



STRATEGIES IMPLEMENTED IN HEMOTHERAPY SERVICES TO INCREASE BLOOD DONATION

Estratégias implementadas em hemocentros para aumento da doação de sangue

Estrategias incorporadas en hemocentros para el incremento de la donación de sangre

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ABSTRACT

Objective: To assess the effectiveness of social marketing and user embracement strategies developed in a hemotherapy service and to assess the restrained demand for blood and blood components in a reference hospital before and after the actions. **Methods:** This is a quantitative comparative study carried out in a hemotherapy service and in a hemotherapy service of a reference hospital in the city of Santa Maria, Rio Grande do Sul, Brazil, between September and December of 2015. The strategies included social marketing through the sending of letters and e-mails and phone calls to people who could give blood again. User embracement consisted in welcoming users by showing them an information booklet. Data obtained from the database, particularly records of transfusions requested and performed, were used to compare the number of donations performed before and after the actions with data of the previous year using descriptive statistics and Student's t test. **Results:** The overall number of donations increased, especially in the last month when the interventions were performed ($p=0.0397$). The average number of voluntary blood donations decreased from 237 donations/month in 2014 to 222 donations/month in 2015. The average number of voluntary apheresis donations of platelets increased from 11 donations/month in 2014 to 17 donations/month in 2015. **Conclusion:** The strategies implemented during the research period were effective in increasing apheresis donation of platelets, but had no positive effects on whole-blood donation.

Descriptors: Hemotherapy Service; Blood; Blood Donors; Blood Banks.

RESUMO

Objetivo: Verificar a efetividade das estratégias de marketing social e de acolhimento desenvolvidas em um hemocentro e, antes e após as ações realizadas, verificar a demanda reprimida de sangue e hemocomponentes em um hospital de referência. **Métodos:** Trata-se de estudo comparativo, com abordagem quantitativa, realizado em um hemocentro e no serviço de hemoterapia de um hospital de referência no município de Santa Maria, RS, Brasil, entre setembro e dezembro de 2015. As estratégias compreenderam ação de marketing social, realizada por meio do envio de cartas, e-mails e telefonemas às pessoas em condições de realizar uma nova doação, e o acolhimento, que consistiu em realizar a acolhida do usuário por meio de um álbum seriado. A partir do levantamento de informações do banco de dados, especificamente dos registros de transfusões solicitadas e efetivadas, comparou-se o número de doações efetivadas antes e após as ações ao quantitativo do ano anterior com base na estatística descritiva e teste t de Student. **Resultados:** O número de doações em geral aumentou, principalmente no último mês em que ocorreram as ações ($p=0,0397$). Entretanto, a média de doações voluntárias de sangue total apresentou



redução, passando de 237 doações/mês, em 2014, para 222 doações/mês, em 2015. A média de doações voluntárias de plaquetas por aférese aumentou de 11 doações/mês, em 2014, para 17 doações/mês, em 2015. **Conclusão:** As estratégias implementadas no período do estudo contribuíram para o aumento no número de doações de plaquetas por aférese, porém, com relação à doação de sangue total, não houve resultado positivo.

Descritores: Serviço de Hemoterapia; Sangue; Doadores de Sangue; Bancos de Sangue.

RESUMEN

Objetivo: Verificar la efectividad de las estrategias de marketing social y de acogida desarrolladas en un hemocentro y verificar la demanda reprimida de sangre y hemocomponentes de un hospital de referencia antes y después de las acciones realizadas. **Métodos:** Se trata de un estudio comparativo de abordaje cuantitativo realizado en un hemocentro y en el servicio de hemoterapia de un hospital de referencia en el municipio de Santa María, RS, Brasil, entre septiembre y diciembre de 2015. Las estrategias fueron la acción de marketing social realizada a través del envío de cartas, correos electrónicos y llamadas a las personas con condiciones de realizar una nueva donación e la acogida que fue realizada al usuario a través de un álbum seriado. A partir de las informaciones del banco de datos, en específico de los registros de las transfusiones solicitadas y efectuadas, se comparó el número de donaciones efectuadas antes y después de las acciones con el cuantitativo del año anterior basado en la estadística descriptiva y la prueba t de Student. **Resultados:** El número de donaciones ha aumentado en especial en el último mes de las acciones ($p=0,0397$). Sin embargo, la media de donaciones voluntarias de sangre total ha presentado una reducción de 237 donaciones/mes en 2014 para 222 donaciones/mes, en 2015. La media de donaciones voluntarias de plaquetas por aféresis ha aumentado de 11 donaciones/mes en 2014 para 17 donaciones/mes en 2015. **Conclusión:** Las estrategias implementadas en el período del estudio contribuyeron para el aumento del número de donaciones de plaquetas por aféresis, sin embargo, no hubo resultado positivo respecto la donación de sangre total.

