

ANALYSIS OF PLANNING OF PREPARATION OF BLOOD FROM DONORS IN THE REPUBLIC OF UZBEKISTAN

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ABSTRACT

The importance of the topic. The development of the medical field puts new tasks before the blood service institutions. According to WHO recommendations, the blood service of each country is evaluated according to the following indicators: the donor blood being prepared is safe, sufficient and available for everyone [1, 3, 10].

Transfusion of blood components is the main part of transfusiology, what is carried out by qualified specialists in hospitals [15]. Blood preparations are assessed as unsuitable when cases of hemotransmissible infections, biochemical indicators, chilloisis, hemolysis, fibrinolysis are observed in the blood preparation [11]. The most dangerous type of hemotransmissible infections include hepatitis B, C and D, human immunodeficiency virus infection, brucellosis, malaria [13, 16]. Although there have been many studies in the last 10 years aimed at early diagnosis, treatment and diagnosis of complications of chronic viral hepatitis [5, 7, 9], some laboratory results in the literature have not been studied until the end [6, 8].

One of the main conditions of transfusiology is the preparation and transfusion of blood components that meet modern quality and safety requirements for blood transfusion therapy. Over the past 10 years, the improvement of Tibetan technologies has made it possible to increase these capabilities [14].

The activity of the republican blood service is based on the Law of the Republic of Uzbekistan "On Donation of Blood and Its Components", the Cabinet of Ministers of the Republic of Uzbekistan of November 27, 2014 "On Additional Measures to Implement the Law of the Republic of Uzbekistan on Donation of Blood and Its Components" Resolution No. 324 (Decision of the Ministry of Health No. 324) and Resolution No. 423 dated December 16, 2013 of the Ministry of Health "On Approval of the Regulation on the Procedure for Donating Blood and Its Components" and dated April 6, 2015 Collecting, preparing, 153 on the order of processing, storage and their use.

Currently, the service of working with blood in the health care system is the Republican Blood Transfusion Center, Tashkent City "Blood Products" Scientific Production Enterprise, blood transfusion station of the Republic of Karakalpakstan and blood transfusion stations of 12 regions, blood transfusion stations of 2 institutions under the control of the republic, and 199 blood transfusion stations. consists of departments (blood banks).

The Republican Blood Service is setting blood preparation plans based on its capabilities and last year's results. In recent years, almost all regions have been implementing the blood

preparation plan . But only some regions have enough blood components and fully satisfy the demand. The ongoing changes in our medicine - the implementation of complex surgical operations, the introduction of organ transplantation, the increase in the number of births, on the one hand, the increase in traumatism, the introduction of effective methods of treatment of oncological and hematological diseases, on the other hand, lead to an increase in the demand for blood components. Therefore, it is clearly felt that the amount of blood prepared by the blood service is insufficient. In this regard, it is necessary to take all measures to increase blood preparation by strengthening the promotion of donation[2, 4]. However, in order to summarize the funds allocated to the blood service, it is necessary to determine the volume of blood that needs to be prepared.

In order to calculate the demand for blood, each treatment and prevention institution (TPI) must prepare an annual application and submit it to regional blood centers by September 30. Regional blood centers should summarize them and draw up an annual plan for the region. But in practice this system does not work. For this reason, the regional blood centers determine the plan based on their capabilities and taking into account the allocated financial resources. After all, blood components are not prepared in sufficient quantity, because the real demand is not clear, they are missing at the right time, a kind of "vicious circle" is being formed.

So, is there enough donor blood today, is it prepared in the required amount, and how much blood is needed to meet the demand of treatment and prevention institutions? We conducted our research today to find answers to these questions.

THE PURPOSE OF THE STUDY

To develop optimal methods of determining the need for blood components of medical institutions in the Republic.

MATERIALS AND METHODS OF LEARNING

Plans and reports on blood preparation in the republic for the last 5 years, the number of places in the regions of the republic, the statistics of the population of the republic, data on days of treatment of patients in the republic were analyzed and studied.

OBTAINED RESULTS AND THEIR DISCUSSION

The results showed that the volume of blood preparation and the number of donations in the republic increased by 1.5 times in 5 years (2017-2021) (Fig. 1). In 2021, 240361 blood (plasma) donations were registered across the country and 114578.0 liters of pure blood were prepared (in 2020, blood (plasma) donations amounted to 199375 and 95560.52 liters of pure blood were prepared, in 2019 blood (plasma) donations were 201606 preparation of pure blood was 96550.17 liters).

