Production of Quality Blood Components and Commencement of External Quality Assessment Scheme

Report of an Intercountry Workshop
Bangkok, Thailand, 9–20 December 2002

WHO Project No: ICP BCT 001

World Health Organization
Regional Office for South-East Asia
New Delhi
April 2003
CONTENTS

Page

1. INTRODUCTION .................................................................................................... 4

2. OBJECTIVES............................................................................................................. 4

3. INAUGURAL SESSION ............................................................................................. 5

4. PROCEEDINGS........................................................................................................... 5

   4.1 Pre-workshop Assessment of the Participants .................................................... 5
   4.2 Mechanics of Workshop ................................................................................... 5
   4.3 Summary of Subjects Covered .......................................................................... 5
   4.4 Post-workshop Assessment of the Participants ................................................... 6

5. VALEDICTORY SESSION .......................................................................................... 6

6. RECOMMENDATIONS............................................................................................ 6

   6.1 To Member Countries ....................................................................................... 6
   6.2 To WHO .......................................................................................................... 7

Annexes

1. List of Participants .................................................................................................... 8

2. Programme of Work ............................................................................................... 11
1. INTRODUCTION

Blood transfusion is an essential part of modern health care. Used appropriately, transfusion can save life and improve health. However, it always carries potential risks for the recipient and should be prescribed only for conditions with significant potential for morbidity and mortality that cannot be prevented or managed effectively by other means such as use of haematinics in anaemias and that of crystalloids and colloids as volume expanders.

Even in conditions warranting use of blood, it can be optimally utilized by the use of specifically required components instead of whole blood. Data from the countries of the SEA Region show that nearly 78% of the blood collected is used as whole blood, while only 22% is converted into components. In developed countries such as the United Kingdom, 100% of collected blood is converted into components. Conversion of collected blood into various components is an extremely effective way of overcoming the shortages of blood in developing countries. This also ensures safety for the recipient.

While the need for blood components is being realized in Member Countries of the Region, their capacity to produce these components has been limited and needs to be enhanced. Accordingly, a two-week intercountry workshop was organized at the National Blood Centre, Bangkok, Thailand from 9 to 20 December 2002. Fourteen participants from seven Member Countries of the South-East Asia Region attended the workshop.

2. OBJECTIVES

The objectives of the Workshop were as follows:

(1) To assess the status of component production and organization of External Quality Assessment Scheme (EQAS) in participating countries;
(2) To impart training on production of blood components;
(3) To orient about the quality assurance in component production;
(4) To produce material for use in EQAS and its distribution, and
(5) To analyze the results of EQAS.

3. INAUGURAL SESSION

The Workshop was inaugurated by Dr Rachanee O’Charoen, Director of the National Blood Centre, Thai Red Cross Society. She welcomed the participants and emphasized the importance of the production, quality control and clinical use of blood components.

4. PROCEEDINGS

4.1 Pre-workshop Assessment of the Participants

A pretest with 21 multiple-choice questions was used to assess the pre-workshop knowledge of the participants. Each topic consisted of three questions. Participants were given 30 minutes to provide answers to these questions on the first day before the workshop began. The pretest results showed that only 5 (35.7%) participants scored more than 50% marks, none of these scored more than 60 percent.

4.2 Mechanics of Workshop

The main aim of the workshop was to provide the participants with the skills and knowledge about the production of quality blood components and clinical use of blood components. The workshop was largely in the format of short presentations, case studies, practices on blood component preparation to enhance better understanding on the clinical use of blood and how to organize a successful blood component programme.

The participants visited all sections of the National Blood Centre and the Chulalongkorn Hospital Blood Bank to see how to work at the user’s end.

4.3 Summary of Subjects Covered

First week

The major objective of the activities in the first week was to provide knowledge on clinical use of blood components, equipment needed in the
preparation of blood component and material for EQAS, and storage of blood component. Other important topics covered included: quality control in blood component, awareness of quality control in blood component preparation/storage/issue/transportation, donor selection, blood collection, infectious markers screening, haemapheresis and interpretation of results of EQAS.

**Second week**

In the second week, participants were provided with hands-on training. Participants were mainly engaged in practice in the preparation of blood component and EQAS material, spending most of their time at the blood component preparation section.

**4.4 Post-workshop Assessment of the Participants**

The same test with 21 multiple-choice questions (five choices) that was used to assess the pre-workshop knowledge of the participants was administered on the last day. The result revealed a significant improvement with all the participants scoring more than 50% marks. Eleven (78.6%) of these scored more than 60 per cent marks, seven of these scoring more than 70 percent marks.

