

TURNAROUND TIMES

Department of Pathology and Laboratory Medicine
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The University of Kansas Medical Center
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Decrease transfusions with "Specimen in Lab." Lowell Tilzer MD, PhD

Patients in Intensive Care Units undergo many diagnostic tests. Serial CBCs and Chemistry profiles, sometimes several times a day, can produce a "nosocomial" anemia. The blood loss can tip the scales to trigger a transfusion of Leukocyte Reduced Red Blood Cells (editors note: remember, as of July 1, 2006, all cellular blood products are prestorage Leukocyte Reduced).

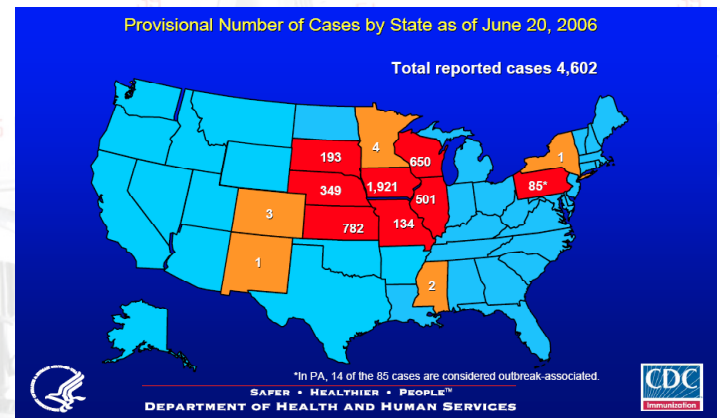
There is something, however, that can be done to reduce these "nosocomial" anemia transfusions. First, half fill the chemistry and hematology vacutainer tubes with blood. Our automated chemistry system requires a 7 mL tube, while hematology requires 4 mL lavender top tubes. In general, most tests require only several hundred microliters of blood, serum, or plasma. Thus, 3.5 mL of blood for chemistry (2 mL for CBC) is adequate for more than 99% of our tests. The exception to this rule is coagulation testing. Blue top tubes are special in that they require a 9:1 mixture of blood and the citrate anticoagulant. The amount of vacuum in the tubes is specially adjusted to fill to this exact ratio.

The second way to decrease blood draws is to send us an order that states, "specimen in lab; add serum widget." Once your order is received in the lab, we have a sophisticated robot that can automatically locate a specimen up to three days old, and sometimes even older. The sample will automatically be removed from the refrigerated "stockyard," decapped, analyzed and the results sent to SMS-Net, without a technologist even knowing the testing is being done, let alone handling the specimen! By using the "specimen in lab" program, some hospitals claim to decrease red cell transfusions by as much as 10%. Fewer transfusions produce fewer adverse transfusion reactions and reduce postoperative infections as well as length of stay.

So before doing extra phlebotomies on your patients, always think about blood that may be in the lab - and write orders for the new tests to be added to samples already available for testing. This will help keep the blood in the patient.

General Information on the Mumps Outbreak and Laboratory Testing Rebecca Horvat PhD

Several cases of mumps were reported in Iowa starting in December 2005. Since that time, there has been a large number of cases recognized in Iowa, and in surrounding states including Missouri and Kansas. CDC reports that as of June 30, 2006 there were a total of 4,602 documented cases in 13 states. In Kansas there have been 732 cases and 134 in Missouri.



CDC presentation July 2006

It appears that the outbreak started on a college campus. In colleges there are groups living, dining, and studying together, in the same spaces which make disease transmission more likely. These outbreaks sometimes then spread to the community. This outbreak strain of mumps is the same as the one that caused a large ongoing outbreak in the United Kingdom (UK) with more than 60,000 cases.

The classic symptoms of mumps include parotitis, either unilaterally or bilaterally. This parotitis develops 16 to 18 days after exposure. Swelling may also be seen in the submandibular and sublingual gland. Nonspecific symptoms including myalgia, anorexia, malaise, headache, and low-grade fever may precede parotitis by several days. Only 30-40% of mumps infections produce typical acute parotitis. In 15-20% of infections, cases are asymptomatic. In symptomatic patients fever may persist for 3-4 days and parotitis, when present, usually lasts 7-10 days. Persons with mumps are usually considered infectious from 3 days before until 9 days after onset of parotitis.

The mumps virus replicates in the upper respiratory tract and is spread through direct contact with respiratory secretions or saliva or through fomites.

