# Rapid Whole-Genome Sequencing as a First-Line Test Is Likely to Significantly Reduce the Cost of Acute Care in a Private Payer System

**Article:**
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*Rapid Whole-Genome Sequencing as a First-Line Test Is Likely to Significantly Reduce the Cost of Acute Care in a Private Payer System.*
J Appl Lab Med 2025; 10(4): 833–42. https://doi.org/10.1093/jalm/jfaf045

**Guest:** Christy Moore is a licensed and certified genetic counselor in California. At the time of the publication of this article, she was the Genetics Program Manager at Blue Shield of California.

Randye Kaye: Hello and welcome to this edition of *JALM* Talk from *The Journal of Applied Laboratory Medicine*, a publication of the Association for Diagnostics & Laboratory Medicine. I'm your host, Randye Kaye.

Each year, approximately 4 million infants are born in the United States, and 7 to 10% of them are admitted to a neonatal intensive care unit for diagnosis and treatment of serious health conditions. Among the leading causes of infant mortality are genetic disorders and congenital anomalies. Studies have demonstrated that rapid, genome-wide sequencing can lead to faster and more accurate diagnoses compared to traditional methods, like gene panels or chromosomal microarrays. Project Baby Bear was a California state-funded pilot program that offered rapid whole-genome sequencing to critically ill infants in five children's hospitals. The results were compelling. The availability of rapid whole-genome sequencing led to changes in medical care that shortened hospital stays, avoided unnecessary procedures, and significantly reduced costs. The July 2025 issue of *JALM* features an article that explores the economic impact of this approach for a private insurer. By modeling outcomes for infants similar to those in Project Baby Bear, the study found that broader insurance coverage for rapid whole-genome sequencing would improve access to precision diagnostics that enhances quality of care.

Today, we're joined by the article's corresponding author, Christy Moore. Christy is a licensed and certified genetic counselor in California. She has experience in prenatal, neonatal, and pediatric clinical settings, as well as in public health, commercial labs, and insurance. At the time of the publication of this article, she was the genetics program manager at Blue Shield of California. Welcome, Christy. Let's start with this. What was the motivation behind this study, and what did you hope that the study would accomplish?

Christy Moore: Yeah, well, thank you so much for having me. So back in 2019, we at Blue Shield of California were very intrigued by the preliminary data that were coming out of Project Baby Bear in California. And we were really especially interested in the diagnostic yields that they were seeing for these patients. Obviously, there was some cost of health care savings there, but the change in medical management and all of the decisions that were made much easier with this information was something that we were really interested in. And so, we decided we wanted to cover this technology for our members as well. So, in the summer of 2019, we went live with our medical policy that covered rapid whole-genome sequencing for critically ill children in the ICU. And we laid out some criteria that basically said if the clinician suspects a genetic condition is the cause of the baby's health issues, we wanted them to order that test, no prior auth[orization] needed. So once that policy went live, at that point, we started thinking, "I wonder what kind of health care dollars we would see in a private payer model," because we knew that the public payer, the Medi-Cal, which is the California version of Medicaid, did see some cost of health care reduction, so we wondered, you know, our payment models are very different in the private system. We're also going to be paying more for the test. What would that translate to? So, we set about trying to figure out what we could expect to see as far as savings and we were thinking maybe it would be along the lines of what they saw in the Medi-Cal version and what we found was actually a lot better. So, the motivation in publishing this was, we were hoping that maybe other plans, whether they're public or private, would see this information and realize this is a win-win. Not only is it going to clinically help their covered lives but it's also going to save money regardless of if it's a private or a payer system.

Randye Kaye: Oh, that's wonderful, and we all know insurance companies love to save money. So, can you briefly explain--how did you conduct this study? How was it conducted?

Christy Moore: Yeah, so it was an interesting challenge at first, because obviously, ideally, we would have loved to have a cohort of Blue Shield covered patients that got the test to compare to Blue Shield patients that didn't get the test. But especially in the early days and even now, unfortunately, the uptake hasn't been what we had hoped. We didn't have a good cohort that we could use to compare. So, what we decided to do was work very closely with our counterparts at Rady Children's, and we decided to take the Project Baby Bear cohort that they had already done and treat that as if those were Blue Shield patients.