**5. VALEDICTORY SESSION**

The valedictory session and certificate presentation ceremony were chaired by Mr. Phan Wannamethee, Secretary-General of the Thai Red Cross Society, wherein Prof Zeyar Htun from Myanmar and Dr Habibul Islam from India expressed their gratitude, on behalf of the participants, to WHO and to the National Blood Centre for arranging the training course.

**6. RECOMMENDATIONS**

**6.1 To Member Countries**

(1) They should make the utmost use of the knowledge and experience gained from the workshop to establish and develop their blood component preparation units.
(2) An appropriate infrastructure should be created so that components can be separated from the collected blood and quality of separated components is assured.

(3) The prescribers of blood should also be oriented in proper use of components.

(4) Staff working in production units should be trained/oriented in quality assurance of components and EQAS material.

(5) EQAS should be commenced with indigenously produced material to support quality systems in blood centers.

(6) National Blood Centre, Bangkok, Thailand should be approached for any technical support and trouble shooting in component separation and preparation of EQAS material.

6.2 To WHO

Technical support should be continued to all Member Countries in production of quality blood components and material for EQAS as well as rational use of blood.
Annex 1

LIST OF PARTICIPANTS

Bangladesh
Dr Shameem Hyder
Asst Professor of Blood Transfusion and DPM
Safe Blood Transfusion Programme
Dhaka Medical College Hospital
(near Emergency Dept)
Dhaka
Tel. 8802 9668781
     8802 8829493
     (Line Director Hospital Services)

Dr Mohammad Rafiqul Haque
Medical Officer, Blood Bank
Khulna Medical College Hospital
Khulna
Tel. 88 041 762066
Fax 88 041 760350

Bhutan
Mr Dorji Phuntsho
Senior Laboratory Pathologist
Jigmi Dorji Wangchuk
National Referral Hospital
Thimphu
Tel. 001 975 02 323812
Fax 001 975 02 323812
E-mail Dorjiphuntshok@yahoo.com

India
Dr Umendra M Sharma
Resident Pathologist/Blood Bank Incharge
Gandhi Medical College &
Associated Hamidia Hospital
Bhopal - 462001
Tel. 001 91 755 542202 (R)
      001 91 98270 90506 (M)
      001 91 755 540768 (O) PP
E-mail drumendra@hotmail.com
Fax 001 91 755 541376

Dr Habibul Islam
Head, Blood Bank
Guwahati Medical College
Guwahati
Tel. 91 361 2528417
Fax 91 361 2620524
Residential Address:
10, Navagiri Road, Chandmari
Guwahati - 781003
Assam
Tel. 91 361 2663253

Dr VS Minhas
Incharge, State Blood Bank
D.D.U. Shimla and
State Programme Officer (Blood Safety)
HP State AIDS Control Society
38 Block, SDA Complex
Shimla - 171 009
Tel. 01 77 221608, 258940
Fax 01 77 225857
E-mail hpsacsshimla@yahoo.com
     usminhas@yahoo.com

Indonesia
Ms Farida Netty
Head of Blood Component Production Section
Central Blood Transfusion Services
Indonesia Red Cross
Jakarta
Tel. 62 21 7815465-68
Fax 62 21 7815470
E-mail cbts@cbn.net.id
    utdp@cbn.net.id
    pmi@cbn.net.id

Dr Yudiartini
DKI Jakarta Blood Transfusion Unit
Jakarta
Tel. 62 21 3906666
Fax 62 21 3101107
Dra Frida Tri Hadiati  
Head of Section of Diagnostic Product Evaluation  
National Agency of Drug and Food Control  
R.I. Jakarta  
Tel. 62 21 4245459, 4244755  
Fax 62 21 4243605  
E-mail penilaianalkes@pom.go.id

**Myanmar**

Prof Zeyar Htun  
Pathology Department  
Mandlay General Hospital  
Mandlay  
Tel. 02 39001 to 39005 ext. 228  
Mobile hand phone (GSM) 09 2000 520  
Residential address  
Room 7, Professor Q urter  
Corner of 30th & 70th street  
Chan Aye Tharsan township  
Mandlay  
Tel. 02 39060

**Nepal**

Mr Kedar Prasad Karanjit  
Technical Officer  
Nepal Red Cross Society  
PO Box 1400  
Kathmandu  
Tel. 225344, 229344  
Fax 977 1 271915

