Wisconsin State Laboratory of Hygiene
UNIVERSITY OF WISCONSIN–MADISON
Newborn Screening Laboratory

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Dear Colleagues:

We are writing to inform you of a newborn screening pilot project regarding Pompe disease. In May 2013, it was recommended by the Advisory Committee on Heritable Disorders in the Newborn and Child (ACHDNC) that Pompe screening be added to State newborn screening panels. As part of the implementation process it was recommended that pilot studies be undertaken to understand the challenges to implementing this recommendation. Wisconsin was fortunate to receive federal funding to become one of these pilot study states. As a result, the Wisconsin State Laboratory of Hygiene, in conjunction with several pediatric metabolic specialists in the state, will be conducting Wisconsin's Pompe newborn screening trial. It is anticipated that the lab will start issuing reports on July 17, 2017, and the pilot will last about one year. We also want to let you know that the Health & Human Services Secretary accepted the ACHDNC's recommendation to add Pompe disease to the Recommended Uniform Screening Panel on March 2, 2015.

Pompe is a genetically inherited lysosomal storage disease. Children with Pompe have difficulty breaking down glycogen due to a defective alpha-glucosidase (GAA) enzyme; glycogen builds up in cells, particularly muscle cells, leading to poor muscle function. Pompe is a rare disorder, affecting about one in every 10,000-40,000 newborns. The severity of the disease can vary widely, but some affected infants will die in the first year of life if not treated. This is called the "classic infantile" form. In the "late onset" form of the disease, individuals may not become ill until later in childhood, or not until they are adults.

Infants with the classic infantile form of Pompe can become fatally ill due to cardiac or respiratory muscle failure induced by the disease. Early identification prior to, or at the initial stages of, cardiorespiratory involvement allows for treatment with enzyme replacement therapy (ERT) and a strong chance for the child to remain in reasonably good health. Newborn screening for Pompe will directly benefit the majority of classic infantile cases. The screening process may also identify patients with later onset disease. The early identification of late onset cases poses an ethical dilemma. Parents and identified children could become very anxious waiting for the disease to start; knowledge of the screen could adversely alter how they conduct their lives. However, late onset patients will benefit from avoiding delays in diagnosis. The earlier ERT is started, the better it works to help with the symptoms of late onset Pompe disease (typically weakness with respiratory compromise). Those identified as potential late onset Pompe cases will have an opportunity to be seen regularly by a metabolic disease specialist to monitor their condition. Recognizing the potential benefits to infantile cases, but the dilemma related to the diagnosis of late onset cases, the pilot program includes the option to "opt out" of the pilot study. Parents can inform the WSLH that they do not wish to have their child tested for Pompe disease by calling a toll-free number (see attached opt out information sheet). Opting out of the Pompe pilot will not affect a family's participation in Wisconsin's routine newborn screening panel.

The intent of the pilot is to include the opt out information sheet along with routine newborn screening educational materials at birthing hospitals and also to be distributed by the midwife at out-of-hospital births. We acknowledge that you may also be approached by families for your opinion on the pilot and appreciate your time in discussing the process with the families you serve. We are also ready to serve as information resources for you and your patients.

What happens if a patient screens positive?

Consistent with when infants screen positive for other conditions present on the newborn screen, their diagnosis must be confirmed as some screens will be a false positive. During the Pompe newborn screening pilot period, WSLH will communicate a positive screening result to the metabolic specialist immediately, and the metabolic specialist will contact and work with the child's primary care provider to reach the family to assess the infant's health and to begin the confirmatory process. Infants exhibiting any signs of cardiorespiratory failure should be brought to care immediately for further evaluation and to potentially begin ERT. Confirmatory tests for all infants will include urgent:

- Echocardiogram
- Blood draw for GAA enzyme activity
- Blood draw for creatine kinase level as a marker of muscle damage

The metabolic specialist involved in the case will help arrange for confirmatory testing and management of cases.

We are very excited to offer Pompe screening to Wisconsin's newborns and their families and recognize your place in this team effort to provide the highest quality care to children in our state. We greatly appreciate your assistance in this pilot study; please do not hesitate to contact one of us for further discussion regarding this upcoming pilot.

Sincerely,

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Enc. (opt out information sheet)