

ORIGINAL ARTICLE

Survey of the implementation of the recommendations in the Health Services Circular 1998/224 'Better Blood Transfusion'

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SUMMARY. This report describes a questionnaire survey on the implementation of the recommendations of the Health Services Circular (HSC) 'Better Blood Transfusion' 1998/224 for improving transfusion practice. The survey was carried out to inform a second UK Chief Medical Officers' symposium on 'Better Blood Transfusion' in October 2001. Sixty-nine percent of hospitals where blood is transfused in England participated. The results show that, by 2001, most hospitals had established Hospital Transfusion Committees (HTCs), developed protocols for the process of transfusion and were participating in the Serious Hazards of Transfusion (SHOT) scheme. However, there was limited compliance with other recommendations, including the provision of

training for staff involved in transfusion and information to patients, the development of protocols for the appropriate use of blood, the performance of audits of transfusion practice and the introduction of peri-operative cell salvage. The survey did not determine the reasons for this limited compliance. New initiatives including the issue of a further HSC on 'Better Blood Transfusion' are aimed at enabling hospitals to improve their transfusion practice in a more systematic way than that was found in the results of this survey.

Key words: blood transfusion, questionnaire survey, transfusion practice.

Attention has focused on blood transfusion practice in recent years for several reasons. These include the recommendations arising from the Serious Hazards of Transfusion (SHOT) scheme, concerns about the risk of transmission of variant Creutzfeldt–Jakob disease (vCJD) by blood transfusion, the increased costs associated with new safety measures such as leucocyte-depletion of blood components, and documented variations in transfusion practice (The Sanguis Study Group, 1994; Murphy *et al.*, 2001). The Health Services Circular (HSC) 1998/224 'Better Blood Transfusion' detailed the action required of National Health Service (NHS) Trusts and clinicians to improve transfusion practice; its recommendations were based on presentations and workshops in a symposium held by the UK Chief Medical Officers' on *Evidence-Based Blood Transfusion* on 6 July 1998 in London (NHS Executive, 1998).

Limited information was available on the implementation of the recommendations of the HSC 1998/

224 as its review date of December 2001 approached. A survey, carried out in 1999 by the UK Blood Transfusion Services/National Institute of Biological Standards and Controls Joint Guidelines Committee's Standing Advisory Committee on Information Technology, found that 84.5% of 317 hospitals indicated that they had a Hospital Transfusion Committee (HTC) (Serious Hazards of Transfusion (SHOT) scheme, 2000) and 305 of 426 (72%) hospitals surveyed participated in the SHOT scheme in 1999/2000 (Serious Hazards of Transfusion (SHOT) scheme, 2001). This report describes a questionnaire survey on the implementation of the recommendations of the HSC 'Better Blood Transfusion' 1998/224 that was carried out to inform the second UK Chief Medical Officers' symposium on 'Better Blood Transfusion' in October 2001.

METHODS

A questionnaire survey agreed by the Department of Health about the implementation of HSC 1998/224 'Better Blood Transfusion' was sent by the National

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Blood Service in August 2001 to all Chief Executives in hospitals supplied with blood by the National Blood Service (320 hospitals). It was initially sent to Chief Executives in hospitals because they were considered to be responsible for overseeing the implementation of the recommendations in the HSC 1998/224 'Better Blood Transfusion'.

One hundred and thirty two of 320 NHS Trusts and private hospitals sent returns, a response rate of only 41%, possibly reflecting the mode of distribution of the questionnaire. Hospitals that did not respond to the questionnaire were provided with another opportunity to do so in early 2002 by direct mailing to hospital blood bank managers; a further 88 hospitals sent returns giving a total of 220 returns and an overall response rate of 69%. The questionnaire was completed by the blood bank manager in 116 (53%) of the 220 hospitals completing a return, a consultant haematologist in 44 (20%), a consultant from another speciality in 11 (5%), a hospital manager in 25 (11%), a transfusion nurse in seven (3%) and the job title was not specified in 17 (8%). Only one return was accepted from each hospital.

RESULTS

There was a considerable range in the units of red cells transfused in the hospitals that responded to the questionnaire, with 15.5% of hospitals transfusing less than 1000 units per year and 7.7% of hospitals transfusing over 20 000 units per year. However, the majority (51.4%) of hospitals transfused between 5000 and 20 000 units per year. One hundred and sixty-one (73%) of hospitals had CPA accreditation for laboratory transfusion.

The results of the survey are described in relation to the main recommendations of the HSC 'Better Blood Transfusion' (NHS Executive, 1998).

All hospitals where blood is transfused should participate in the SHOT scheme and have HTC's to oversee all aspects of blood transfusion

Participation in SHOT. Two hundred and eleven of the 220 (96%) hospitals reported participation in SHOT. Those hospitals that reported nonparticipation were low-volume users (<1000 units per year). Those who were not sure about their participation or did not answer the question were low-volume users with one exception.

