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Abstract

Background: This study was conducted in the blood centre at MMDU, Mullana. The aim of study was to calculate

Design:

The paediatrics and gynecology departments make most requests for blood in most hospitals [13]. These variations may compromise the basic control guides which are planned towards the improvisation of the nature of the blood products. A great deal of medical and surgical specialties relies upon the constant blood supply. The main task for a newly set up blood centre is to administer quality management system in all levels of collection, processing and storage of blood [14]. Various reasons of discard of blood and its components are Transfusion Transmitted Infection (TTI) reactivity, expiration, insufficient volume, leakage, clot formation, haemolysed and return back unused after issue. Platelets have the highest incidence of discard because of their short shelf life, followed by Packed Red Blood Cell (PRBC) and Fresh Frozen Plasma (FFP) [15]. Preferably, expiration of blood and its components should be avoided. Nonetheless, due to imminent requirement to have stock available at all times and frequent uncertain emergencies allow the acceptance of low expiration rates imminently [16]. Units requested by wards, that are neither transfused, nor returned to blood bank (within defined time period and temperature as per the component issued) and units that have exceeded their shelf life are the two prime reasons behind wastage of blood in hospitals. The units (that are issued, but not transfused) kept between a temperature range of 1°C-6°C, can be accepted in compliance with one of the criteria's of U.S. Food and Drug Administration and AABB guidelines. The "30-minute" rule is still applicable in some blood centres, according to which RBC units can be accepted back by blood centres, if they are kept in temperature controlled containers since the time of issue to the time unit is returned and the unit is received back to blood centre inventory within 30 minutes. National Accreditation Board for Hospitals and Health care providers list wastage/discard rate 3rd among the 10 quality indicators. Regular transfusion audits should be carried out in the blood centre to know the utilization trends. Unnecessary transfusions may contribute

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| Months | Total discarded units | Total issued units | Discard rate |
|-----------|-----------------------|--------------------|--------------|
| August | 113 | 1114 | 10.14% |
| September | 79 | 1114 | 7.09% |
| October | 135 | 1114 | 12.12% |
| November | 157 | 1114 | 14.10% |
| December | 113 | 1114 | 10.14% |
| January | 79 | 1114 | 7.09% |
| Total | 643 | 4114 | 15.62% |

Table 8: Total discard rate during study period.

This table marks the number of discarded units in each month and in totality of 6 months. November was the highest contributor to the wastage rate with 157 units and 26.03%. October, 135 was a close second in terms of number of units as 135 of its units were discarded, marking the month for 17.30% wastage rate. Wastage of 113, 87 and 79 units in the months of January, August and December, marked the months for 16.23%, 11.86% and 11.86%, respectively. September was the month with least number of units discarded in terms of number, as well as percentage, as 72 of its units with a monthly wastage rate of 11.32% were discarded.

A total of 643 units were discarded in the span of 6 months from August, 19 to January, 20 and 4114 units were issued during this period. So, from the formula of calculating wastage rate, total discard rate of 6 months turned out to be 15.62% (Figures 10 and 11).

Discussion

In recent years, most countries have emphasized towards implementing various strategies in order to further a step towards reduction in discard rate at their blood centres. With new and better treatment techniques developing every day, precise and improved diagnosis of disorders requiring transfusions are being made possible. Efficient and thoughtful management at blood centres is the first step towards reducing wastage of blood, which can save countless lives. Recent Patient Blood Management is the key to reduce discard of blood.

A balance is required between supply and demand in order to provide sufficient supply of blood. At current rate, the supply of blood doesn't catch up with the demand for blood. The best way to keep a check on this balance in blood centres is to conduct self-audits to find out reasons for discard of blood and its components over a defined time period and assess if the reasons are avoidable. It helps in formulating different strategies to reduce the blood wastage [3].

The aim of this study was to evaluate the discard rate and its various causes in the blood centre of a University Medical College in North

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