Mr Prem Man Byanjankar  
Senior Technician  
Nepal Red Cross Society  
PO Box 1400  
Kathmandu  
Tel. 225344, 229344  
Fax 977 1 271915

**Sri Lanka**

Mr K Chandrasekaran  
MLT – Central Blood Bank  
National Hospital of Sri Lanka  
Colombo  
Tel. 001 94 1554755  
Fax 001 94 1554755

Mr SAS Fonseka  
MLT – Central Blood Bank  
National Hospital of Sri Lanka  
Colombo  
Tel. 001 94 1554755  
Fax 001 94 1554755

**Temporary Advisers**

Dr Rachanee O’Charoen  
Director  
National Blood Centre  
Thai Red Cross Society  
Henri Dunant Road  
Bangkok 10330  
Thailand  
Tel. 662 2532802  
662 2513111, 2524106-9 ext. 112  
Fax 662 2555558  
E-mail rachanee@redcross.or.th

Dr Soisaang Phikulsod  
Deputy Director  
National Blood Centre  
Thai Red Cross Society  
Henri Dunant Road  
Bangkok 10330  
Thailand  
Tel. 662 2513111, 2524106-9 ext. 156  
Fax 662 2555558  
E-mail doctorsoi-redcross@hotmail.com

Dr Pimol Chiewsilp  
Quality Manager  
National Blood Centre  
Thai Red Cross Society, Henri Dunant Road  
Bangkok 10330  
Thailand  
Tel. 662 2513111, 2524106-9 ext. 191  
Fax 662 2555558  
E-mail pimol@redcross.or.th

Prof Parttraporn Isarangkura  
Consultant  
National Blood Centre  
Thai Red Cross Society, Henri Durant Road  
Bangkok 10330  
Thailand  
Tel. 662 2513111, 2524106-9 ext. 152  
Fax 662 2555558
Annex 2

PROGRAMME OF WORK

9 December 2002

0830–0900 hrs Registration

0900–0915 hrs Opening Ceremony Dr Rachanee

0915–0945 hrs Pre-test Mrs Kessiri

0945–1045 hrs Clinical use of blood components I Prof. Pimol

1115–1200 hrs Clinical use of blood components II Prof. Pimol

1300–1330 hrs Equipment needed in blood component preparation and storage Mrs Aroonrat

1330–1430 hrs Blood component preparation I Mrs Aroonrat

- Acceptance criteria of blood units for blood component preparation
- Specifications of blood components
- Blood component preparation

1500–1630 hrs Case study for blood component therapy I Prof. Parttraporn

11 December 2002

0900–1015 hrs Quality control in blood component Mrs Pintira

- Cellular components - packed red cell, platelet concentrate
- Plasma components - fresh frozen plasma, cryoprecipitate, cryo-removed plasma

Page 11
Report of an Intercountry Workshop

1030- 1200 hrs Demonstration: Quality Control Laboratory Mrs Pintira

1300- 1400 hrs Techniques in blood component preparation Mrs Aroonrat

1400- 1630 hrs Practice: Blood component preparation I Mrs Aroonrat Mr Piyamet Ms Warunee

12 December 2002

09.00- 10.15 hrs Awareness of quality in blood component preparation/storage/issue/transportation Prof. Pimol

1030- 1100 hrs Blood collection Mrs Juree

1100-1200 hrs Testing Mrs Sineenart
- ABO and Rh (D)
- Antibody screening
- TTI
- Transportation of blood units prior to blood component preparation
- Inspection of finished product
- Labeling, storage, issue

1300- 1345 hrs Donor selection Dr Soisaang

1345- 1630 hrs Practice: blood component preparation II Mrs Aroonrat Mr Piyamet Ms Warunee

13 December 2002

0900- 1015 hrs Hemapheresis Ms Pawinee Ms Somjai

1030- 1200 hrs Hemapheresis (continued)

1300- 1400 hrs Case study II Prof. Pimol

1400- 1630 hrs Practice: blood component preparation III Mrs Aroonrat
**16- 19 December 2002**

0900- 1630 hrs  
Practice: blood component preparation IV  
Mrs Aroonrat

Group discussion  
Mr Piyamet  
Ms Warunee

**20 December 2002**

0900- 1200 hrs  
Practice: blood component preparation V  
Mrs Aroonrat

Group discussion  
Mr Piyamet  
Ms Warunee

1300–1330 hrs  
Post test  
Mrs Kessiri

1330–1430 hrs  
Conclusion  
Prof. Pimol

1500–1600 hrs  
Certificate Presentation and Closing Ceremony  
Dr Rachanee