Preoperative Antibody Screens - How to Ensure Timely Receipt ... Consistently?

On January 26, 2001 the e-Network learned that one of its members was planning to meet with the chair of his hospital transfusion committee, in order to discuss a problem surrounding pre-operative antibody screening (before procedures that are anticipated to require transfusion). The member requested guidance from the e-Network in this regard. According to the member, every couple of months there is a crisis created in his blood bank, because the surgeons routinely send specimens for type and screen (or type and cross) to the blood bank, but **often these samples do not arrive at the blood bank** ***until or as*** **the patient is being prepped for surgery**. In the occasional case where it is discovered that the patient has an antibody, the surgeons are unsympathetic and may even say they need blood (the patient is open on the operating table). If blood is needed, the poor blood bank techs are forced to scramble. This member thinks that it is unfair to the patient (and dangerous) - especially on scheduled procedures. The member **wanted to know if it is too much to require that a procedure not be started until the results from the antibody screen are back**, and what is the experience of the e-Network. Has anyone worked out a good system to keep such occurrences to a minimum?

The following responses (some of which offer very good suggestions) were received:

1. Not only is pre-surgical antibody screening good practice, it is the **standard of care**. If a problem were to arise the surgeon and hospital would be in a bad position, not to mention the patient. I am sure that hospital administration, perhaps with the input of institutional quality and risk management staff, could revise the system and establish controls on the surgeon to prevent this unacceptable practice.

2. We do not have a formal "maximum surgical blood order" policy at our hospital but do have standard orders for certain types of surgeries. We receive a next day surgery schedule in the Blood Bank on the PM shift. The techs are required to review it and make sure that we have specimens for in-house patients that have a procedure scheduled requiring blood products. The PM shift is responsible for making sure that a specimen is current and blood products are set up. We also draw pre-operative patients within 3 days of surgery: they come as an outpatient admission, are arm banded in admitting and instructed not to remove the armband. This way we can have more lead time if the antibody screen is positive. Another comment: there was not a process for drawing blood bank specimens on pre-admit patients six years ago. We used a Quality Improvement team to provide a solution to this problem - had representatives from admitting, lab, surgery, nursing floors.

3. The key is getting blood orders from the surgeons in a timely fashion, and when the patient is under anesthesia is not the appropriate time. I suggest getting together with administrators, surgical chiefs, OR staff, and the medical director of transfusion services to establish meaningful procedures about pre-operative orders. This is, of course, easier said than done. One specific procedure that has helped us logistically is to **extend the time period** that we can use pre-operative samples. When a patient comes in for pre-operative blood work, a sample is drawn for type and screen. A blood bank bracelet is placed at the time of the drawing, and a type and screen done the day of the draw. If the patient has not been pregnant or transfused in the last three months, and the antibody screen is negative, then that sample is considered good for 14 days (rather than three days), and is used for immediate spin crossmatching on the day of or night before surgery. Of course, if the antibody screen is positive, further workup is done. Since most of our patients come for pre-operative blood work within the two week window, we usually don't have to redraw the day of surgery. This has helped at one of our hospitals where the surgeons are pretty good about having posted blood orders before the day of the operation. We still have similar problems at our other hospitals.

4. I would address this question to 1) the hospital's risk manager, 2) the hospital's malpractice insurance carrier, 3) the surgeon's malpractice insurance carrier, and 4) the state board of medical examiners. In my experience bad behavior on the part of narcissistic surgeons is most easily corrected by a real or implied threat. Logic rarely works.

5. Many experts in the field of transfusion medicine have lectured and published extensively about obtaining pre-admission crossmatches on patients who have neither been transfused nor pregnant during the previous 3 months. For these elective procedures one can obtain a crossmatch sample **well in advance of the date of the scheduled procedure**. This includes a majority of most same day surgery admission patients. When units are ordered for crossmatch, the antibody screen can be done in a timely period following receipt of the sample.

6. This was a long standing problem for us, too, until we bit the bullet and created a system for storing and tracking samples for **up to 30 days** when collected in Pre-Admission Testing. To qualify for use of this sample at the time of surgery, the outpatient had to not have been pregnant or transfused in the last three months at the time of phlebotomy and (checked again on the day) of surgery. The nurses in our Same-Day Surgery Program have been very careful about checking these issues for us and getting a new sample, if appropriate. This protocol development took work up front - validating the sample holding time, setting up forms and protocols, training, etc. - but it has erased an ongoing headache. (Systems ***can*** be re-worked!)

7. We **do not allow the case to start** if it is one of those that are sure blood users, unless the type and screen is completed. Furthermore, we will call the OR and notify them that there is an antibody, that it will take us a specified number of hours to find compatible blood and that they can not start the case. We have also established a procedure where the type and screen for preoperative patients is good for 14 days. Thus, the event described by our colleague is very uncommon at the present time.

8. Results from the antibody screen are put in the laboratory computer system and available to the surgeon and appropriate staff in the Operating Room. They **routinely check the results of the screen prior to surgery**. If the specimen was not received, it will thus be noticed prior to surgery starting. Moreover, a copy of the surgery schedule with the various requests for blood for each case is distributed to the blood bank the day prior to surgery. If a clot is missing the blood bank tech can request an additional clot.

9. While working the "graveyard" shift at a large tertiary care hospital in Los Angeles, I came across this situation occasionally as the Operating Room was starting their new day. This situation is usually resolved by having a member of the care team **call the night before surgery to verify** that a type and screen or type and cross had been performed or received yet. In our teaching hospital this was usually performed by an intern or medical student, but the nursing staff could be trained to do this as well. We also had a pre-operative list delivered to the transfusion service the night before and listed whether a specimen was available, what tests were ordered, how many units crossmatched, and how many more units could be crossmatched with the remaining plasma for every patient on the list. This list was updated throughout the night and picked up by Operating Room staff with the pre-operative crossmatched blood by 0600. This process kept the number of cases of patients on the table without blood to a minimum. With unscheduled cases, our response was to let the physician (usually a surgical resident at this point) know their options were: 1) to take uncrossmatched, non-antigen typed, type-specific red cells or wait for the antibody to be identified, units antigen typed and crossmatched. We usually had an idea after the antibody screen was done whether it was going to take a short while or a long while, so we were able to give an estimated time to have units available. After that it was their call, though the pre-operative list kept these instances to a minimum.

10. We actually experience very few problems like this. Probably this is because our pre-operative screening unit almost always gets a type and screen at the time of the preoperative evaluation, when same day surgery (patient admitted the day of the surgery) or outpatient surgery is planned. The pre-operative screening is usually done 3-5 days prior to the planned surgery. Thus, the only problems we experience are either anticipated or those that occur when a particular blood type winds up being in high demand on a day our supply is low (e.g. multiple O-negative hearts or transplant surgeries on a Monday morning, when our supply has been depleted by a bleeding aortic aneurysm life-flighted in Sunday night). **There is no excuse for not doing a type and screen ahead of time when the surgery is planned!** The patient will undoubtedly have had other screening labs done at some point.

Please submit comments to the e-Network Forum.

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Addenda: