

Report from BSMS open meeting 2006 workshop “Use of Group O Negative red cells”

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Background

The population in the UK is thought to have an O Negative prevalence of 6.7% and the NBS has suggested for some time that the ideal O Negative usage should be around 8 to 8.5% of all red cells. In reality the usage in England has been around 10.5%, and has shown very little variation from this. Disproportionate effort and expense is put into the collection of O Negative units from donors, and the NBS has become increasingly concerned about this issue. Judith Chapman presented some data from the BSMS at the opening of the meeting highlighting that the wastage for O Negative is running at 6% compared to 4% for red cells overall, which suggests that O Negative cells are being overstocked by hospitals.

The West Midlands were month on month higher than the national average of O Negative issues.

Format of workshop

The workshop started with a brief presentation detailing the O Negative issues from the perspective of the NBS, with particular reference to the initiatives that have been taking place in the West Midlands.

Following the presentation the group was divided into smaller groups to consider some of the issues that may affect usage of O Negatives by hospitals. The subgroups were each given one of the following questions to guide their discussions:

- Q1 – Stock holding and ordering – do hospitals regularly review?
- Q2 – Emergency O negatives – how many, rotation, policing?
- Q3 – Does the NBS contribute to high usage?
- Q4 – Is 8% a realistic target level?

These questions were based on comments received from hospitals in the West Midlands following the initiative to reduce usage in the region. The subgroups were encouraged to discuss whatever they felt was relevant, and to stray beyond these questions if necessary. The outputs from the subgroup discussions were discussed with the whole group at the end of the workshop.

Results of discussions

The results of both workshops have been brought together under broad headings

Q1 *Stock holding, rotation and ordering*

It was clear that there is wide variation in blood bank practice with regard to stock levels, stock rotation and stock ordering, and there are many influences on this. While most review their MSBOS regularly, it was not clear that this was also the case for blood bank stock levels. One participant did however report that their HTC annually reviewed the stock holding in the light of current practice. Rotation of stock within hospitals in the same Trust and with distant hospitals and remote fridges was felt to be an important factor in ensuring the efficient use of stock and avoiding wastage. Various practices was reported including pulling stock back once it had 14

days left on it, and rotating every week. A major issue in being able to achieve effective stock rotation was having adequate staff to perform this task. While it was agreed that this was an important duty, it was often not given the highest priority when staff levels were low. Stock rotation for smaller hospitals can be difficult. Some reported schemes between NHS trusts and smaller private hospitals that allowed rotation through the smaller site to minimise waste and excessive use of group O. Some private hospitals however reported that NHS Trusts were reluctant to entertain such schemes for fear of increasing their wastage figures. One NHS Trust that was involved in such a scheme reported that it worked very well for them, and they charged a small fee to the private hospital for the service – ‘everybody was happy’!

Distance from the Centre influences the amount of O Negative stock held, with long travelling times equating with higher stock levels. The number of remote fridges and satellite hospitals that needed to be stocked also had an effect. Also influencing stock levels were

- distance from the NBS centre
- number of deliveries each day
- the presence or not of Saturday deliveries.

The more difficult it is perceived that O Negative stock is to get in, the higher the stock that is held.

The procedures for ordering stock appeared varied with the majority suggesting a rather adhoc approach. It was suggested that inconsistency and a lack of continuity when ordering led to higher levels of stock than necessary. Over ordering of O Negatives was felt to be a particular problem at the weekends. This was felt to happen due to staff insecurity, and the feeling that a ‘full fridge was better prepared’ when there were no deliveries planned for the next 2 days! It was suggested that this might be more of a problem when junior staff were on call.

A comment was also made about the populations surrounding some hospitals. Where these are predominantly from ethnic minority groups the prevalence of O Negative in the population may be higher.

Use of O Negative for non O Negative patients.

The major reason for this was to use up the outdating stock. However, on occasion O Negatives are given to other groups as they are supplied as phenotyped stock from the NBS, or only group O was kept as irradiated stock. The majority reported keeping both O and A irradiated units. B and AB units were also stocked in the majority of cases, but not all.

Q2 *Emergency O negative red cells?*

Again there was very wide practice in terms of the number of ‘emergency O Negatives’ available, and how their use was managed. Some trusts keep as little as 2 units in a central fridge while one trust reported that their ‘Treatment Centre’ insists on keeping 6 units of emergency O Negatives on site following an incident some time ago. These were reported to be very rarely used. Variations in the number of O Negatives kept in remote fridges were said to be due to factors such as the location of the blood bank in relation to the trauma unit and theatres, and whether there was blood bank on call on site.

Policing of emergency O Negative usage was discussed. In the majority there appeared to be no follow up of the use of the emergency units though some sent paperwork out with the flyers for return following their transfusion. A few had Transfusion Practitioners who followed up their use with ward staff to ascertain appropriateness of usage. This was felt to be good strategy with an in-built element

of education. It was felt that in the majority of cases that clinicians wanted more O Negatives available for emergency use than blood banks felt was appropriate. It was suggested that emergency O Negative is used less now than in the past as group specific should be available in 5 minutes.

Q3 *NBS contribution to high O Negative usage.*

The main influences from the NBS on high usage have largely been covered above and relate to the distance of the NBS centre from hospitals, the frequency of deliveries, and whether there were routine weekend deliveries. In addition the timing of deliveries was raised as an issue. The issue of phenotyped units as O Negatives was on the whole felt to contribute very little, as the numbers are very small. It was recognised however some patients with multiple antibodies may receive O Negative, and some sickle cell patient who should ideally receive Ro units often get O rr. A short shelf life when received from the NBS was raised as a potential factor in increasing usage and wastage. The problem of receiving all units with the same expiry date on was also raised as a potential problem in avoiding wastage and use for other groups.

Q4 *Is 8% a realistic target?*

As an ideal it was suggested that this was a good target, but in practical terms it was felt that this was unlikely to be achievable. While some hospitals are ideally situated in terms of proximity to NBS centre, ideal case mix, active HTT, experienced and well staffed blood bank etc....most are not. On the whole it was felt that this was not a realistic target for many hospitals that were subject to multiple reasons why they could not get usage down to this level. The reasons given are mostly discussed above and include geography with respect to the NBS centre, number of and location of fridges, presence of local on call, local population diversity and patient case mix/specialities served.

Having said that, it was clear that current practice in many places could be considerably improved.

Best practice:

Based on the above discussions we have pulled together the best suggestions and examples of how O Negative usage can be managed.

Stock rotation/management	<ul style="list-style-type: none">• Annual review of MSBOS• Annual review of stock holding• Regular rotation between small and large hospitals• Timely dereservation from remote fridges• Ensure that stock management is a priority• Consider employment of product handlers• Small private hospitals should seek partnerships with NHS Trusts
Keep sufficient stock of other groups	<ul style="list-style-type: none">• Should keep B and AB units• Should keep A as well as O irradiated units
Effective management of 'flying squad units'	<ul style="list-style-type: none">• Regular review of stock holding• Follow up each case• Educate clinicians on appropriate use• Promote early use of group specific
Supply from the NBS	<ul style="list-style-type: none">• Frequent deliveries aids stock management• Avoid large deliveries with same expiry date
Establish a realistic target for O negative usage (8% may not be achievable)	<ul style="list-style-type: none">• Ethnic diversity• Geography• On call set up• Case mix