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Blood Service developments in Kazakhstan

On April 2, 2015, the Scientific and Production Centre of Transfusion (SPCT, based in Astana, Kazakhstan) organised a scientific and practical conference on relevant blood service issues.

Kazakhstan is a state with presidential regime, its population is ~17 million, 57% of which live in the major cities. Its density is about 6,3 people per square kilometre. The republic consists of 15 regions in total and 2 cities, which have a republican status; the regions are divided into 160 districts.

The blood service activities in Kazakhstan in the last 5 years and the new prospects were explained. Over the last years, over 200 departments within the blood services in Kazakhstan were closed and an optimal structure was successfully created. In accordance with international practices, these measures were taken in order to centralize and improve the efficiency of expensive technologies and tests used for donated blood. After this reorganisation, each of the regions will be led by their respective regional blood centres. Based on recommendations of the World Health Organization and the Council of Europe, national standards for all blood service activities were developed in the beginning of 2013 and approved. Part of these new standards is the two-stage screening of donor blood for transfusion infections markers, immunodetection and NAT-testing. All equipment used for screening is fully automated, validated and certified accordingly.

For the assessment of the laboratory activities in blood service, a reference laboratory performing external quality control of laboratory research using two methods was created in 2012 on the basis of SPCT. First, two times a year the laboratory shall produce and deliver a panel of control samples for immunohaematology, haematology and biochemistry testing. Second, with regard to donated blood screening for transfusion infections, every year the laboratories in regional blood centres shall re-test at least 5% of the archived donated blood samples.

Since January 2013, it is required and legislated in Kazakhstan that after each donation, blood samples are archived for 3 years.

The laboratory participates in international external evaluation programmes in order to assess their own immunohaematology, haematology and biochemistry test results. In addition, the following archived annual samples were sent to other blood service laboratories for inter-laboratory comparisons:

- 200 samples to the National Transfusion Microbiology Reference Laboratory (UK in 2013).
- 201 samples to the Blood Centre of Zurich (Switzerland, in 2013).
- 960 samples to the Institute for Transfusion Medicine and Immunohaematology of German Red Cross Society and the Paul-Ehrlich Institute (both Germany, in 2014).

In all samples tested, the results received by these laboratories were similar when compared to the SPCT reference laboratory results.

In addition, the established achievements include: i) development of voluntary unpaid blood donation in cooperation with the WHO; ii) improving the information system of the blood service and iii) transition to complete inactivation of all platelet concentrates doses issued to clinics for transfusion. Also, Eugene Zhiburt, President of the Russian Transfusionist Association and other experts reported on the issues of security of the transfused blood components.