Descriptorios: Servicio de Hemoterapia; Sangre; Donantes de Sangre; Bancos de Sangre.

INTRODUCTION

Blood donation is a major concern worldwide as there is no substance that can totally replace blood tissue⁽¹⁾. Blood components have been used for more than 50 years and are essential for medical practice. Their collection, storage and processing involve highly specialized stages whose productivity depends on the availability of voluntary donors⁽²⁾. This can, therefore, be considered one of the biggest challenges faced by hemotherapy services worldwide. A study carried out in Ethiopia revealed that people's knowledge about voluntary blood donation is high; however, their attitude towards such practice is low⁽³⁾. In this context, Brazil has been facing the same challenge, that is, difficulties in ensuring the collection and distribution of blood in a safe and sustainable manner through the recruitment and retention of voluntary blood donors⁽⁴⁾. This can, therefore, be considered one of the biggest challenges faced by hemotherapy services around the world.

Despite the increasing need for first time blood donors, a greater frequency of repeated donations would expand the coverage of an increasing demand for blood components and ensure a safer delivery of blood bags to the recipient and the reduction of the cost of collection⁽⁵⁾.

The type of donation and the type of blood donor are classified according to the criteria established by the Ministry of Health through Ordinance GM/MS No. 158, of February 4, 2016, which redefines the technical regulation of hemotherapy procedures. Thus, spontaneous donation is defined as that performed without any form of benefit to the donor, and comprises donation of one unit of blood or one of its components. Replacement donation is the donation from an individual who donates to meet the need of a specific patient and is performed by people motivated by the service, family or friends to replenish the stock of blood components in hemotherapy services. Autologous donation is the donation that the patients give for their own use, while apheresis donation is the one that allows the withdrawal of only one of the cells of the whole blood⁽⁶⁾.

The recruitment of blood donors is an activity aimed at developing programs that raise the population's awareness of the importance of voluntary donation⁽⁶⁾. One of the ways to do this is the social promotion of awareness and sensitization of the people for the donation of blood as an act of citizenship, solidarity and preservation of human life⁽⁴⁾.

The dissemination of blood donation in the media has been a strategy used incessantly to reach primarily the population group of first-time volunteer donors, but it is imperative to ensure that those who have donated will become voluntary donors to keep the minimum stocks of blood and blood components in the hemotherapy services⁽⁴⁾.

In this instance, some specific recruitment strategies can be carried out to reach this public. Social marketing corresponds to the use of a notice/call system through telephone, mailing or internet recruitment^(7,8). Another resource used, not only in hemotherapy services, but also in primary health care centers, is the user embracement, a type of institutional strategy considered an effective tool that can provide good services to donors and favor loyalty by strengthening the meeting between the user, the professional and the service⁽⁹⁾. These initiatives require professionals' training and goodwill⁽¹⁾, and studies have shown favorable results when strategies of this nature are used to recruit blood donors^(1,7).

Given this context, the evaluation of the effectiveness of the actions undertaken is relevant to determine the choice of policies to be implemented in hemotherapy services and blood banks, for it can identify those capable of increasing blood donation and support the creation of strategies aimed at the continuous improvement of this process. In addition, alternatives to solve problems related to the lack of blood in the hospitals constitute a health promotion strategy, since they can be understood, in a broader way, as a way of thinking and operating, relating to other policies and technologies developed in the health system that contribute to the construction of actions to respond to social needs in health care⁽¹⁰⁾.

Thus, based on the assumption that user embracement and social marketing actions can contribute to increase the number of blood donors, with repercussions for the health services, the present research tried to implement them in the routine of a hemotherapy service. Thus, the present study aimed to assess the effectiveness of social marketing and user embracement strategies developed in a hemotherapy service and to assess the restrained demand for blood and blood components in a reference hospital before and after the actions.