Establishment of HTC's. Two hundred of the 220 (91%) hospitals responding to this survey have HTC's. However, a minority (9%) of 20 hospitals do

not; 65% of the hospitals without HTC's had a blood usage of <5000 units per year. Fifty-six percentage of HTC's had met three or more times in the year 2000/01 and the remainder of HTC's had met twice or less.

All hospitals where blood is transfused should have agreed and disseminated protocols for blood transfusion, based on guidelines and best practice supported by in-house training of staff

Protocols for the process of transfusion. Two hundred and fifteen of the 220 (98%) hospitals responding to the survey have protocols in place, covering blood sample collection for compatibility testing, the collection of blood from blood transfusion refrigerators and its delivery to clinical areas and checking and administering blood. A minority (4%) of hospitals did not have or are unsure whether they have a protocol for the investigation and management of adverse events associated with transfusion. Hospitals lacking one or more of these protocols number 11 (5%). The lack of protocols does not seem to relate to low usage of blood – eight of the hospitals lacking at least one protocol used between 5000 and 20 000 units per year.

Training. The response to this question was low with failure to respond varying between 15 and 48%, suggesting that respondent knowledge of the training provided by their hospital is low. The response to this question was particularly poor in relation to the training provided to medical staff.

Categories in which more than 70% of hospitals could positively confirm training were:

- 1 sample collection – phlebotomists (79%)
- 2 blood administration – nurses (78%).

There were a number of categories in which less than 50% of hospitals were able to positively confirm training:

- 1 blood collection – porters (47%)
- 2 sample collection – medical staff (48%)
- 3 blood collection – medical staff (21%)
- 4 blood administration – medical staff (34%)
- 5 adverse events – medical staff (42%).

No relationship appeared to exist between the provision of training and the following factors: number of units transfused, the presence of a transfusion nurse, CPA accreditation, and participation in SHOT.

Thirty (14%) of the hospitals responding to this survey indicated that they had a transfusion nurse. This agrees with the information from the Specialist Practitioners of Transfusion that there are at present about 45 transfusion nurses in England. The presence

of a transfusion nurse was not clearly related to the size of the hospital, assessed by the number of units of blood transfused. None of the hospitals lacking transfusion protocols had a transfusion nurse.

HTCs should promote best transfusion practice through local protocols based on national guidelines

National guidelines produced by the British Committee for Standards in Haematology (BCSH) (BCSH, 1999) exist for all the areas of transfusion practice that hospitals were asked to respond to in the questionnaire, i.e. implementation of a maximum surgical blood order schedule (MSBOS), emergency and massive transfusion, use of red cell and platelet transfusions, use of fresh frozen plasma (FFP) and the management of excessive anticoagulation with warfarin.

Protocols for the use of blood. Similar to the responses to the previous question on training, large numbers of hospitals were unable to answer the questions on HTC-approved protocols. Only in the case of MSBOS (67%) and the usage of FFP (50%) were 50% or more hospitals able to confirm the existence of a protocol approved by the HTC. There were low rates in the case of protocols for the use of red cell transfusions (34%) and the management of excessive anticoagulation with warfarin (35%).

HTCs should lead multiprofessional audit of the use of blood components, focusing on specialities where demand is high

One hundred and seventy three (79%) hospitals had carried out at least one audit since 1999, but 47 (21%) hospitals had not carried out any audits since 1999. Forty-eight (22%) hospitals had carried out four or more audits in that time. Audits were most frequent amongst the hospitals with medium and high blood usage and those with CPA accreditation. There was no relationship between the number of audits and the presence of a transfusion nurse.

All hospitals where blood is transfused should have explored the feasibility of autologous blood transfusion. In particular, they should have considered the introduction of peri-operative cell salvage

The usage of autologous transfusion varied with the specific type of autologous transfusion; 41 (19%) hospitals in the case of acute normovolaemic haemodilution, 82 (37%) in the case of cell salvage and 113 (51%) for predeposit. It was striking that hospitals were unable to accurately estimate the number of units involved for any of the types of autologous

transfusion – only in the case of predeposit autologous transfusion were more than 50% of hospitals able to answer this question.

Although 113 (51%) hospitals indicated that they undertook predeposit autologous transfusion, only 13 (6%) used more than 20 units per year. The same was true for acute normovolaemic haemodilution (only 4% of hospitals reported the use of more than 20 units). In the case of cell salvage, 18 (8%) hospitals reported the transfusion of more than 100 units per year.

Patient information

The HSC 1998/224 'Better Blood Transfusion' did not make specific recommendations about providing patients with information about blood transfusion, except in the case of cell salvage. However, the provision of information about blood transfusion for patients who may receive one can be considered to be a good practice.

