MT Newborn Screening (NBS) Advisory Committee Meeting
MINUTES

Tuesday, April 21, 2026
9:00 p.m. – 12:00 p.m.

Attendees

Voting Advisory Committee Members Present (Name - Position)

- **Jennifer Banna**, Committee Vice Chair - Center Coordinator, Family to Family; Parent of child with rare metabolic disorder; Representative of an advocacy association regarding newborns with medical conditions or rare disorders
- **Abdallah "Abe" Elias** - Director of Medical Genetics and Clinical Geneticist, Shodair Children's Hospital
- **Shelly Eagen**, Committee Chair - Nurse Practitioner, Pediatric Pulmonary, Billings Clinic
- **Shawnalea Chief Goes Out** - Representative of the Medicaid insurance industry, Perinatal Health Program Officer at the Health Resources Division, DPHHS
- **Steven Shapero** - Family member of persons affected by a rare genetic disorder
- **E Lynne Wood** - Pediatric Neurologist, Billings Clinic
- **Rose LaPine** - Nurse Practitioner, Blackfeet Tribal Public Health
- **Kotie Dunmire** - High School Business and Special Education Teacher, Butte High School and Parent of child with Cystic Fibrosis and PKU
- **Kathy Crowley-Haywood,** Certified Nurse Midwife, Roots Birth & Women's Health

Voting Advisory Committee Members Absent (Name - Position)

- (none - all present)

Non-Voting Advisory Committee Members Present (Name - Position)

- **Jeanne Lee** - Newborn Screening and Serology Supervisor, DPHHS
- **Miranda Reddig** - Program Specialist, Newborn Screening, DPHHS
- **Nikki Goosen** - Newborn Screening Clinical Laboratory Science Lead, DPHHS
- **Jacqueline Isaly** - Family and Community Health Bureau Chief, DPHHS
- **Debbie Gibson** - Lab Services Bureau Chief, Montana Public Health Laboratory, DPHHS
- **Amber Bell** - Newborn Screening Coordinator, Children's Special Health Services, DPHHS
- **Kayla Cummins** - Administrative Assistant ECFSD, DPHHS
- **Chelsea Pugh** - Nurse Consultant, Newborn Screening, DPHHS

Non-Voting Advisory Committee Members <u>Absent</u> (Name - Position)

- **Douglas Harrington** - State Medical Officer, DPHHS

Facilitators (Name - Position)

- **Stephanie Burkholder** - Public Health Specialist, Yarrow
- **Mikaela Miller** - Public Health Specialist, Yarrow

Guests (Name - Position)

- **Sarah Cornell** - Family presenter
- **Cora Cornell** - Family presenter
- **Josh Bonkowsky, MD, PhD** - Subject Matter Expert

Public (Name)

- **Diane Fennimore**
- **Susheela Jayaraman**
- **Melanie Rumbel**
- **Lesa Brackbill**

<u>Welcome & Roll Call</u>

- Committee Chair, Shelly Eagen, welcomed the group and co-chair Jenn Banna did roll call while leading introductions so each person could introduce themselves by providing their organizations, roles, and a description of themselves.
    - Note: physical description is requested during introductions for those that might be seeing impaired.
- Jenn Banna read the acknowledgement: "We thank the families, caregivers, committee members, and advocates for their contributions to the Montana Newborn Screening Program. We recognize that each condition reviewed affects children and families in Montana, and we strive to balance the emotions and vulnerabilities shared with the need for careful, sometimes difficult, discussions on logistics and finances. Our goal is to ensure the process is publicly accessible, transparent, and carefully examined."
- Yarrow provided an overview of the Agenda, Ground Rules, and the Public Comment Period. The agenda for the day was outlined, including reviewing the MLD nomination packet, a family presentation, SME and state lab presentations, discussion time, and a public comment period. The format for the public comment period was explained, with a 2-minute time limit per speaker and instructions for raising hands or using *9 to participate.