METHODS

This is a quantitative comparative study carried out in a public hemotherapy service and in a hemotherapy service of a reference public hospital in the city of Santa Maria, Rio Grande do Sul, Brazil. The study was conducted between September and December 2015. The comparison event refers to the number of donations given in the hemotherapy service and to the number of transfusions of blood components in the hospital before and after the implementation of the actions. The study analyzed information on 5,049 donors and records of 5,376 units of platelets requested and transfused compared with the previous year.

Inclusion criteria for the hemotherapy service were the effective data on all the donors of the three months of each year, 2014 and 2015. Autologous donations of whole blood were excluded from the study. In the hemotherapy service of the hospital, inclusion criteria were the data on platelet transfusions. Data on transfusion of other blood components were excluded. The instruments used for data collection were two distinct forms: one for the hemotherapy service and another for the hemotherapy service of the hospital, both of which were exclusively designed for the present study.

The study is part of an umbrella project⁽¹¹⁾ that sought to carry out an evaluation of user embracement and social marketing actions in hemotherapy services. User embracement actions consisted in embracing users using an information booklet explaining the process of donating blood and blood components. Thus, donors were invited to participate while waiting to be called to start screening. Social marketing actions included the sending of letters and e-mails and phone calls to people eligible for a new donation (three months for women and two months for men).

For data collection, and as a way of evaluating the effectiveness of the actions carried out, the present study sought to compare information obtained in the electronic database of the hemotherapy service before and after the implementation of the strategies. To verify the impact on the hospital setting, data were collected in printed records of the hemotherapy service for the months of the actions (2015) and the months of the previous year (2014).

For the analysis of the data obtained in the two study settings, the data were initially organized in an Excel spreadsheet and exported to the SPSS software, version 23.0; data were then analyzed using descriptive statistics. For comparison of the data, the Student's t-test was used and significance level was 0.05.

The study was approved by the Research Ethics Committee of the Federal University of Santa Maria (*Universidade Federal de Santa Maria*), with Approval No. 1.189.482.

RESULTS

Of the 2,830 candidates for donation in September, October and November 2014, the mean total number of rejections in the clinical screening was 12.9% (n=121) per month. Out of the total of 2,863 potential donors in the same period in 2015, total rejections were 9.7% (n=93) per month.

The mean number of individuals eligible for donation of blood and blood components was approximately 820 donors/month in 2014 and 860 donors/month in 2015, with an increase in the number of donations in the last year. In the first two months after the implementation of the actions (September and October), the number of donors were the same as that in the previous year. In November, there was a statistically significant increase (p=0.0397) in the number of donations compared with the same month in the previous year, from 34.56% (n=852) to 37.34% (n=965) (figure 1).

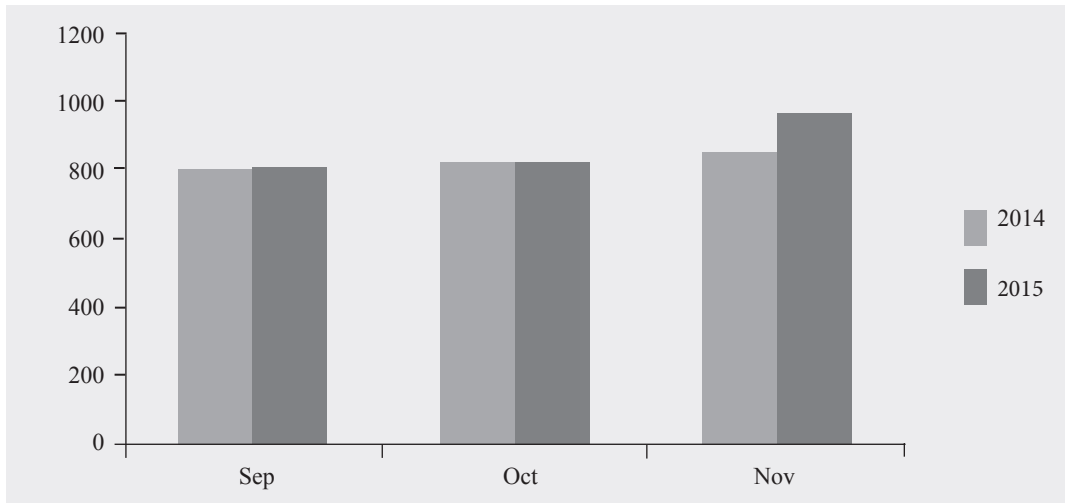


Figure 1 - Whole blood donation and apheresis donation of platelets in September, October and November 2015 (months in which actions were carried out) compared with the same months in 2014. Santa Maria, Rio Grande do Sul, 2016.

