State of Connecticut
GENERAL ASSEMBLY

PUBLIC HEALTH COMMITTEE
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Task Force to Study Rare Diseases

Meeting Summary

April 27, 2017

Dr. Gulati convened the meeting at 1:15 PM with introductions of the Task Force members.

Members Present: Dr. Mridu Gulati, Dr. Kat Lutz, Lesley Bennett, John Morthanos, Lynne Sherman, Paul Pescatello and Michelle Cotton

Adrienne Manning Division Director, Newborn Screening State Public Health Laboratory, Elise Gaulin-Kremer Public Health Administrator State Public Health Laboratory, Karin Davis Birth Defects Registry Coordinator Community, Family Health and Prevention Section and Mark Keenan Connecticut State Title V Director Community, Family Health and Prevention Section were in attendance from the Department of Public Health.

Dr. Gulati stated that the Department of Public Health would be presenting on the Newborn Screening process. She further stated that the Department of Social Services will be presenting on the Medicaid Wavier process at a future meeting. She asked that members fill out a form listing their availability for future meetings, and asked if members would like to reschedule the May 25th meeting to accommodate other members.

Lesley Bennett asked if Dr. Gulati has been in contact with Dr. Pober.

Dr. Gulati said that Dr. Pober has been contacted but is unsure of why she is not attending the meetings.

Presentation:

Adrienne Manning began by providing an overview of the newborn screening program. She stated the Department of Public Health screens 37,000-38,000 newborns for 64 different disorders annually. The screening cost $98 per patients. Ideally the blood samples are taken between 24-48 hours after birth and takes about 24 hours for the results to come back. The treatment centers doing the follow up and diagnostic testing then

inform DPH of the result so they can improve their system. The Department sends out an information sheet on newborn screening procedures that is given to parents when their babies are being tested.

Dr. Gaulin-Kremer stated that the $98 fee is actually charged to the hospital that has submitted the bloodwork and it is only charged once, no matter how many retests need to be taken. Some of the funds from the fee are kept to support the functions of the Department's laboratory. She stated the criteria for how disorders end up on the panel are prescribed by law as well as the funding to support the implementation. There is a national advisory committee that meets and makes recommendations for what disorders are to be included in the Recommended Uniform Screening Panel. They take a facts-based approach to develop nationwide uniformity with newborn screening. In order to effectively test for a disorder detectable during a newborn screening period. That is why the universe of disorders tested for is much less than the entire universe of rare diseases.

When a test is implemented DPH relies on the Centers for Disease Control that has developed a methodology. When the methodology is imported, it is validated on the Department's instrumentation and with its population. In effect the Department creates their own normal reference range for the state to avoid missing a child who is a true positive while also minimizing false positives. Also the Department looks at other available treatments or interventions that can be made during the neonatal period to manage the disorder. The laboratory only does screening; if a positive result is found, the patient is referred to a specialist that will do the official diagnosis. If that specialist diagnoses the baby with a disorder, the laboratory is informed to help assist with the lab's methodology. The other criteria looked at is if the provider's resources are in place. If the Department is thinking of implementing a new disorder they work closely with specialty treatment centers and the genetic advisory committee ensuring that they are ready to receive these babies.

Adrienne Manning listed endocrine disorders, carbohydrate digestion disorders, fatty acid oxidation disorders, and SCID as disorders recommended by the Secretary of Health and Humans Services for national screening. There can be beneficial outcome for the patient if the diseases are detected early enough. Many patients cannot be cured but can receive lifelong treatment. The diseases will not always cause death but can cause severe problems. Though many of the disorders have incident rates for how often they appear in the population, this varies and is not an exact science. Sometimes false positives are generated due to something that was done prior to collecting the infant's blood, like a blood transfusion or special formulas. Conversely, collecting blood too early can create a false negative because chemical levels in a newborns blood have not yet been normalized.

Michelle Cotton stated she has a question surrounding short-chain acyl-CoA dehydrogenase (SCAD) and medium-chain acyl-CoA dehydrogenase (MCAD) and how the state doesn't want to test for SCAD anymore. Her son is asymptomatic SCAD and has been hospitalized 13 times. She wanted to know what goes into removing a disorder from the screening test.

