



DONOR BLOOD SAFETY AND QUALITY: AN INTERNATIONAL TRAINING PROJECT

SATYBALDIEVA A.¹, KARABAEV B.¹, MERK G.², WESSEL-ELLERMAN S.²,
OSMONOVA A.³, NAZARETYAN M.^{4*}

¹ Republican Blood Center, Bishkek, Kyrgyzstan

² EPOS Health Management, Bad Homburg, Germany

³ EPOS Health Management, Bishkek, Kyrgyzstan

⁴ EPOS Health Management, Yerevan, Armenia

Received 12/12/2013; accepted in final form 1/30/2014

ABSTRACT

Provision of transformative learning programs for specialists in blood banking is among the main prerequisites to secure safety and quality of donor blood.

Under the human immunodeficiency virus / acquired immune deficiency syndrome (HIV/AIDS) Prevention Program II "Safe Blood Transfusion" project and with the financial support of the German Development Bank (Kreditanstalt für Wiederaufbau) and EPOS Health Management consulting company a special training program curriculum in blood safety and quality for blood banking specialists has been developed since 2011. In 2012-2013 three training courses were delivered.

Implementation of this educational program was successful in forming the qualified cohort of blood banking managers with updated information, appropriate skills and professional capacities in effective quality management and abilities to transfer the gained knowledge to the staff for securing safety of donor blood processing, storage and delivery in their respective organizations.

Keywords: *safe blood, quality, professional development, transformative learning, international experience.*

The progress in dynamic development of health care services and broadening the spectrum of the specialized medical aid in the Kyrgyz Republic requires higher level of blood transfusion services to meet the needs of hospitals and medical centers in blood and blood products. At the same time it remains highly important to minimize the risk of transfusion-transmitted infections, such as hepatitis B, hepatitis C, human immunodeficiency virus /acquired immune deficiency syndrome (HIV/AIDS), and syphilis.

In March 2012, the Government of the Kyrgyz Republic adopted a special document: "Blood Services Development Program in 2012-2014" depicting the framework and basic pathways designed to establish and maintain the national system of safe, adequate, and quality blood supply to population.

The Program describes necessary measures to be taken for optimization of blood services man-

agement, to cut down the number of low-effective blood banking organizations and small blood units. A substantial improvement of technical and technological infrastructure of seven blood centers (blood banks) is also considered by the Program.

Organization and delivery of transformative learning courses for specialists from the Republican Blood Center (RBC) in Bishkek and regional (oblast) centers was found to be an essential cornerstone for successful implementation of all intended enhancements and to address current challenges in national blood transfusion services (BTS).

According to World Health Organization (WHO) Global Database on Blood Safety, due to scarce financial resources, weak institutional infrastructure and shortage of qualified instructors, till now the majority (72%) of countries worldwide are still having substantial deficit in educated blood banking specialists.

The Kyrgyz Republic is not exclusion, and the country is also experiencing such a shortage of professional core group of specialists particularly in the period of implementing wide-scale technical

ADDRESS FOR CORRESPONDENCE:

* 80 Gulakyan Street, # 8

0012, Yerevan, Armenia

Tel: (+374 10) 267 719

E-mail: nmihran@yahoo.com

innovations and re-enforcement of blood banking services and introducing principles of donor blood safety and quality programs in the country.

The original curriculum with its three interconnected teaching modules – designed as educational seminars on donor blood safety and quality improvement – was developed by the EPOS international experts. The themes and topics of seminars were intended to cover unmet needs, priorities and knowledge gaps of local blood bankers at various levels.

Tutorial materials were prepared using guidelines and learning modules and other relevant teaching sources on blood safety and quality recommended by the WHO [*Blood Transfusion Safety, 2007; Universal Access, 2007; Safe Blood and Blood Products, 2009; Blood Donor Selection, 2012*], as well as in line with other conceptual directives and standard procedures [*The Global Collaboration, 2002; Directive 2002/98/EC, 2003; European Standard Operating Procedure, 2007*].

The modules were compliant with advanced trends in blood banking development and blood safety with the special focus on quality requirements.

Training modules mark out evidence-based improvements and transformations in the following professional competences:

- Overall professional performance capacities;
- Securing blood safety by appropriate donor selection, recruitment, counseling, donor blood processing, testing, storing and delivery to users;
- Administering improved overall quality management system;
- Preparation and implementation of the individual action plan and didactic materials to initiate a safe blood and quality management education for the staff on-site training in blood services organizations.

The total training course duration was 176 hours (for all the 3 modules). The core module topics were taught by the international experts in close cooperation with local experts from the RBC in Bishkek and national experts from regional (oblast level) blood centers.

Interactive, learner-oriented principles of adult education based on cooperation, participation and partnership schemes were used as a core tutoring format.

For primary, then “middle-of-the-road”, and final assessment pre-test and post-training testing

was performed after each training module using special “multiple-choice answers” questionnaires.

Printed and electronic copies of the course content, presentations and working materials were distributed to seminar participants. Upon completion of each training module, all participants received the Certificate of Attendance authorized by the Ministry of Health of the Kyrgyz Republic, the RBC as a leading organization and main beneficiary, and the EPOS Health Management consulting company (Germany) – as a project training component principal performer.

In order to enhance the effectiveness of training classes and to secure conditions for direct feedback and communication, four working groups (WGs) were created based on mainstream functions and performance of blood centers (donor selection and counseling, blood processing and conservation, blood and components storage and delivery).

The first training seminar was mainly focused on delivery of planned range of topics in organization of blood transfusion services and quality management, effective communication, maintaining reliable documentation, plus validation and audit procedures in blood centers.