Updates

- Pompe: Now currently screening for Pompe in Montana (began Jan 15, 2026)
    - Panel cost has increased by $11.00 with this addition, which brings the total cost of the panel to $161.80
- ASMD: Currently in the rule-making process, working with Wisconsin to determine when screening will begin in Montana
- New committee member: Rose LaPine, APRN is our new representative of a tribal healthcare system. She works for the Blackfeet Tribal Public Health. Rose introduced herself.

Metachromatic Leukodystrophy (MLD) Nomination Packet Review

Please note that this is a broad overview drawn from the nomination packet, but further details will be provided by the Subject Matter Expert (SME), lab, and family presenter later in the meeting.

- MLD is typically grouped into three types based on age of onset.
- The late-infantile (LI) form, appearing between about 6 months and 2 years, is the most common and severe, with early signs including loss of motor skills, muscle weakness, and difficulty walking, followed by rapid neurological decline.
- Juvenile form of MLD begins between roughly ages 3 and 16 and often starts with behavioral or learning difficulties along with clumsiness, then progresses to motor impairment.
- Adult MLD, the rarest and slowest form, can emerge in the late teens or later and is often first marked by psychiatric symptoms such as depression, personality changes, or cognitive decline before physical symptoms develop.
- Across all types, symptoms generally worsen over time.
- How is this disorder currently identified?
    - Between a combination of clinical evaluation, laboratory testing, and imaging
- Why should it be screened at birth?
    - Early detection and management can help mitigate some of the serious health risks and improve quality of life
- How is this disorder treated?
    - Is there a treatment available?
        - Yes - hematopoietic stem cell (HSC) gene therapy (FDA approved treatment for early onset form)
    - Is the treatment in the experimental phase?
        - No
- Proposed screening test method
    - Dried blood spot
- Status of the condition in the United States:
    - States currently screening for the condition: Active 1 (New York)
    - Condition has been reviewed by RUSP: Yes
    - Registries or databases currently established for the condition: At least 2: a clinician/research-led international registry (MLDi), and a patient-powered registry

Selection Criteria:

1. It can be identified at a period of time (24 to 48 hours after birth) at which it would not ordinarily be clinically detected. - True
2. A test with appropriate sensitivity and specificity is available. - True
3. There is a significant risk of illness, disability, or death if babies are not treated promptly (within the recommended time frame for the condition). - True
4. Effective treatment is available and access to follow-up care and counseling is generally available. - True
5. There are demonstrated benefits of early detection, timely intervention, and efficacious treatment. - True
6. The benefits to babies and to society outweigh the risks and burdens of screening and treatment. - True
7. There are minimal financial impacts on the family. - True
8. There is a public health benefit to conducting the test. - True
9. There exist responsible parties who will follow up with families and implement necessary interventions. - True
10. The condition's case definition and spectrum are well described. - True

MLD Packet Discussion

Shelley Eagen opened up for discussion specifically to the information in the packet.

- Kathy Crowley asked about incidence of MLD in the general population. Mikaela noted that the SME will cover this in his presentation later today.
- Jenn Banna asked a brief clarification on how this was recently added to the RUSP since the national committee that oversees RUSP nominations/additions is no longer active. It was added in December by HHS Secretary Robert Kennedy, Jr.

MLD Presentation and Background Information

- **Family Presentation**
    - Sarah shared her family's challenging journey with Cora's MLD diagnosis and treatment. Despite having access to resources and education, it took 17 months to diagnose Cora, during which her condition worsened significantly. After receiving a diagnosis, the family pursued treatment options, including a cord blood transplant at Duke University and later at Boston Children's Hospital, though the treatment resulted in multiple complications. Despite initial recovery, Cora faced ongoing health issues including a permanent immunodeficiency and osteoporosis, leading to a severe hip fracture after falling in 2024 that required extensive recovery time, loss of bone density, another hip fracture, and other problems. Sarah emphasized how delayed diagnosis not only impacts families personally but also places significant strain on healthcare systems and educational institutions.

- Cora shared her experiences living with MLD, including challenges with mobility, allergies, and frequent medical appointments. She discussed her ongoing physical therapy and upcoming spinal fusion surgery. Cora's mother, Sarah, emphasized the importance of newborn screening for MLD to help future families avoid diagnostic odysseys and give children with the condition a better chance at a normal childhood.