Total blood donations were given by volunteer donors, replacement donors and donors in campaigns conducted in the municipalities of the region. Apheresis donations of platelets were given only by volunteer and replacement donors. Figure 2 shows the quantities by type of donation in each month/year.

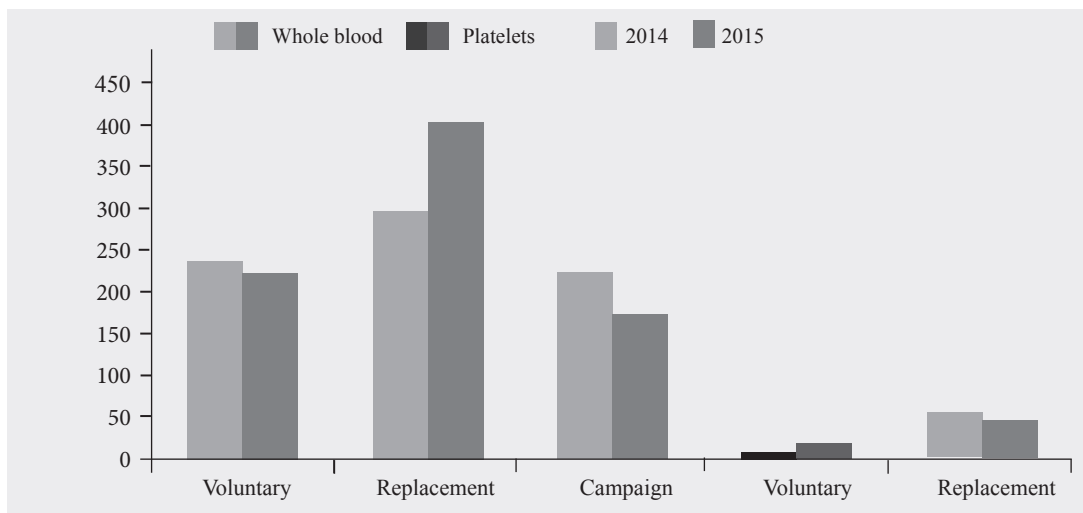


Figure 2 - Types of whole blood donation and apheresis donation of platelets before and after social marketing actions. Santa Maria, Rio Grande do Sul, 2016.

The mean number of replacement donations of whole blood increased in 2015. This type of donation, which is directed to a specific patient, increased 36.4% (n=107) (p=0.0552) compared with the previous year. On the other hand, voluntary donations and campaign donations decreased 6.3% (n=15) (p=0.021) and 23.1% (n=52) (p=0.580), respectively.

With regard to the demand for blood and blood components, the hospital performs transfusions of red blood cells, platelets, fresh plasma and, to a lesser extent, cryoprecipitate. Because most blood components were supplied, with the exception of platelets, a specific search of this blood component was carried out to identify the demand in the setting.