Guidelines and detailed instructions on how to prepare the Standard Operation Procedures (SOPs) were presented and broadly articulated. Participatory discussions and interactive opinion exchange were stimulated, welcomed and maintained. A broad consensus was reached on the value of SOPs as an instrument for effective management and quality improvement procedures and documentation. An algorithm for “vertical” reporting and accountability/feedback and “horizontal” communication across the WGs on established assignments was formulated and advised.

The WGs led by coordinators, who were identified from the seminar participants’ pool under the guidance and with facilitation of the international expert, initiated the SOPs preparation process. On the next step, participants from all WGs came forward with their own Quality Management training programs and drafts on organizational structure and job responsibility schemes. At the same time, they clearly demonstrated necessary skills: how to orient the staff towards the quality management doctrine and implement a systematic approach for providing the population with safe blood, define

key processes and procedures to prepare the operational block-schemes. The WGs participants were advised to revise and update current documentation formats, introduce internal auditing procedures at the departmental level. Special attention was given to modes of inspiring participation in the External Quality Assessment programs and effective delegation of responsibilities to their respective staff members.

Upon completion of the first "Training-of-trainers" seminar, the group of blood banking specialists from Bishkek and other regions of the Kyrgyz Republic was considered as a resourceful team to provide further assistance to local staff in developing quality management programs.

Later on, during the second training seminar, a planned range of course topics was focused on four key-stone directions towards sustainable donor blood safety and quality procedures:

- Key area I. Profound understanding of basic principles of safety and quality in BTS ("vein-to-vein" concept);
- Key area II. Monitoring tools in providing quality and safety of donor blood processing, storage and transportation;
- Key area III. Principles of strategic planning of blood and its components processing, storing, transportation;
- Key area IV. Role and principles of documentation management in maintaining quality and safety in BTS.

These activities allowed to revise, update and validate current SOPs, to amend them in line with new expected equipment and technology requirements.

Around 15 new SOPs were prepared and approved, along with 11 SOPs that were amended. Four SOPs were introduced for the first time, plus 5 SOPs for the RBC Mobile Blood Collection Team.

The External Quality Control procedures were introduced for brucellosis and malaria testing, and the routine internal quality assessment was introduced for clinical and biochemical testing using control cards, as well as regular entry control of supplied phenotyping antibodies (coliclone batches).

During the third (final) training seminar attendees were able to demonstrate evidence of successful management of blood quality and safety processes in national BTS organizations (donor recruitment, blood banking and processing, storage

and delivery).

As an added value topic, contemporary principles and challenges of financial management and cost assessment of blood transfusion services and blood banking were presented and discussed.

In order to raise the professional interest of participants and to develop a critical view on various dynamics and developments in blood banking and transfusion, original perspectives on "Queer things, or odds" in blood banking organization and management systems (the BTS "Kunstkamera" Collection) were prepared and actively discussed with the groups.

After presenting the gap analysis methodology, as a tool to eliminate deficiencies in blood banking processes, local specialists from all four WGs made their own analysis and presented implementation plans and innovative proposals towards quality improvement and blood safety.

It was recognized that after completion of the full set of three training seminars delivered in 2012-2013, the group of certified blood banking specialists from Bishkek and other regions (oblasts) of the Kyrgyz Republic would from now on symbolize a resourceful team of specialists/trainers with a mandate to provide further assistance to local staff in developing quality management programs. The team members gained necessary skills and became capable to:

- deliver quality management training programs in their respective organizations, based on gained knowledge and developed SOPs on key priority areas;
- perform regular gap analysis of their policies, achievements and deficiencies and report results to the authorities and to the community;
- propose thoughtful suggestions for preparation of a national standard "Blood and blood components: General requirements for quality assurance of collection, processing and use of blood and blood components";
- facilitate and support blood centers and transfusion departments at various levels to implement and maintain quality, safety and effective biovigilance concept in blood transfusion services.

The international cooperative training in donor blood safety and quality that was accomplished under the leadership of the EPOS Health Management experts and in cooperation with the national

blood services specialists from the Kyrgyz Republic demonstrated its effectiveness in addressing country's basic needs in national blood services capacity building. A "learner – needs" tailored curriculum and innovational adult education method-

ologies used in this project turned out to be a powerful instrument to improve skills and capacities of local blood banking specialists and to impact the harmless blood use in clinical settings.

REFERENCES

1. *Blood Donor Selection: Guidelines on Assessing Donor Suitability for Blood Donation*. WHO. Geneva, Switzerland. 2012. 238p. <http://www.who.int/bloodsafety>
2. *Blood Transfusion Safety: Information Sheet for National Health Authorities*. WHO. Geneva, Switzerland. 2007. 4p. http://www.who.int/bloodsafety/transfusion_services/en/InfoSheetNHAs.pdf
3. *Directive 2002/98/EC of the European Parliament and of the Council of 27 January 2003*; Official Journal of European Union. L 033, 08/02/2003 P. 0030 – 0040.
4. *European Standard Operating Procedure (SOP) Manual*. Edition 1.0. 2007.
5. *Safe Blood and Blood Products (Introductory Module). Guidelines and Principles for Safe Blood Transfusion Practice*. WHO. 2009. 128p.
6. *The Global Collaboration for Blood Safety (GCBS). Report of the 3rd meeting (5-8 November 2002)*. Department of Blood Safety and Clinical Technology. World Health Organization. Geneva, Switzerland. 22p. http://www.who.int/bloodsafety/publications/en/GCBS_Report_NOV2002.pdf
7. *Universal Access to Safe Blood Transfusion*. WHO. Geneva, Switzerland. 2007. <http://www.who.int/bloodsafety>