- **Subject Matter Expert (SME) Presentation: Josh Bonkowsky, MD, PhD**
  - Dr. Bonkowsky presented on MLD, explaining its medical and scientific aspects, including how it affects the brain's white matter and is caused by mutations in the *ARSA* gene. He emphasized that while MLD can be asymptomatic at first, symptoms gradually appear, making early detection crucial, especially for newborn screening to catch the late infantile and early juvenile types within the narrow treatment window of 2-6 months from symptom onset.
  - MLD is a type of leukodystrophy, of which there are hundreds of types of leukodystrophies
  - MLD is caused by a mutated gene (*ARSA*). It is an autosomal recessive condition.
  - Incidence is 1 in 40,000 live births.
  - ARSA is important for lysosome function (a lysosome is a membrane-bound organelle that contains digestive enzymes for breaking down macromolecules, cellular debris, and foreign invaders).
    - If it's not working, left with arylsulfatase deficiency.
  - Symptoms: infants and children are initially asymptomatic. When they do creep up, they are insidious and non-specific, leading to lots of time to find a diagnosis.
  - Clinical features: brain MRI might show posterior effects first (but symmetric)
    - Peripheral neuropathy
    - Gallbladder disease
    - Developmental delays, seizures
    - Different ages of onset, different symptoms
  - MLD diagnosis: key step is genetic testing
    - WGS/Genome or exome or panel test
    - Different genetic variants have been studied to understand age and risk of disease
    - LLE (leukocyte lysosomal enzyme testing) helps to figure out the level of *ARSA*
      - Helps to determine how much time they have
    - Urine sulfatides
  - MLD Care
    - Referral to a leukodystrophy specialist is important.
    - Once diagnosed, follow-up care is with pediatric neurologist/geneticist, pediatrician.
    - Treatment is time-sensitive and can be delivered if caught in time.
  - Diagnosis is urgent!

        - Narrow window of time between symptom onset, and after which treatment is not effective (depending on age of the child, about 2-6 months)
        - No treatment leads to progressive disability and death
        - Treatment is essentially curative
    - MLD subtypes and ages
        - Age of onset is defined by genetic variant in ARSA gene
            - LI (late-infantile) = less than or equal to 30 mo
            - EJ (early juvenile) = greater than 30 mo to less than 7 years
                - With newborn screening trying to pay attention to LI and EJ (early onset less than 7 years)
            - LJ (late juvenile) = 7 years to less than 17 years
                - A bit longer window, not as urgent
            - Adult onset = greater than or equal to 17 years
        - LI is most common type
        - The types and ages of onset are generalizations
            - Help to define categories but still need to determine which type of MLD they have
        - Genotype is referred to by amount of residual enzyme activity. Much genotype-phenotype is known
    - Treatment summary:
        - Several comprehensive studies published a bit over a year ago (Adang et al, 2024 and Laugwitz et al, 2024)
        - If LI or EJ subtype (anyone under a few years of age):
            - Arsa-cel
                - LI: presymptomatic
                - EJ: pre- or early-symptomatic
        - LJ and Adult:
                - HSCT/BMT
        - Timing is critical: for LI the Arsa-cel only works if they are pre-symptomatic. Once symptomatic, the treatment becomes ineffective. For EJ the treatment window is a bit longer (ideally they would be treated pre-symptomatic but can also be treated with some symptoms present)
        - HSCT/BMT: hematopoietic stem cell transplant (HSCT) / bone marrow transplant (BMT)
            - Only effective if disease is caught early enough
            - Indicated for or LJ and Adult forms
            - Mortality is about 15% within one year from BMT
            - But without BMT, mortality is 100%
            - Still the risk of progression with motor symptoms
        - Treatment - 2-Arsa-cel
            - Arsa-cel/Lenmeldy/Atidarsagene autotemcel
            - A form of HSCT