The number of donations per 1000 inhabitants increased 1.4 times (Table 1). Although the number of donations has increased due to population growth, this indicator has not changed enough. In the republic, this indicator was 6.8 per 1000 inhabitants in 2021 (0.68% of the population).

Annual plans for blood preparation from donors were determined in the following ways:

1. According to of the Ministry of Health order No. 40 of 01.30.2004 "On introduction of the procedure for planning, financing and reporting of blood preparation in the health care system" (MH order 40), the number of blood donations (number of donations) is 0.25 of the number of hospitalized patients is determined by multiplying by the coefficient, or in other words, one out of every four patients admitted to the hospital will need blood.

2. Annex 3 of the Cabinet of Ministers of the Republic of Uzbekistan Decision (CM) No. 324 dated November 27, 2014 "On Additional Measures for the Implementation of the Law of the Republic of Uzbekistan "On Donation of Blood and Its Components" specifies the need for blood components for various areas of TPI was calculated through the norms [12].

3. According to the recommendations of the WHO, the population's need for blood is determined by the ratio of blood donors per 1000 people. Accordingly, in order to fully satisfy the population's demand for blood and blood products, the number of blood donations should be 30 or more per 1000 people, and to provide the population with blood components only, the number of blood donations should be at least 10 per 1000 people or 1% of the population [1].

According to the conducted inspections and calculations, the norms of preparation of blood components in the last 5 years were determined and compared with the indicators planned and prepared by the blood service (Table 2).

Planning shows that 71578.2 liters of blood preparation is planned for the Republic in 2017 (actually 74437.1 liters were prepared). This plan indicator is 1.36 times less than the calculation according to the decision of the CM No. 324, 2 times less than the WHO indicator, 6.69 times less than the indicator of MH Order 40. Compared to the prepared amount, it is almost as much less.

In 2018, it is planned to prepare 69113.1 liters of blood (actually 85201.0 liters were prepared). This plan's indicator is 1.6 times less than the calculation according to the decision of the CM No. 324, 2.1 times less than the WHO indicator, 7.2 times less than the indicator of MH Order 40. Due to the fact that the prepared amount exceeded the plan by 23%, the difference in the middle decreased, that is, 1.3, respectively; 1.7; 5.8 times less.

In 2019, it is planned to prepare 75978.1 liters of blood (in practice, 96550.1 liters were prepared). The indicator of this plan is 1.45 times less than the calculation according to the decision of the CM No. 324, 1.97 times less than the WHO indicator, 6.5 times less than the indicator of MH Order 40. Due to the fact that the prepared amount exceeded the plan by 27%, the difference in the middle was further reduced, i.e. 1.1, respectively; 1.5; 5.0 times less.

In 2020, it is planned to prepare 82,932.9 liters of blood (actually, 95560.5 liters were prepared). The indicator of this plan is 1.39 times less than the calculation according to the decision of the CM No. 324, 1.87 times less than the indicator of WHO, and 5.3 times less than the indicator of MH Order 40. Due to the fact that the prepared amount exceeded the plan by 15%, the difference in the middle decreased slightly, that is, 1.2, respectively; 1.6; 4.6 times less.

It is planned to prepare 86575.8 liters of blood in 2021 (actually 114578.0 liters were prepared). The indicator of this plan is 1.37 times less than the calculation according to the decision of the CM No. 324, 1.8 times less than the indicator of WHO, and 5.4 times less than the indicator of MH Order 40. Due to the fact that the prepared quantity exceeded the plan by 32%, the difference in the middle was reduced by almost a third to one, that is, 1.04, respectively; 1.4; 4.1 times less.

Compared to the plan, the amount of prepared blood in excess of the plan approached the plan indicators according to the decision of the CM No. 324 and almost equalized by the end of 2021. But in our medicine, the need for blood is not fully met, the problem of donor blood, especially the problem of rhesus-negative blood is clearly felt. Therefore, future planning based on these decision indicators may not reflect the full demand of donor blood in our medicine. According to MH Order 40, there is a huge difference between the amount of prepared blood and the amount of prepared blood, which requires at least a fourfold increase of the high indicator of 2021, depending on the total number of patients treated in the hospital, without taking into account the type of hospital beds, the characteristics of the diseases, the level of severity. The WHO recommendation index depending on the population is currently the optimal method that allows us to quickly determine and summarize our situation, the level of donation, the indicator of blood preparation by region.

