NIK on blood donation and treatment in Poland

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Poland has enough blood and plasma to meet patients’ needs. But the growing demand for blood and its components – considering that the number of donors has been the same since 2010 – poses the risk of blood deficits in the future. NIK also points to the absence of a system solution in Poland to manage the plasma surplus. Poland, as one of few large European countries, has not yet developed its own plant processing plasma into blood products and has to buy them abroad.

Like most European countries, Poland has its central blood donation system. It guarantees safety both to blood donors and patients. And this is because all blood donation and blood treatment centres around Poland use the same, proven procedures of drawing and testing blood and its components.

At the end of 2013, there were 2.8 million blood donors in total in the nationwide registry. But active donors make up only about ¼ of all registered donors. The number of persons reporting for blood donation was increasing systematically. It did not translate, though, into a boosting number of donors: year after year fewer and fewer persons qualified to be a donor. The percentage of people not allowed by doctors to give their blood was going up regularly: from 11% in 2010 to 15% in 2013.

The most frequent reasons why potential donors were not qualified for blood donation in the audited blood centres included: too low haemoglobin level or bad results of other tests, taking drugs, acute respiratory tract diseases, too low or too high blood pressure.

Blood provisioning and use

In terms of the provision of blood and its components Poland has become self-sufficient nationwide. However, not all needs of individual hospitals are fully satisfied. Still, both in hospitals and blood donation centres, there are periodical surpluses and deficits of blood. In all cases of emergency, the hospitals covered by the audit received blood. Though, the safety of patients is not an outcome of the system effectiveness but rather efficiency of the heads of hospitals and blood donation centres.

The blood donation system made it possible to acquire and distribute blood freely all around Poland. But when executing orders the centres did not use all possibilities of acquiring missing blood components from their twin centres. As much as ⅔ of the audited blood donation and blood treatment centres did not fully execute the orders they received.

The centres’ directors explain that even when they have blood deficits, they are reluctant to buy it from other centres which have surpluses because every centre wants to execute its sales plan, essential to receive financing. If the plan is not executed, part of the subsidy has to be returned. Also, that is why they are trying to prevent hospitals from their region to get blood from other centres.

The NIK audit revealed that in the periods of temporary deficits of blood or its components some hospitals had to search blood on their own or put off the scheduled medical procedures. The cases of postponing procedures and prolonging hospitalisation (because of problems with obtaining blood) were the reality in ¼ of audited hospitals and medical centres where NIK sought information.
underlines, though, that in none of the audited hospitals was the patients’ life or health put to risk for that reason. When blood was critical to save a human life, the hospitals gained it.

**It happened that there were blood deficits in some places and surpluses in others - in hospitals, blood donation and blood treatment centres. When not all blood components were used before their expiry date, they had to be disposed of.**

From 2010 to 2013, nearly 10 million units and packages of blood components were produced, of which nearly 6.3 million (63%) was provided for clinical use. Other components were stored, part of plasma was sold to pharmaceutical factories, whereas unusable surpluses of blood were disposed of. In all blood donation centres the total of 607 thousand units and packages of blood and blood components were disposed of, of which nearly 137 thousand were destroyed due to expiry. **A particularly alarming fact is the continuous increase in the number of units of blood and its components designed to be destroyed (from 4.9 % in 2010 to 7.4 in 2013).** The audit showed that in 7 of 9 audited centres blood was drawn and utilised in a way that did not ensure any reduction of losses caused by expiry of the collected material.

Although the Institute of Haematology and Blood Transfusion and the National Blood Centre monitored and analysed current blood stock levels in individual centres and quantities of blood produced and provided to hospitals there are still no mechanisms in place to compare how much blood the hospitals ordered and how much the centres provided. Such data would make it possible to optimise the use of blood and at the same time reduce the disposal of blood due to its expiry.

**Providing blood products and managing plasma surplus**

There is no system solution in Poland to manage the plasma surplus. Only 30% of collected plasma is used for clinical purposes, the rest is the surplus which is used for the production of blood-based medicines. Poland is one of few large European countries which has not yet developed its own plant processing plasma into blood products and which has to buy them abroad still.

**Poland still has problems to fully use the collected plasma. As a consequence it has to pay for its storage. From 2012 to 2013, in five centres the costs exceeded PLN 1.4 million.** It also has to be remembered that the plasma stored for a long time gradually loses its value. In that way the price for which it may be sold to producers of blood-based medicines decreases. The value of plasma stored in six audited centres as at 31 December 2013 was lower than the value established after it was produced by nearly PLN 12 million.