Laboratory criteria for diagnosis

- Positive serologic test for mumps immunoglobulin M (IgM) antibody, or
- A four-fold rise between acute- and convalescent phase titers in mumps-specific immunoglobulin G (IgG)

antibody levels, or

- Isolation of mumps virus from clinical specimen

Detection of mumps viral RNA by reverse transcription polymerase chain is available from a few public health laboratories but does not appear to be more sensitive than culture.

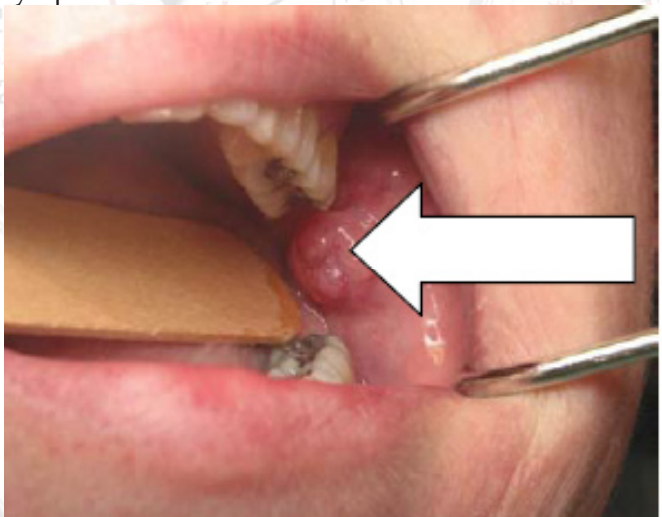
Clinical diagnosis of mumps may be unreliable, thus suspected cases of mumps should be laboratory confirmed. As with any disease, lab work should be used in conjunction with clinical presentation (signs and symptoms).

Mumps should not be ruled out in someone with negative laboratory tests who is vaccinated if they have symptoms consistent with mumps.

For laboratory testing, the following recommendations for specimens collection should be followed.

It is highly recommend that both serum samples and a mumps viral specimen (oral fluid or urine) be collected on each person with suspected mumps as close to symptom onset as possible.

- Serologic testing: Collect 7-10 ml of blood in a red top or serum separator tube (SST). Store and ship specimens cold. Acute serum: collect within 5 days after symptom onset Convalescent serum: collect within 2-5 weeks after symptom onset



CDC, May 2006

- For the mumps viral culture specimen a parotid gland/buccal swab is the preferred specimen. Mumps viral samples: Collect buccal swab, or urine sample up to 9 days after symptom onset. A Dacron or cotton tipped swab can be used for the collection of the buccal swab or throat swab.

A parotid gland/buccal swab provides the best viral sample. Massage the parotid gland area (the space between the cheek and teeth just below the ear) for about 30 seconds prior to collection of the buccal secretions.

The parotid duct (Stensen's duct) drains in this space near the upper rear molars.

Place swab in a tube containing 2-3 mls of viral transport medium (obtain from microbiology lab)

Urine: collect 5-10 mls from clean catch urine and store in a screw top sterile container. Keep samples refrigerated if there is more than 2 hour delay in transporting the samples to the lab.

References

1. MMWR, Update: Multistate Outbreak of Mumps -- United States, January 1--May 2, 2006. May 18, 2006 / 55;1-5.

Educational Opportunities Jigar S Patel, MD

The Department of Pathology and Laboratory Medicine Transfusion Medicine Service is offering its services for educational events within departments throughout the hospital. A recent mini lecture series given to surgical residents was well received. Topics for discussion can be tailored to departmental and resident educational needs. Suggested Topics include:

- Basic Transfusion Testing
- Basic Blood Component Therapy
- Transfusion Triggers
- Transfusion Reactions
- New Models in Coagulation
- Therapeutic Apheresis
- Transfusion Transmitted Infections
- Emerging Pathogens

Please contact Jigar Patel at jpatel2@kumc.edu for further details regarding these topics and lectures.

As is customary the Department of Pathology and Laboratory Medicine seeks to enhance the care of our patients through conferences, tumor boards, mortality and morbidity conferences, and patient specific discussions. Please do not hesitate to utilize these services to their fullest.

Turnaround Times Archive

Back issues of the Turnaround Times are available at:

<http://www2.kumc.edu/pathology/newsletter.html>

Or

<http://www2.kumc.edu/pharmacy/clinicallabs.htm>