            - Instead of a donor, it is an autologous stem-cell transplant (Retrieve child's stem/progenitor cells) and insert functional ARSA gene into CD34+ cells ex vivo using lentiviral vector
            - Busulfan myeloablation of patient's donor, followed by reinfusion of modified cells
            - FDA approved
            - Only available at specialized treatment centers
            - Indicated for LI or EJ subtypes
        - Arsa-cell is more expensive at $4.25 million versus about $1 million for standard bone marrow transplant.
    - Transplantation preserves cognitive function, increases survival rates
    - Dr. Bonkowsky emphasized that early diagnosis through newborn screening is critical, as current diagnostic capabilities are inadequate, particularly in rural areas, leading to many undiagnosed cases across the United States. It is treatable but most effective if caught early through screening.

- **Lab Presentation**
    - Jeanne Lee, Newborn Screening and Serology Supervisor (DPHHS), joined us today to provide the Montana State Laboratory Presentation component.
        - In Montana, we currently have 32 conditions on the newborn screening panel
            - 7 are screened here at the Montana public health laboratory
            - The other 25 conditions are tested at the Wisconsin State Lab of Hygiene, where they can perform mass spectrometry testing inexpensively.
            - The cost of the NBS panel is currently $161.80 per panel.
        - Reminder that when considering taking on a new test, there are several factors to take into account such as instrumentation, methodological expertise, FDA-approval, and cost.
        - There is no FDA-approved test for MLD.
            - However, Montana code does not preclude NBS AC from considering a condition even if there is not an FDA-approved test.
            - When no FDA-approved test exists, a laboratory must develop its own test, called a LDT (lab-developed test).
        - FDA-approved tests have already undergone rigorous studies of screening performance, including false-negative and false-positive studies, precision, sensitivity, and reproducibility assays, interference studies, etc.
        - With a lab-developed test (LDT), all of that needs to be done by the lab, which can take an extensive period of time to develop and evaluate, as there is no outside party reviewing the data.
        - Mei Baker at the Wisconsin State Laboratory of Hygiene is working on an assay for MLD. She hopes to have it developed by the end of the year. It is unknown what the cost of screening MLD will be once her assay has been validated.

Jeanne will see her at the beginning of May so hopes to get some clarification from her then.

- Nikki Goosen, MT public health laboratory, short-term follow-up coordinator
  - Coordinates short-term follow-up in Montana, follows up with primary care provider or consults with other specialists around the state to ensure there is coordination of care
    - Short-term follow up for a positive MLD lab result in Montana:
      - Immediately inform PCP
      - Have Shodair Children's Hospital metabolic team involved right away, who will help guide further testing and interpret the tests after they come back
      - All of these tests are send-outs (Mayo Clinic)
        - ARSA leukocyte enzyme assay, urine sulfatides, and urine glycosamingolycans
        - Whole blood and urine specimens
      - Molecular genetic testing goes through Shodair Children's Hospital here in Helena
      - Depending on results, involve pediatric neurology and they take it from there

MLD Discussion

- Thank you to the presenters. Begin committee discussion period.
- The discussion period focused on discussing screening and testing challenges for MLD, particularly around the lack of FDA-approved tests and current state screening methods. Abe explained that while some states have added MLD to their screening programs, most are still developing appropriate tests, with double mass spectrometry being the most sensitive and specific method for detecting sulfatides. Jeanne mentioned that two companies are expected to submit assays for FDA approval by the end of 2026. The discussion highlighted concerns about pseudodeficiency alleles and the need for accurate screening, with Abe suggesting that molecular testing could be incorporated earlier in the process to address these issues.
- Shelly: With there not being an FDA-approved test right now and there are states screening and it has been put on the RUSP, is there knowledge on what those states who are screening are currently using?
  - Abe Elias: MLD is one of the most recent additions. There is good screening but the metabolic screening is being worked out: sulfatides and ARSA activity. It's important to have good screening for the sulfatides to measure. With the ARSA gene, the problem is there are pseudodeficiency alleles that can lead to lots of false positives. So you want to use the testing that is both sensitive and specific. The double mass spectrometry used to detect sulfatides is quite good but it's not readily available; it's still being developed. Most states that have added it are actually still in the process of developing it.

