

Putting Babies First (10:01)

PAT BLAKE

(Picture of text: Newborn screening policies and practices may vary by state.)

(Picture of text: Consult with your state's newborn screening program regarding collection policies and instructions.)

(Music)

(Text: Putting Babies First with Baby's First Test)

(0:24)

Female Narrator: Four million babies are born in the United States each year. (picture of baby in newborn nursery crib; picture of baby with mom and dad; picture of nurse with baby in newborn lab) More than 5,000 arrive with a genetic or metabolic condition. By obtaining a few drops of blood through a heel prick collection, babies can be screened for these conditions during the first few days of life. The result could mean early detection and treatment of conditions that otherwise could cause irreversible neurological damage, coma, or death. Every day, healthcare professionals throughout the country collect blood spots from babies. The specimen then is sent to the public health laboratory to be screened for at least 29 different conditions. However, without following the correct procedure of collecting these samples, laboratories cannot process the results properly, which potentially delays vital treatment for newborns. Laboratory scientists can answer many of the questions that may arise during the blood spot collection and offer important information to help ensure specimens arrive at the lab ready for screening.

(1:30)

ASK THE LABORATORIAN

Deborah, LPN Pediatrics: Why is it so important to wait and collect the blood spot specimen 24 hours after birth? Shouldn't the blood spot specimen be collected as soon as the baby is born?

Patricia, Lab Technician: 24 hours is the optimum time for collecting blood spots to obtain accurate results on those tests. There are three instances where we would like it drawn before that. One is if the baby is going to be transfused. Then we would like it drawn prior to the 24 hours, and then a repeat done after the transfusion. Another time would be if the baby's going home within the 24 hours. And the third time would be if that baby is being transferred out to another hospital.

Deborah, LPN Pediatrics: Once a blood spot specimen is collected, does it need to dry before being sent to lab?

Patricia, Lab Technician: Yes. It needs a minimum of three hours for drying time, and then it should be sent to the lab within 24 hours after being collected. And one of the items that's available is what's called the drying rack. And that way you can put those specimens on there so they're not touching anything. They're not on the bench. Because touching each other can cause contamination, or putting

on a bench can cause contamination. And so you can set them in here, let them dry for three hours, and then send them.

Mike, Lab Technician Supervisor: Keeping the specimens in a horizontal position while they're drying is important, so the blood will dry uniformly. It also gets them up off of the benchtop so that they won't get contaminated with anything.

(3:00)

ASK THE LABORATORIAN

Kim, BSN: Sometimes it's not possible to collect blood from the baby's heel. Can other methods be used?

Patricia, Lab Technician: The heel stick is still the preferred method. It's important not to do the arch, do the ears, do the fingers on the baby because that's too dangerous. But the heel stick is still the preferred method as long as you are not contaminating the filter paper in any way.

Kim, BSN: Sometimes babies move around a lot when you're trying to collect the blood from the baby's heel. And what are the best ways to get that blood? Can you use other devices to get the blood on the filter paper without scratching it?

Patricia, Lab Technician: The heel stick is still the preferred method for dropping the blood on the filter paper. However, you could use the capillary tube. The important thing is to drop it immediately so it doesn't have time to clot. And do not touch the filter paper with that tube or you will scratch it. Another item to keep in mind is do not use an anticoagulant tube because that will interfere with the results of the test.

Kim, BSN: With newborn screening, we collect blood samples from preterm as well as full-term babies. And we know that sometimes with the preterm babies there are some special considerations. Can you tell us about those?

Patricia, Lab Technician: The preterm babies you can collect prior to 24 hours if you believe there's going to be a transfusion. And then, if you do that, you would have to recollect after the transfusion. If it is not possible to do it before the transfusion, then you would have to wait. Do it after the transfusion but then another one eight weeks after that last transfusion.

(4:40)

Kelly, RN: What are the most common reasons that the lab would consider the specimen unsatisfactory?

Patricia, Lab Technician: Some of the most common reasons for rejecting a specimen would be layering. If you're dropping the blood, you don't want that blood to overlap one another. Quantity not sufficient. Be sure and check both sides of your form – that the blood has soaked through on both sides of the filter paper. Quantity not sufficient would be also if there isn't enough blood. You just put a tiny little drop in that circle and we don't have enough to get a valid punch. Clotting. And the clotting is usually due to if you're using a capillary tube, and you're dropping it, and you're leaving it in that tube too long, and it starts to clot. Serum separation can occur if you're pumping the heel of that baby and you're dropping the blood, then you have the tissue being mixed in with the blood and separation can occur. Contamination. You can have contamination when you take your gloves off while you still are

PUTTING BABIES FIRST

working with the specimen holding it, even though you've collected the blood, because your hands have oils; or maybe you've had hand cream on it and that can cause contamination. And then one other item that once in a while we'll get an expired form. All the forms have an expiration date. So, be aware of that. And that would be rejected if you used it.

(6:00)

Mike, Lab Technician Supervisor: We realize you can't be perfect in collecting specimens. And while this one certainly looks better as far as the circles being filled, we're not going to dismiss it, all samples, if they're not completely filled within the circle. And here's an example of a blood spot specimen where we consider it acceptable. We feel we're getting an adequate valid sampling from it.

(6:35)

Kelly, RN: What other steps can collectors take to make sure that the best possible specimen is sent to the laboratory?

Patricia, Lab Technician: You need to check the information on the form. Make sure that all of it is complete before sending it. You need to properly train the staff in collection. And one of the tools that is handy for doing that training is the one that is from the Clinical and Laboratory Standards Institute. You need to dry that specimen. Keep it away from benchtops. You don't want them touching one another. And they need a minimum of three hours of drying time. Keep it away from heat, humidity, and sunlight. And then ship it off to your lab within 24 hours after collection.

(7:25)

Val, Lab Technician: Alright. So this is the log-in bench and this is where it all begins. So what happens when we receive these specimens in the lab is the staff evaluate the demographic information, and make sure that we have certain key components like name of the baby, facility, and date of birth. Once we've verified that that information is available, then we evaluate the blood spot quality. And, the blood is protected by this flap. So we pull this back and we evaluate the front, and then we flip it over and we evaluate the back. And if both sides are okay, then the specimen is then passed along, based on one person's assessment of the blood. However, if one lab staff member looks at this and says, "Mmm, I don't know. I think there's something wrong with this", the specimen is then independently evaluated by a second lab staff member. And based on their evaluation of the blood spot card, if both can agree that it is poor quality or unsatisfactory, it is then assigned poor quality or unsatisfactory.

(8:28)

Female Narrator: By following these important procedures, you are a critical first link to a healthy start in life. Accurate collection of blood spots allows laboratories to quickly identify potential congenital conditions. Together, you and the lab technician help ensure a healthy life for the new infant in a process known as baby's first test.

(8:55)

Female Narrator: To learn more about newborn screening, parents can go to [Baby's First Test](#). This comprehensive one-stop shop includes information about the screening process, a clickable map listing each state's newborn screening panel, and detailed information about the symptoms, treatment, and causes of these conditions. There is also a health provider section which includes a childbirth educator toolkit and an FAQ with the most common questions that parents have for their providers.

PUTTING BABIES FIRST

(9:34 end)