One hundred and twelve (50%) hospitals indicated that written information is provided for patients about blood transfusion. Only 17 (8%) hospitals estimated that more than 50% of transfused patients in their hospital received written information about transfusion.

Suggestions for improving transfusion practice

The final question asked respondents to indicate what they considered would be the best three ways of improving blood transfusion practice in hospitals. The total number of hospitals responding to this question was 186 (Table 1).

Other suggestions included:

- 1 greater accessibility to advice;
- 2 expansion of autologous transfusion service;
- 3 increased consultant sessions and more involvement by clinicians;
- 4 make personnel more informed about transfusion hazards and protocols;
- 5 proper funding for transfusion departments;
- 6 ensure enough staff resources;
- 7 National Blood Service publications to be made available to independent sector users, including guidelines;
- 8 better policy on postoperative transfusion, so unused units can be returned to stock;
- 9 more information for patients including risks/benefits of transfusion;
- 10 national seminars for prescribers;
- 11 expand accreditation of transfusion laboratories to cover all aspects of the process;

Table 1. The most frequent responses to the question concerning the best ways of improving transfusion practice in hospitals (351 responses from 186 hospitals)

Increased education and training	108
Appointment of a transfusion nurse	86
Electronic bedside checking/patient identification procedures	54
Better attendance at Hospital Transfusion Committees	27
Consider alternatives to transfusion	16
Improved systems for data collection and audit	26
Improve communication between the hospital blood bank and other departments	14
Standardization of procedures and indications for transfusion	11
Implementation of maximum surgical blood order schedule	5
Introduction of cell salvage	4

- 12 adherence to blood transfusion schedules/policies;
 13 greater availability of SHOT reports.

DISCUSSION

A number of issues towards the end of the 1990s resulted in the development of recommendations for improving transfusion practice by the Department of Health (NHS Executive, 1998). The factors leading to this initiative included concerns about the blood supply in the face of increases in the demand for blood and intermittent blood shortages, increases in the cost of blood associated with universal leucocyte-depletion of blood components and nucleic acid testing, data from the SHOT scheme showing that the safety of transfusion should be improved and concerns about the transmission of the variant vCJD disease by blood transfusion. The recommendations detailed the actions required of hospitals and clinicians to improve transfusion practice.

The results of this questionnaire survey show that, by 2001, most hospitals had established HTC's, developed protocols for the process of transfusion and were participating in the SHOT scheme. However, there was poor implementation of other recommendations requiring a more continuous commitment to better transfusion practice and backed by the senior hospital executive with the necessary resources. The recommendations which were poorly implemented included the provision of training for staff involved in transfusion, information to patients, the development of protocols for the appropriate use of blood, the performance of audits of transfusion practice and the introduction of peri-operative cell salvage.

A number of initiatives have occurred since 1998 to assist and encourage hospitals in improving transfusion practice. These are described in the output of the second UK Chief Medical Officers' symposium on 'Better Blood Transfusion' held in London in October 2001 (Depart-

ment of Health, 2002); this new HSC sets out a programme in the form of an action plan to ensure that 'Better Blood Transfusion' becomes an integral part of clinical practice, and to make blood transfusion safer and to avoid the unnecessary use of blood. The HSC recognized the importance of providing better information to patients and the public about blood transfusion to achieve these aims.

The new initiatives include the establishment of a Chief Medical Officer's National Blood Transfusion Committee in England (Chairman: Professor E. Gordon-Smith) to promote 'Better Blood Transfusion', primarily by providing advice to HTC's through a network of Regional Transfusion Committees. Other initiatives include more exacting standards for good transfusion practice in the Clinical Negligence Scheme for Trusts, the establishment of national comparative audit for transfusion in a scheme organized by the Royal College of Physicians and the National Blood Service following on from a previous series of audits (Murphy *et al.*, 2001) and the development of the transfusion nurse (specialist practitioner of transfusion) role (Gray & Melchers, 2002). These and other supporting initiatives should enable hospitals to implement the recent 'Better Blood Transfusion' recommendations and improve their transfusion practice in a more systematic way than was found in the results of this survey on the compliance with the recommendations of the HSC 1998/224 'Better Blood Transfusion'.

Although this survey was limited in its scope and the range of questions asked about transfusion practice in hospitals, it provided useful information to inform the second UK Chief Medical Officers' symposium on 'Better Blood Transfusion' in October 2001. The initial and overall response rates were somewhat disappointing, perhaps reflecting the initial mode of distribution to NHS Trust chief executives and the difficulty in identifying who was responsible for blood transfusion in hospitals at the time of the survey. The recommendation in the

new HSC (Department of Health, 2002) that there should be an identified lead consultant for transfusion in each NHS Trust may result in a better response to a repeat survey in the near future to assess compliance with its action plan which should have been implemented in hospitals by April 2003.

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