    - Dr. Bonkowsky: Unsure about what the Utah state lab is doing, but there is concern about the pseudodeficiency problem and wanting to weed those out early. Adrenal leukodystrophy is an example of them wanting a higher false positive rate in screening and then weed people out from there, so they are biased to that side of the equation.
    - Jeanne Lee: There are some tests that are going to be submitted to the FDA towards the end of 2026 (aware of two different companies) but not sure how long that process will take for assays.
    - Shelly Eagen: Would ARSA activity be on the same blood spot as something else or will there need to be a different punch card?
        - Nikki Goosen: if Wisconsin performed that test, it depends on if they use the same platform
        - Abe Elias: Wisconsin is currently still developing a lab test so there is a possibility for them to do the initial mass spec and then reflex directly to a second-tier test (could be ARSA activity). Could develop a mass spec test that is so specific that you have a low false positive rate and then the initial sulfatides are flagged as abnormal. From a blood spot we can directly extract the DNA and do molecular testing. New York does molecular testing early on and it circumvents the problem of pseudodeficiency alleles. So sulfatides and molecular testing are probably the most important part of that. But the problem is the initial screening and that needs to be worked out, as right now we are dependent on an efficient test from Wisconsin.
            - Jeanne: Not sure what Mei Baker has in the works, just that she is "developing an assay" - might try to multiplex it with X-ALD. Will know more in May.
- Lynne Wood: To summarize: our biggest challenge is that right now an FDA-approved or standardized measurement doesn't necessarily exist, and some places have worked around it. Abe, are you proposing that rather than doing the initial screening with ARSA and then getting urine sulfatides, instead going straight to molecular testing?
    - Abe Elias: Not exactly. Initial screening would still depend on the sulfatides. It's a very good test but a tricky test. The screening window is narrow, and only a few labs have started doing that. Suggests that the second-tier testing (molecular testing) be brought in earlier because that takes care of the questions around pseudodeficiency alleles that are common with ARSA activity. If the sulfatides screening is well done then the pseudodeficiencies are not a big problem.
    - Lynne Wood: So not taking away a step, just merging step 2 and step 3.
- Jenn Banna: Regarding late onset and newborn screening, for the ones caught on newborn screen could also be late onset or early onset or if we're just caching a certain group.
    - Dr. Bonkowsky: with newborn screening, all kinds would be picked up, but the most common type to pick up is late infantile (LI). With those who have later onset, we try to take them to transplant before they become symptomatic.
- Lynne Wood: MLD has been added to the RUSP, but it seems the infrastructure and technology isn't really fleshed out yet compared to other conditions. Are we able to pause, get more

information, and then make our decision? Could be by the time we vote at the next meeting that we have all this information, but we don't have a lot of it quite yet.
    - Dr Bonkowsky: Once a kid is diagnosed and referred, that pathway is pretty clear. Just not sure on the newborn screening piece of it. So the question is just whether the newborn screening/testing component is fleshed out enough.
- Abe Elias: In terms of gene therapy, it's important to have pre-symptomatic patients. Are there criteria that can be followed and who makes that decision? How does that flow work? Family presenters shared a very long odyssey in 2014, and yet today we might have better testing and earlier diagnosis. Are there specific criteria to determine that?
    - Dr Bonkowsky: Approval to use ARSA cell gene therapy is very tightly regulated. Have to have a normal neuro exam by a pediatric neurologist, can't have MRI involvement. Insurance companies don't want to pay for something that it's too late to be effective.
    - Abe Elias: So if you have MRI involvement, you would not qualify for Arsa-cel (but only for the late infantile subtype).
- Nikki Goosen: Want to speak to the real estate issue for spot testing. We recently changed our collection cards for Montana. Went from 5 spots to 8 spots, so we do have those 3 additional spots.
- Jenn Banna: Takes so long to go through the process of this advisory committee. Curious how others feel about not knowing how the testing will go and voting and hoping that lab piece will work itself out?
    - Jeanne Lee: This is why you are all on the advisory committee. You are having to make these difficult decisions. The Director is going to take your recommendation, so if there are too many questions we can do things like have another meeting to get more information before you make a decision. It's up to you all to ask all the questions you have and have our group try to find those answers for you so you can make those decisions.
- Jacqueline Isaly: Not a voting member, but just to clarify, when we write those recommendation letters to the Director, we do include all the details and info about what this testing process will look like, so if we don't know all of those details we would then have to explain that and that could be taken into consideration for the Director to approve or not approve.
- E Lynne Wood: Once we have more information about the lab and screening, we need to send that information out to the committee. The argument for screening is compelling, but if we're going to recommend it we also need to have a good plan for it. Proposes possibly holding a shorter interim meeting to cover any additional information. Several members said they would be open to this idea.
    - Jeanne says she hopes we learn more from Mei Baker in the next few months but is very unsure what the implementation date would be. Other states are in the same situation, especially those that automatically have to align to the RUSP. To develop an assay can take years. If a condition is added to the panel it doesn't mean you get to start screening right away. The rule-making process takes time, assay development takes time, may take a couple of years to begin screening.

