Dear Minnesota specialist,

You are receiving this communication as you are listed as a pediatric provider with the Minnesota Board of Medical Practice. As we do not have contact information for every Minnesota provider, please share this letter with any relevant colleagues. You can disregard this letter if this information is not applicable to your practice.

This communication aims to bring awareness and provide initial information about a study called BRIDGES-NBS. BRIDGES-NBS (formerly called BEACONS-NBS) is an NIH-funded research study taking place in seven states and territories across the U.S. over the next couple of years. Minnesota was selected as one of the seven to participate.

Please visit the Minnesota Department of Health (MDH) Newborn Screening Program's BRIDGES-NBS webpage for more information, including eligibility criteria for the study, study process, criteria for conditions included, and resources. The webpage will be updated periodically as more information becomes available.

What is BRIDGES-NBS?

BRIDGES-NBS is a feasibility study assessing the addition of optional newborn genomic sequencing-based screening, with standard newborn screening. Newborn genomic screening tests an infant for hundreds of medically actionable genetic conditions using a whole genome sequencing technology. This genome sequencing technology reads much of baby's DNA at one time and reports significant disease-causing genetic variants in a defined subset of genes/DNA regions. Eligible parents will have the option to consent and enroll their infant in newborn genomic screening shortly after birth.

Goals of the study include assessing if parents, clinicians, and states are ready, willing, and able to offer newborn genomic screening as part of the already existing state newborn screening programs.

When will the study start and end?

This study is currently in the preparation stage. Consenting will likely start in the winter, with the exact start date to be determined. Additional communication will be released once a start date has been finalized.

What is included in BRIDGES-NBS?

Infants who participate in this optional research study will receive newborn genomic screening for 777 genetic conditions, in addition to receiving standard newborn screening. The conditions included in BRIDGES-NBS met specific criteria, including actionability within the first year of life. See MDH BRIDGES-NBS and BRIDGES-NBS webpages for further information about conditions included.

What is NOT included in BRIDGES-NBS?

Newborn genomic screening through BRIDGES-NBS is NOT comprehensive genetic testing. Not all genetic conditions are screened for, including conditions appearing only in adulthood and conditions without an

established early treatment or monitoring plan. In addition, not all variants (genetic changes) that are detectable will be reported, including variants with uncertain clinical significance and carrier status.

Even if an infant had normal BRIDGES-NBS screening, specialists should still complete their typical evaluations, referrals, and additional testing for clinical concerns. Additional clinical genetic testing may be warranted. Infants should not have clinical testing or management delayed to wait for BRIDGES-NBS results.

What should specialists expect for infants participating in this study?

This study does NOT change or replace standard newborn screening. Infants should get their standard newborn screening results within the typical timeframe (generally less than 1 week after blood spot collection). Infants should complete follow-up recommendations (e.g. seeing a specialist, clinical labs and/or evaluation) for any abnormal standard newborn screening results, regardless of whether they are participating in BRIDGES-NBS.

BRIDGES-NBS results may take up to 2-3 months and will come back separately from standard newborn screening results.

- Any normal (negative) BRIDGES-NBS results will be sent back to the birth facility or midwife that collected the newborn screen blood spots.
- Any abnormal (positive) BRIDGES-NBS results will be called to the baby's primary care provider by genetic counselors at the Minnesota Newborn Screening Program. Recommended next steps will be discussed. The follow-up protocol after a positive BRIDGES-NBS result is currently being planned in Minnesota. Additional information will be shared with specialists once this protocol is finalized.

How many abnormal BRIDGES-NBS results are expected?

The study plan is to enroll up to 30,000 infants across the seven selected states over approximately 18 months, with roughly 4,000 MN infants participating. The BRIDGES-NBS team has estimated a 2-5% positivity rate, with up to half of positives nationally being G6PD deficiency. Therefore, an estimated ~80-200 Minnesota infants are expected to receive a positive BRIDGES-NBS result over the study duration. Some infants may already have a diagnosis by the time a positive BRIDGES-NBS result returns. For example, an infant may have been diagnosed due to symptoms starting before 2-3 months of age or after an abnormal standard newborn screen result.

What support will be available to providers?

The Minnesota Newborn Screening Program genetic counselors are available to help answer questions about the research study and the recommended next steps after an abnormal result. They can be reached at 651-201-3548.

BRIDGES-NBS has created a Genome Resource Center (GRC) support hub on their website for families and providers. The GRC includes clinical action sheets about all conditions included in the study (BRIDGES-NBS ACTion Sheets). GCR medical geneticists and genetic counselors are available for 1:1 assistance on positive BRIDGES-NBS screening results and conditions. They can be reached by completing the form "speak with BRIDGES-NBS medical geneticist/ genetic counselor" on the GRC. Of note, the GRC staff cannot review medical records nor provide individualized medical advice, medical care, or treatment recommendations for an infant.

Where can specialists get more information or give feedback?
As details are finalized for this study, additional communication will be released from the MN Newborn Screening Program. The MDH BRIDGES-NBS webpage will be updated as the study progresses.

The BRIDGES-NBS study website also has more information about the study, including privacy protections and future implications (FAQ page). The BRIDGES research team can be reached at info@bridgesnbs.org

We want to hear from you! Given this study is about the feasibility of newborn genomic screening within standard newborn screening, feedback from primary care providers, specialists, and families is crucial. A survey link is available on the MDH BRIDGES-NBS webpage for feedback. Please complete this survey with suggestions or concerns during the planning phase, as well as general feedback across the study duration.

Thanks for all you do for Minnesota infants!!

Best,

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