Adrienne Manning stated the vast majority of the SCAD patients are asymptomatic. Often times there is not a lot known about a particular disorder; there a fine line walked by patients who are symptomatic vs. asymptomatic and she is concerned that some patients are over treated. Many states are removing this test because a lot of kids have SCAD but never become ill. There are many disorders than can be screened for but do not have a treatment yet; they try to balance that when determining what to screen for.

Going forward, what is screened for has to be determined by experts in the field who work with children on a regular basis.

Michelle Cotton asked if disorders are placed on the list based on the deadlines of a disorder.

Adrienne Manning stated some disorders are not life threatening but can cause some serious issues. It more has to do with the quality of life for a patient and to increase the chances of a positive outcome.

Michelle Cotton stated one of the problems with her son is that an in-state laboratory was not functioning and her son's samples had to be sent to Boston, with the results taking over a week to get back. She further asked that if a lab is down for maintenance, whether there is a secondary or back up laboratory.

Adrienne Manning stated that there are laboratories nationwide that can do similar testing. Her laboratory personally has a continuity of operations plan in the event the lab is out of commission.

Dr. Gulati asked if DPH wanted to comment on the slides provided earlier in the meeting.

Adrienne Manning stated the slides are an overview of what exactly DPH does in newborn screening. The process begins with a quality check on the blood sample.

Dr. Gulati asked how long before the samples are received.

Adrienne Manning stated samples are received daily but only tested Monday-Friday. There is a staff of 12 individuals that help to carry out this testing and nursing staff that calls the hospitals back with the results.

Dr. Gulati asked what the process is in the event of a positive test.

Adrienne Manning stated that in the event of an abnormal screening, a retest is done from the same sample to determine if the test is accurate.

Lynne Sherman asked in the event of a positive screening what treatment centers are contacted with the test results.

Karin Davis explained that the newborn screening system is the database that has 1000 users throughout the state that every baby is entered into. Fifteen days into the life of a child vital records are imported. When a blood specimen is taken from a child that information is put into the database and tracked. This database prevents a baby's records from being missed in the shuffle. The samples are tracked electronically as to where and when they travel from the hospital to the laboratory.

Dr. Gulati asked how treatment centers are defined by the Department of Public Health

Adrienne Manning stated the treatment center in Connecticut is typically Yale.

Dr. Gulati asked if this center is notified when there is any positive test.

Adrienne Manning stated that the infant is usually tracked by the physician. That information is faxed to the appropriate treatment facility based on proximity to Yale or UConn.

Dr. Gulati asked who is responsible for ensuring the contact between the child's birth place and the parent.

Adrienne Manning stated it is the pediatrician's responsibility to inform the parents. DPH reports the results back to the submitter of the blood samples. There is a lot of tracking down where this infant is and who the pediatrician is. After that, it is the pediatrician's responsibility to inform the parents and arrange treatment of the child.

Dr. Gulati asked if there is a direct link between DPH and the child's parents.
Adrienne Manning stated that is the responsibility of the pediatrician.

Lesley Bennett asked if any information is provided to the patient or doctor by DPH.

Adrienne Manning stated there is information provided on the DPH website and when the newborn screening test is collected some basic information is provided to the parents at that point. Much of the education comes directly from the treatment facility.

Lesley Bennett stated there is a lack of knowledge regarding these rare diseases with pediatricians. The DPH website only lists about 50 disorders on their website. Physician education is a key to combating rare diseases.

Elise Gaulin-Kremer stated that the treatment centers are under contract from DPH to serve triage and diagnostics function. A part of that contract includes a requirement for physician education.

Lesley Bennett stated she wanted the Department to be more proactive in that regard because there are still issues in the community with physician education. Further education is a way to ensure a better overall patient outcome and save the state money in the long term.

Elise Gaulin-Kremer stated their expertise was in the laboratory testing component and that they are not in a position to dictate clinical care and management.

Lynne Sherman stated the effort to educate the community is a collaborative effort that involves all parties to increase awareness.

Michelle Cotton stated her issue was with the Yale geneticist, who 3 weeks after giving birth, still wanted to test her pedigree to see what side of the family her son's disorder came from. This gave her the impression they were more interested in studies. She had to continue asking for basic information about the disorder.

Dr. Gulati asked what links are available on the newborn screening website to the specialty centers and further information about the various disorders.