    - Dr. Bonkowsky: since several states are screening already, it seems like we should have fairly good confidence that it's technically doable.
        - Lynne Wood: Yes, but how we do it here is the question, given our state health infrastructure.
        - Jeanne: Yes and could increase the cost of screening even more (especially if we're looking at shipping a blood spot to a third state)
- Abe Elias: Yes, technically it's feasible but the screening is based on mass spectrometry and that's where we are dependent on a lab like Wisconsin since we don't have that technology here. If a lab decides to develop a test, they usually have a projected timeline but those can change due to unexpected outcomes of preliminary testing. Has Utah started to screen yet?
    - Dr. Bonkowsky: No, they are setting up the assays and then we have to go through a legislative budget approval process which won't happen until Jan 2027.
- Shelly Eagen: Dr. Bonkowsky had mentioned one thing about the 2-6 month timeframe before patients are deemed to be too affected. How do you determine? Is it based on severity of symptoms or number of symptoms?
    - Dr. Bonkowsky: In that time period, patients become symptomatic on neurologic exams and so especially with late-infantile, it's really quite fast. Any involvement puts you into the disqualification category.
- Nikki Goosen: Would an MRI need to be specifically at a facility with Dr. Wood or can that be done anywhere and you can look at it from Billings?
    - Lynne Wood: There are MRI machines across the state but depends on the reader's comfort at looking at the white matter. Neuroradiologists in Kalispell, Missoula, Bozeman are sort of dedicated to just brain scans so they are accustomed to looking at pediatric scans. As long as it's a good scan, you can get an over-read and anyone can read it, so this shouldn't be too big of a barrier here.
- Abe Elias asked Dr. Bonkowsky about the timeline for Utah's implementation but he was unsure of the exact details.
- The committee agreed to consider gathering more information before making a final recommendation and possibly holding a shorter, interim meeting before a vote is likely scheduled for the fall.

Public Comment Period

- Susheela Jayaraman, Associate Director of Diagnostics and Newborn Screening at Orchard Therapeutics, wanted to mention that as of today, New York, Pennsylvania, and Illinois are all live with their screening, and a couple of additional states are actively validating and will be live by the end of the year. There are a handful of RUSP-aligned states that are at various stages of their implementation, as well as a number of states that have it added, or recommended via their advisory committee. Also, our gene therapy product has been approved in Europe since 2020. Although the U.S. is in its early stages, a lot of work has been done in Europe, and a lot of data coming out of there.
- Additional comments via email were accepted up to 12:28pm MT on April 21, 2026.

- A total of four public comments were emailed, and Yarrow sent all four to committee members to review.

Thanks and Next Steps

- Follow up email will be sent soon and will include:
  - Meeting minutes
  - Recording
  - Presentation slides
- A Doodle poll will be sent out to Committee members to schedule the next meeting.
  - The next meeting will occur in the fall.
- Please email if you have questions, comments, or need anything.

This meeting was concluded by Mikaela Miller at 11:28 pm on April 21, 2026.