So, we were putting our payment models onto them as if they were our covered lives. And then we did matched controls of actual Blue Shield patients. We matched each Baby Bear participant with a matched control for DRG, which is the Diagnosis Related Group, and level of severity, 1 to 4, and so we were able to at least one, sometimes several matched controls per Baby Bear participant. And then we looked to see what the savings were between what Baby Bear had done and what the actual outcome as far as length of NICU stay for the actual Blue Shield covered patients. So, in this study, it differs a little bit from Project Baby Bear in that about 10% of their savings in Baby Bear were due to avoided procedures. We did not look at that. We just looked at the length of stay alone, so how many days that baby was admitted on that initial NICU stay, and that's how we compared those two cohorts.

Randye Kaye: All right. Thank you. So, what were your findings, and what was the economic impact of allowing rapid whole-genome sequencing for this cohort of patients?

Christy Moore: So, what we found was that we could save between -- and again, these are kind of conservative estimates, but because there's a range in the Baby Bear data, we also have a range in ours. So, per patient, after accounting for the cost of the test, we recognized between over $16,000 and over $28,000.00 per patient, just in reduced length of NICU stay alone. So, if we had been covering that Baby Bear cohort, the total would have been between $3 million and $5.2 million for covering the Project Baby Bear kiddos just based on how long they stayed in the NICU. So, we actually scaled that, and we went back through our data and took a look at how many babies we have per year that meet the qualifications for getting this test. And we found that it's between 250 and 500 patients per year that met the qualifications to get this test. So, if every single one of those babies that qualified got the test, after accounting for the cost of the test, we would have saved up to $14 million in length of NICU stay alone, not accounting for anything else.

Randye Kaye: Wow. So, what are some limitations of your model?

Christy Moore: So, the main limitations, as I mentioned before, this is a conservative study, so we're not accounting for a lot of other fees including avoided procedures and treatments. We're also not looking at downstream costs, which we know can be very significant. So, what we can assume pretty safely is that the babies who qualified for this test, even after they're discharged, if they don't have a diagnosis at discharge, that's not the end of the search. There are going to be many, if not most of them, embarking on a diagnostic odyssey that can last for years, which takes a huge toll on the family. It's a huge drain of resources. These kids are going in to see specialists, quite often they're admitted again into the hospital. There's a lot of other tests and treatments that may or may not be necessary as they're searching for a diagnosis. So, we know that there's a lot of other downstream costs, both in dollars and in blood, sweat, and tears for these families that we're not even looking at. So, we're just really oversimplifying the savings here for just that initial NICU stay. The other thing that's obviously an elephant in the room is that every payer is different and every hospital contract within that payer is different. So, this is based on averages. This is aggregate data. So, the extent to which our numbers would translate to a different payer or a different hospital system, that's up for debate. But what we are confident in, is that there is significant savings, but what those numbers are specifically is really going to vary quite a bit.

Randye Kaye: All right. Thank you. So, one final question, can you sum up what is a take-home message that you hope the audience will remember from this study?

Christy Moore: Yeah, absolutely, so, like I said, our motivation is to show that not only is this clinically the right thing to do, but it can save vast amounts of money as well, regardless of the system if it's a public system or a payer system. So, what we are hoping is that more and more payers come on board with us and cover this test because that's a lot of the feedback we were hearing from hospitals, is that they weren't ordering the test because so few of the babies in their NICU would get coverage for it. It's an expensive test and they couldn't afford to eat the cost for all of those babies. That would be their lab budget for the year very, very quickly. So what we're hoping is that more and more payers will come on board, cover the test so that a majority of the babies sitting in the NICU right now would have coverage, and that would motivate more ordering of the test and increased access for everyone, and get the answers for these families. Because even a negative answer is going to give some kind of guidance so the clinicians can help with medical management, the families are aided in making very difficult decisions, and we want to get as much information out there as possible. So, if we can get more people covering this test and get access for more people, that's just going to improve cost of health care and the lives of these families so much more.

Randye Kaye: All right. Thank you. And of course, reduced time in the NICU means more time with your family. So, thank you so much for joining us today, Christy.

Christy Moore: Thank you so much for having me.

Randye Kaye: That was Christy Moore describing the *JALM* article, "Rapid Whole-Genome Sequencing as a First-Line Test Is Likely to Significantly Reduce the Cost of Acute Care in a Private Payer System." Thanks for tuning in to this episode of *JALM* Talk. See you next time and don't forget to submit something for us to talk about.