Karin Davis stated that she has spent a great deal of time working most recently with physicians and the birthing facilities trying to combat Zika virus. Her job at the laboratory is not to educate providers but she contacted the Connecticut American Academy of Pediatrics. She told them that providers use their website for education and she has been unable to find Zika on the website. She had a meeting with the heads of the

organizations and found out that they now do lunch and learn with their membership. She further stated that a lot of doctor's offices do not use emails and this makes it difficult for the Department when trying to forward important information on various diseases.

Dr. Gulati stated that continued education has to happen over and over throughout the year. As a physician there is so much information to absorb and often times things are forgotten. She asked if the Department would like to talk further about the Birth Defect Program.

Karin Davis stated the Birth Defect Registry is a part of the Maven Newborn Screening System. Every newborn is screened for birth defects. It is a passive screening system, with the results of testing reported to the National Birth Defects Prevention Network. When Zika arrived it became a Rapid Active Case ascertainment database. Currently there are 60 kids born since Jan. 1, 2016 with a Zika related birth defect. For those children the department has to reach out to the provider for further information regarding the patient's mother, travel status and partner health status.

Lesley Bennett asked if it would be possible to put information on the Department's website about newborn screening and associated disorders.

Karin Davis stated that the lab is in the process of updating their laboratory webpage to include links, fact sheets and other useful sites.

John Morthanos asked how the DPH website can be made more informative in general.

Karin Davis stated every program at DPH has a webmaster that handles that portion of the website. There is not one overall DPH webpage but a site that involves many people.

Lesley Bennett again stated the difficulty in finding information for these diseases on the DPH website and asked if the Department is looking at exome sequencing as the cost comes down.

Adrienne Manning stated that the Department is not there just yet but some other places around the country are. Her concern is that there can be an overlap between diagnostic and screening fields. She further stated that there may not be a complete understanding of the pathogenic mutations that cause these diseases. Some states with large populations like Texas and New York have been using exome sequencing because of the large number of infants being born on a yearly basis.

Dr. Gulati asked how often the testing centers confirm tests with exome sequencing and who covers that cost.

Adrienne Manning stated she is not sure who pays for the testing. She also stated that Yale sometimes sends test to Emory, Baylor or the Mayo clinic for further testing. One of the dangers of *ex*ome sequencing is that a lot of information can be gathered yet we don't know what it all means and therefore this information should not be incorporated into newborn testing. She stated the lab is looking at doing second tier analysis but not exactly sequencing.

Lesley Bennett asked if there are issues collecting samples that result in skewed test results.

Adrienne Manning stated that sometime samples are incorrectly collected but that is not normal. Sometimes the time of samples are flipped because military time is used. A lot of training is done so nurses know how to collect samples and handle them.

Dr. Gulati opened the meeting up to the public.

Mark Keenan stated that the meeting has been very helpful and intends to further look at updating the DPH website with more information regarding newborn disorders. He further stated that he will reach out to treatment centers to setup additional trainings.

Karin Davis asked the Task Force to provide how they would like to see information posted to the website, so that it can be given to the webmasters at DPH and they can adjust the site accordingly to make it more user friendly.

Michelle Cotton stated the website certainly needs to be patient friendly and offered her time and assistance in reworking the site to achieve this end.

Dr. Gulati suggested a sub-task force to look at how information should be presented on the DPH website and what kind of information should be included on Rare Diseases.

Karin Davis asked if any of the task force members consulted United Way 211 as they are a great resource and education center within the community.

Julie Gertsy stated she is happy to be here and offered her services to the task force as a founder of RAND New England. She stated that she wants to know about the direction of the task force.

Dr. Gulati stated the Task Force is looking at common issues in the rare disease community and how to best alleviate those problems. She thought that newborn screening was the best and most logical place to start discussions given that data exists within the state regarding these rare diseases.

Michelle Cotton asked that going forward greater attention be given to the education of doctors, hospitals and schools.

Karin Davis stated that often times things do not go through the local board of education. There are people at the state Department of Education that can provide a basic overall training for individual schools.

Julie Gertsy stated that RAND New England has put out a list of resources for parents to consult and find more information on many of the rare diseases.

Dr. Gulati stated at future meetings the Task Force will review what current resources exist for patients and how to get that information into the hands of the community.

Mary Anne Mae stated that one of the biggest issues faced by the community is getting physicians and hospitals to direct patients and their parents to the appropriate source of help.

Dr. Gulati adjourned the meeting at 2:46 PM.