severe shortages generally occur. These efforts are also aimed at promoting donor retention. These efforts generally prove effective and help to cover any shortfall and do not usually create issues of stock management.

Dr. Seong and Ms. Tan asked Dr. Ngo Manh Quan about the Pink Spring Festival, noting that there was a significant deferral rate. Dr. Ngo Manh Quan responded that this was due to the sheer volume of donors on the day. Prof. Tri added that prior to 2008 there was a severe lack of blood, particularly around national holiday periods. He noted that the festival was created as a means of promoting blood donations, but blood donation is not the only purpose, nor are people obliged to give blood. The first purpose of the festival is for people to enjoy themselves and also to attract potential donors to the event. Similar festivals are held in regions around Hanoi, which have improved the blood collection situation in regional Vietnam.

A participant from Vietnam noted that the Chinese New Year festival is also held in Vietnam. He asked about the situation in Laos, Cambodia, Malaysia, etc., and whether they have similar challenges at festive times during the year.

Dr. Seong noted that shortages used to be faced during major festive seasons in Malaysia, including Chinese New year and Hari Raya. This was also compounded by the fact that these festive periods coincide with school holidays. Strategies that have been implemented include forecasting of blood stock levels over festive periods. Blood inventory management is very important. In addition, efforts are made to promote donations prior to festive seasons, such as "Donate a pint of blood before you go home for the holidays." As noted in the Singapore presentation it is important to engage people emotionally.

Mr. Phengthong Banchanthavong noted that his center focuses on activities to collect blood prior to festive events such as new year, or prior to school holidays. More efforts are needed to promote such recruitment drives via SMS, etc.

Dr. Hok noted that Cambodia has many national holidays throughout the year, making it difficult to collect blood during festive periods. Prior to each public holiday the National Blood Transfusion Centre (NBTC) makes plans to dispatch mobile blood collection units as a means of supplementing stocks. In terms of the current situation, efforts are being made to improve collection activities on weekends, in response to requests from stakeholders.

Prof. Tri referred to the presentation by Prof. Rothmony in the morning session about the collaboration among seven universities in Phnom Penh and asked about the advantages of such collaborative activities.

Dr. Rothmony responded that the collaborative activities among the seven universities worked so well because efforts were implemented prior to the launch of the campaign. Preparations were fully implemented to provide education and awareness about the importance of blood donation. As blood donations can decrease during school and university holidays it is important to stress to students the importance of continuing to donate regularly (four times a year for men and three times a year for women).

Prof. Tri noted that students are extremely receptive to the importance of blood donation and understanding of the purpose of collecting blood. It is therefore important to work to educate students and gain their trust with regard to the blood donation system.

Prof. Miyazaki noted that Malaysia, Laos and Cambodia also have shortage periods, similarly to Vietnam, but they make specific planning efforts to take advantage of their particular advantages to overcome the shortfalls. He noted that the experience of these countries demonstrates that there are various solutions to issues faced and innovation and creativity are important requirements.

Prof. Miyazaki and Prof. Tri thanked delegates and closed the first day of the meeting.