

The physician may be asked to respond in writing within a specific timeframe. A copy of the pertinent transfusion guidelines should be included with the letter to the ordering physician. In some institutions, a copy of the correspondence is also sent to the department chair. When the ordering physician is a resident, some institutions will include both the resident and the attending physician in the process; others will interact primarily with the attending (as the responsible physician) and leave the follow-up education of the resident to the attending physician. In either case, the response of the physician(s) should be submitted in a format suitable for inclusion or reference in the written proceedings of the transfusion committee.

Each case requiring additional information is assigned to a physician member of the transfusion committee for review before the committee meeting. The reviewer should be provided with information regarding the component(s) administered, the reason for review, and the physicians involved. When the committee, after review of the initial request and of additional information provided by the clinician, agrees that a transfusion was not justified, a letter summarizing those findings is sent to the ordering physician. Copies are also sent to the department chair for inclusion in that department's quality assurance program and may be used in the medical staff review process for physician credentialing and renewal of hospital privileges. It is also advisable that an acknowledgment letter be sent to physicians who provide documentation that justifies the transfusions.

Transfusion audits are meant to improve patient care by ensuring that transfusion decisions are based on evaluation of existing data and conform to generally accepted criteria. The most important feature of documentation is a physician note in the progress note section or another appropriate part of the patient record stating the indications for transfusion and the expected results. Physicians whose ordering and transfusion practices are significantly different from those of their peers are identified during the review process. Those who repeatedly administer unwarranted transfusions can be identified and counseled.

Using Audit Results

Evaluating Laboratory and Clinical Outcomes

The percentage of components transfused for prophylactic purposes in patients who lack the ability to produce blood elements can vary

by institution, but in those institutions with a significant hematology/oncology population, this can account for a large percentage of transfused platelets. For these transfusions, the relevant outcome parameter may be the achievement of a laboratory value (eg, platelet count) greater than an initially targeted transfusion threshold. For transfusions given under these circumstances, the audit should include both pre- and posttransfusion laboratory values to allow for an assessment of whether the goals of the transfusion have been met. With current information systems, these values can be easily retrieved and collated with the records of product release.

Pre- and posttransfusion laboratory values may also be of value in assessing transfusion efficacy in a variety of clinical situations where transfusion is used for therapeutic purposes. However, while laboratory values are a necessary component in the evaluation of the indication for transfusion, the clinical situation also must be taken into account. Decisions often must be made in the absence of laboratory data that may not have been available at the time the transfusion was ordered or administered. The factors influencing transfusion decisions should be noted in the patient record and must be considered in an evaluation of the appropriateness of transfusion. For example, the presence of diffuse oozing that is unresponsive to electrocoagulation or ligation of bleeding sites, particularly if accompanied by bleeding from mucous membranes and intravascular cannulation sites, can be considered an indication for platelet transfusion even before availability of a platelet count.

Reporting Audit Results

The transfusion committee should send relevant reports to the institution's credentialing and quality assurance committee. Such reports should be transmitted, even if no problem areas are identified. If physicians are identified who persist in inappropriate transfusion practices that cannot be resolved at the department level, such information should be documented in the practitioner's credentialing file, per the policies of the medical practice committee. Only patterns of inappropriate transfusion practice, not isolated events, should be reported to the credentialing committee. In some states, this information may become public; therefore, extreme care should be exercised in determining the information to be included and the actual content of the notation. Feedback via quality assurance monitoring

data graphed by department can be posted on a monthly basis and can also be effective in highlighting unusual patterns of practice.

Reviewing Blood Ordering Practices

In addition to assessing the clinical appropriateness of transfusions given, the transfusion committee may wish to periodically review the circumstances that initiated the transfusion request in order to improve the efficiency of the laboratory's operation and maintain adequate blood availability. Any of the multiple process steps involved in blood transfusion—from the blood order to outcome of the transfusion—can be measured and monitored. Particular emphasis should be placed on interfaces between departments, because most problems occur at the interface steps.

Some facilities find it useful to determine the crossmatch-to-transfusion (C:T) ratio. Such facilities can determine the C:T ratio for the institution as a whole, or calculate C:T ratios separately for each department or division. In evaluating blood-ordering practices, a C:T ratio less than or equal to 2.0 for surgical patients is usually considered appropriate, whereas medical patients typically have a C:T ratio that is near 1.0.⁵³

Transfusion services that have discontinued prospective cross-matching (and instead perform immediate-spin or electronic cross-matching only on receipt of an order to transfuse) for selected patients may use alternative procedures for evaluating blood-ordering practices. For example, assessing the frequency at which a transfusion request is received prior to a request for a type-and-screen procedure may provide insight into the ability of the clinical system to predict transfusion need. The review process might also include an evaluation of whether type-and-screen procedures are ordered when appropriate.

A maximum surgical blood-ordering schedule (MSBOS) has been used by many institutions to project perioperative blood usage and reduce perioperative crossmatching. Table 3 shows one example of a MSBOS. The MSBOS correlates commonly performed procedures with an appropriate pretransfusion testing order (none, type and screen, crossmatch of a certain number of RBC units) to ensure that there is adequate blood available for the majority of procedures. In patients who have antibodies or unresponsive anemia, the number of RBC units requested may be increased. Although a MSBOS compiled