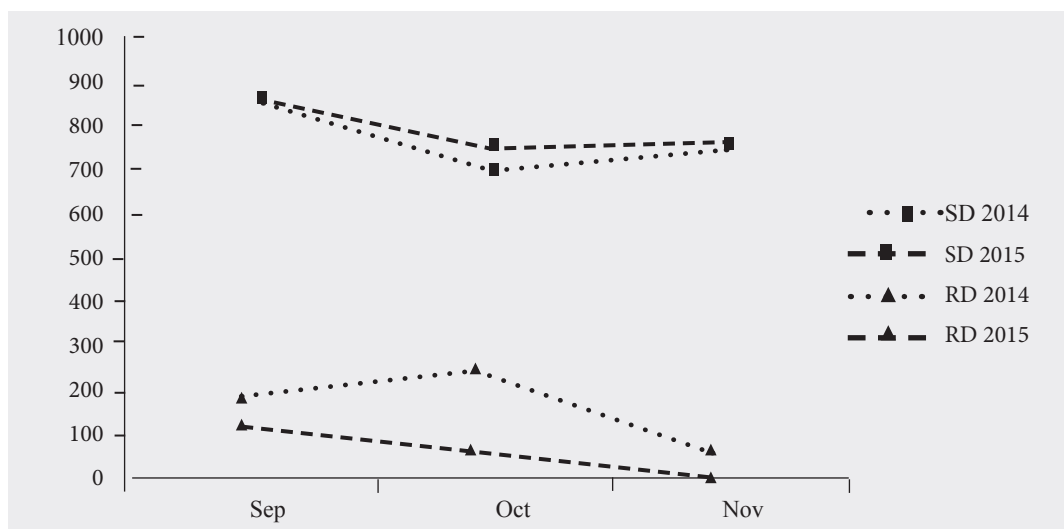


Figure 3 - Demand for platelets in the University Hospital before and after social marketing actions. Santa Maria, Rio Grande do Sul, 2016.

SD: Satisfied demand; SD: Suppressed demand

It should be noted that the mean demand for platelet units in the period corresponding to the year 2014 was 940 units/month; in 2015, it was 852 units/month. The data obtained indicate that the demand for platelets is 774 units/month in 2014 and 786 units/month in 2015 ($p=0.6143$). Thus, the repressed demand, which corresponds to the units of platelets requested and that could not be met due to stockout, significantly reduced – there were 166 units/month in 2014 and 66 units/month in 2015 ($p<0.0001$) (figure 3).

DISCUSSION

The screening at the initial moment of the blood donation process is essential for the selection of the individual willing to donate; however, people are not always able to give blood. In the present study, in the hemotherapy service of Santa Maria, the mean number of individuals who were not fit for donation was 9.7% in 2015 and 12.8% in 2014. In a study conducted in the hemotherapy service of Campinas, 24% out of a total of 87,773 potential donors were declared unfit⁽¹²⁾. The results of the present study are more similar to the results of a study in which 11.9% of the individuals were also unfit for donation⁽¹³⁾. The reasons for being unfit for donation are many, including unawareness of blood donation requirements, which determine whether or not donation is possible. The present study also identified a reduction in the number of people who were unfit for donation from one year to the next, which may be related to people's knowledge about the donation process and the criteria that prevent them from donating.

The population should actively participate in the process of donating blood in a responsible and conscious way, which is possible through educational actions and social mobilization aimed at ensuring the quality and adequate quantity of blood and blood components⁽¹⁴⁾. Thus, the greater the number of candidates informed about the requirements needed for donation, the higher the eligibility rates at the time of clinical screening. This increase may be related mainly to marketing actions developed in hemotherapy services to enhance donor recruitment. In the present study, these actions comprised the sending of letters and emails and phone calls to those people whose deadline to give a new donation had already expired (three months for women and two months for men).

In September and October, when the actions of the present research were carried out, there were no changes in the number of donors, which may be a result of the method used to evaluate whether the people reached by the awareness actions carried out had actually donated blood, since the evaluation occurred very close to the actions. It should be noted that social marketing in the blood collection process is considered an additional work tool⁽¹⁵⁾. Moreover, social marketing is important for donor recruitment and requires the use of consistent strategies to make blood donation part of the habits and values of the population⁽¹⁾.

User embracement actions carried out in the waiting room are specifically aimed at donor loyalty, which represents the possibility of repeated donor, that is, one who regularly and spontaneously attend the hemotherapy service to donate blood at least twice a year⁽⁶⁾. It should be noted that the hemotherapy service of Santa Maria does not have a professional who can carry out regular user embracement actions in the waiting room and that this process must be carried out by several professionals in all stages of the donation process; in addition, the results of the present study show that this measure has been little effective in achieving donor loyalty, although it is valid as a practice for encouraging donation.

It is necessary to emphasize that the improvement and humanization of the user embracement processes are fundamental to recruit donors; therefore, adequate training of the professionals involved in this process is key⁽¹⁶⁾. In addition, the active listening performed by the professional provides the donor with an opportunity to express what he/she knows, thinks and feels, making it a moment of socialization of knowledge about his/her needs and about how to meet them⁽¹⁷⁾.

Although user embracement and social marketing actions present promising results in donor recruitment, they can only be evaluated after the time necessary for a new donation – at least two months for men, not exceeding four donations per year, and at least three months for women, not exceeding three donations per year⁽¹⁸⁾.

