

Dear Commissioner Cunningham,

In December 2021, the Legacy of Angels Foundation nominated Krabbe disease for addition to Minnesota's newborn screening panel.

Krabbe disease is a lysosomal storage disorder and leukodystrophy with multiple ages of onset. The earliest onset (infantile) presents in the first year of life with irritability, feeding difficulties, seizures, and progressive spasticity. Without treatment, infants experience progressive neurologic decline leading to death. Clinically available treatment consists of stem cell transplantation, which is only recommended for the infantile form and has the best outcomes when performed within 30 days of birth. Transplantation modifies the course of the disease but is not curative.

Krabbe disease was previously nominated in 2015, and its addition to the Minnesota newborn screening panel was declined due to concerns surrounding specificity of screening tests, transplant related mortality, and unclear benefit of treatment. However, the available screening test has greatly improved over the last few years to more specifically identify children at the highest risk for early infantile disease and some of those who may develop late infantile or other forms of Krabbe disease.

Krabbe disease has also been reviewed multiple times by the federal Advisory Committee on Heritable Disorders in Newborns and Children (ACHDNC) for possible inclusion on the recommended uniform screening panel (RUSP). The RUSP is a list of conditions the Secretary of the Department of Health and Human Services recommends for states to screen as part of their state universal newborn screening programs. Krabbe disease was reviewed and declined both in 2010 and again in 2023. The most recent ACHDNC evidence review and determination were provided to Minnesota's advisory committee members and are included in this package for your review as well.

The recent nomination for inclusion of Krabbe disease on Minnesota's newborn screening panel was initially presented to committee members on May 31, 2022, where a public comment period for advocates and families to share their stories was provided. Letters of support were also submitted and are enclosed in this package.

At the May meeting, the Committee voted to assemble a scientific/technical workgroup to assess the condition's readiness for screening. The workgroup was composed of advisors, metabolic specialists, genetic counselors, and other stakeholders who would be directly impacted by the addition of this condition. This work group met two times to complete the Condition Readiness Criteria document (enclosed). This document was previously developed and adopted by this committee to establish a mechanism for the evaluation of disorders being considered for addition to the Minnesota panel that are not on the RUSP.

On October 4, 2022, program staff presented on the workgroup status and newborn screening laboratory considerations. The discussion and vote on whether or not to recommend Krabbe disease to Minnesota's newborn screening panel occurred on June 6, 2023.

The minutes from the June 6th meeting are included in this package for your review. A few key elements of the discussion are highlighted below:

- Psychosine testing (only available at Mayo Clinic Laboratories) is a second tier screening method that greatly improves testing specificity, reducing the number of false positive results and assisting with assessing risk for age of onset.
- The number of cases needing referral to a specialty center is estimated at 10 babies/year in Minnesota.

- The recommended timeline from birth to transplant is 4-6 weeks for infantile Krabbe disease. This is possible, but difficult to ensure for all babies in Minnesota based on insurance coverage and finding available matches for transplant.
- Hematopoietic stem cell transplant (HSCT) is not a cure for the disease, but prolongs life and improves quality of life, although some neuromuscular symptoms remain.
- HSCT has treatment related mortality, but HSCT for Krabbe disease is not more risky than HSCT for other reasons.
- Three Minnesota specialty care centers (Mayo Clinic, Children's Minnesota, and the University of Minnesota) have the capacity and knowledge to complete diagnostic workups. Additionally, the UMN can provide HSCT treatment to babies identified through newborn screening here in Minnesota.

Following discussion completion, the Committee elected to proceed with a vote on the following:

Do you recommend that the Commissioner of Health add Krabbe disease to the Minnesota Newborn Screening panel?

No, it is not ready for addition at this time = 4

Yes, I recommend its addition = 11

Members abstaining from vote = 1

With a majority vote and pending your approval, the Committee has recommended the addition of Krabbe disease to Minnesota's newborn screening panel.

Thank you for your consideration.

Sincerely,

/s/

Rae Blaylark
Chairperson