SUMMARY

1. It was found that there is a big discrepancy in the planning of blood preparation from donors according to the current normative documents.
2. Taking into account the development of medicine and the emergence of new fields, it is necessary to conduct separate studies on each of the narrow fields in order to revise the methods of determining the need for blood.
3. It is recommended to make a plan for preparing blood from donors in the blood service, according to the recommendations of WHO, at the ratio of 10 donors per 1000 inhabitants (1% of the population).

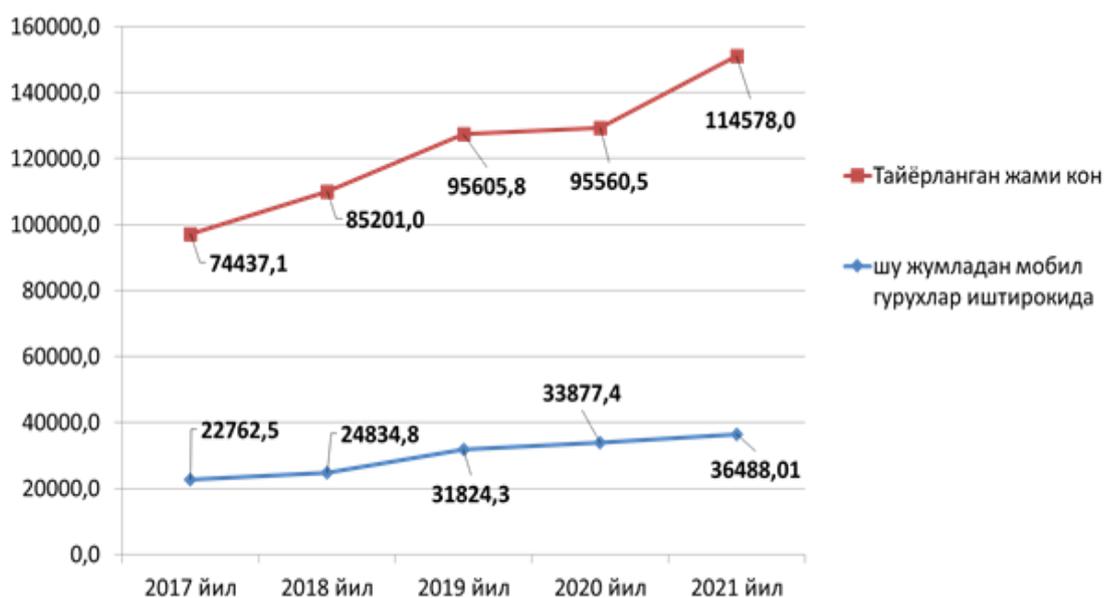


Figure 1. Volume of blood preparation from donors in Uzbekistan in 2017-2021 (in liters)

Table 1. Blood donation rate per 1000 population in 2017-2021

	Population, thousand people	Number of donations	Indicator of donations per 1000 inhabitants
2017 year	32387.2	154206	4.8
2018 year	32955.4	178206	5.4
2019 year	33255.5	201606	6.1
2020 year	34558.9	199375	5.8
2021 year	35 153.4	240 361	6.8

Table 2 Plan indicators according to regulatory documents, indicators planned and prepared by the blood service

Regulatory documents	Years				
	2017	2018	2019	2020	2021
CM-324	97664.2	110547.0	110403.0	115872.8	119111.5
MHorder 40	<u>1496200</u> 478784.0	<u>1558900</u> 498848.0	<u>1538500</u> 492320.0	<u>1383025</u> 442568.0	<u>1481525</u> 474088.0
WHO recommendation	<u>323872</u> 145742.4	<u>329554</u> 148299.3	<u>332555</u> 149649.8	<u>345589</u> 155515.1	<u>351534</u> 158190.3
Blood service plan	<u>156243</u> 71578.2	<u>152919</u> 69113.1	<u>168172</u> 75978.1	<u>184307</u> 82932.9	<u>190795</u> 86757.8
Practically prepared	<u>154206</u> 74437.1	<u>178206</u> 85201.0	<u>201606</u> 96550.1	<u>199375</u> 95560.5	<u>240361</u> 114578.0

In the photo - the number of donations (in absolute terms), in the denominator - the amount of blood (in liters)

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