Replacement donation, as defined by the Ministry of Health⁽⁶⁾, is when an individual donates to meet the needs of a patient. In the hemotherapy service of Santa Maria, this type of donation accounted for 42.4% of donations of blood and platelets in 2014, rising to 52.2% in 2015. In a research carried out in three blood donation centers in Brazil⁽¹⁹⁾, replacement donation rates ranged between 24.3% and 53.6%.

Regarding apheresis donation of platelets, there was a significant increase ($p=0.033$) in the number of voluntary donors (54.5%) compared with the previous year in the present study, and a small decrease ($p=0.366$) in the number of replacement donations (9.2%). According to the data collected in the database of the hemotherapy service of the University Hospital, approximately one year ago there was no difficulty in meeting blood demand for most blood components, except for platelets. Given that, the increase in the number of voluntary donors of platelets by apheresis is considered positive given the importance of the increase in the number of these so as not to depend on replacement donors. Replacement donation causes distress to family members of needy patients – the family is often responsible for donor seeking. This need usually becomes a “hard” process for the family, mainly because the transfusion is a fundamental factor for continuing the treatment⁽²⁰⁾.

In addition, the population is still unaware of the need for blood transfusion caused by various health situations and thinks that it is an easy problem to be solved by relatives, military institutions or health professionals⁽²¹⁾; therefore, education and awareness campaigns must be carried out in a way that fosters solidarity within the population. An international research conducted to evaluate the reason for whole blood donation concluded that the most frequently reported reasons for donating blood for the first time were “influence of a friend” (47.2% of donors) and marketing (23.5% of donors). With regard to repeated blood donation, altruism and social responsibility were the most frequent reasons, with 68.4% and 16.0% of the respondents, respectively. Still in the same research, the most commonly reported obstacle to becoming a regular blood donor was “laziness” (19.1%), followed by “fear of needles” (10.5%)⁽²²⁾.

The lack of platelets to be transfused is a reality that distresses health professionals and, most of the time, causes discomfort to the relatives of patients who depend on this blood component⁽²⁰⁾. Although there was an increase in the supply of platelets from one year to the other in the present study, this value was not significant ($p=0.6143$); however, the suppressed demand had a significant reduction ($p<0.0001$) in 2015. Based on this, it should be noted that both demand and supply were higher, which is why the suppressed demand presented a reduction. The need for this blood component occurs in patients with thrombocytopenia and it is used to prevent spontaneous hemorrhage, which may occur in patients with platelet counts below $10,000/\text{mm}^3$, a reality of hemato-oncological patients undergoing chemotherapy⁽²³⁾.

Although global statistics indicate that blood donations do not follow the increase in transfusions⁽¹⁾, the results of the present study demonstrated that, despite the increase in the demand for platelets, there was a concomitant increase in the care of patients who needed this blood component, which reveals its greater availability in blood stock. This result favors the implementation of therapies that contribute to the improvement of the health of patients treated at a reference hospital for the treatment of adults and children with hemato-oncological diseases. It should be noted that strategies such as these are part of the process of health promotion, which encompasses social participation, empowerment and reorientation of health services, among other lines of action that aim to change people’s living conditions through changes in social determinant⁽²⁴⁾ – in this case, blood donation.

The limitations of the present study include the time available to verify the effectiveness of the social marketing and user embracement strategies, whose evaluation was very close to the end of the study. This fact did not allow a longer period for the return of the people who participated in the activities and those that would have to wait the necessary time for a new donation. It should be emphasized that studies that aim to verify the effectiveness of these types of strategies need to be monitored for a longer period of time, respecting at least the interval between donations. Considering that information is the basis for knowledge, and that the same applies to blood donation, its importance should be reinforced among the professionals involved in the donation process and the population, disseminating the education of the human act of donating blood.

CONCLUSION

It is possible to state that the strategies implemented in the period of this study contributed to the increase in the number of apheresis donations of platelets; however, there were no positive results with regard to the donation of whole blood. Actions aimed at recruiting blood donors need to be carried out constantly, and not in isolation, and it is necessary to have more than one strategy so that each one reaches a certain public in order to reach as many people as possible to maintain the stock of blood and blood components of the hemotherapy service in adequate amounts always.

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