The centres often sold the plasma for fractionation for a price lower than the costs of its production. From 2010 to 2013, in seven audited centres, the difference reached almost PLN 42 million. Since it was impossible to manage surpluses of plasma, 32.5 thousand plasma units had to be disposed of from 2010 to 2013 (which makes up about 9 percent of yearly demand for plasma).

**NIK points out that Poland still has no plasma processing plant. That issue has not been solved since the ‘90s of the 20th century when attempts were made to open the plasma fractionation plant.**

By the end of 2009, the centres sold plasma surpluses to a Swiss fractionation plant but the contract was not prolonged as no agreement was reached as to the price. Finally a contract was signed with a German company but the plasma sell price was 1/3 lower than the offer price. Therefore, the directors of individual centres had to look for other buyers of plasma surpluses. In the long run the surpluses were sold to pharmaceutical companies from Poland, Germany, Italy, Lithuania, USA, not always on the terms favourable for the centres (the plasma prices ranged from EUR 10 to 93 per litre).

In August 2010, a special government document was passed which said that plasma should be
processed in Poland by a plant owned by a private investor.

Though, the Ministry of Health was ineffective in its efforts to provide a system solution to handle the plasma surplus and satisfy the patients’ demand for blood products. In 2012, the potential investor gave up its plan to build the plant.

The Minister of Health did not take any other actions ever since to build the plasma plant in Poland. The option to find an external entity to process the plasma acquired abroad was also given up. Currently Poland sells plasma surpluses and, separately, buys blood products from pharmaceutical companies or importers.

At the end of 2013, regional blood donation centres had the total of over 370 thousand litres of plasma, where the surplus over the level established by the Minister of Health was 257 thousand litres. Besides, the Military Blood Donation and Blood Treatment Centre gathered 8.8 thousand litres of plasma and the Centre within the Ministry of the Interior had over a thousand litres. From those stocks nearly 25 thousand litres were collected in 2010 and before (usability of plasma for medical purposes is three years).

Guaranteeing safety to blood donors and recipients

According to NIK, the procedures as part of the blood donation and blood treatment system developed by the state were used properly, which minimised the risk of health problems to blood donors or recipients. The system effectiveness is proven by the small number of adverse reactions and post-transfusion complications.

The centres had required accreditations and permits, implemented the quality assurance systems and complied with the conditions of drawing, testing, processing and storing blood. Each and every time the blood and its components acquired from donors were tested, serological tests were made and blood treatment in hospitals was supervised. In case of complications after the blood transfusion, each case was analysed in detail to establish the causes.

At the same time, NIK points to the deficit of specialist doctors and training programmes in transfusion medicine. The data of the National Blood Centre shows that not in all hospitals making blood transfusion doctors responsible for blood management were appointed (although they were obliged to do so). In the hospitals audited by NIK such doctors - coordinators were appointed, however due to the absence of transfusion specialists, these duties were entrusted to other specialists.

Organisational units of the public blood service conducted blood treatment training programmes but in ¼ of audited medical centres their heads did not make sure that their employees dealing with blood management or transfusion (doctors and nurses) took part in those programmes.

Final conclusions

The number of blood donors actually has been the same since 2010 but the demand for blood and its components is growing. Hence, there is a risk that in the coming years there will not be enough blood to meet patients’ needs, unless effective steps are taken to maintain the existing and acquire new blood donors and optimise the blood use.

Due to blood surpluses and deficits occurring at the same time in various centres, proper coordination of blood handling nationwide is essential, mainly by limiting blood destruction and ensuring optimum use of blood and its components. That is why, it is a good idea to develop effective mechanisms for distributing blood components among the centres.

According to the survey conducted by NIK among blood donors, the key motivation to give blood is
the will to help others (nearly 90% recipients). For most recipients the main source of information about volunteer blood donation were their families and friends (45.4%), school or studies (33.5%) and work (8.9%). Only less than 3% of them indicated employees of blood donation centres or healthcare institutions. 5.3% of respondents learnt about the volunteer blood donation from the media (which 60% of blood donors considered the most effective way of promoting blood donation). Other effective methods of popularising blood donation mentioned by the respondents were blood donation campaigns in schools combined with lectures given by doctors and blood donors.