



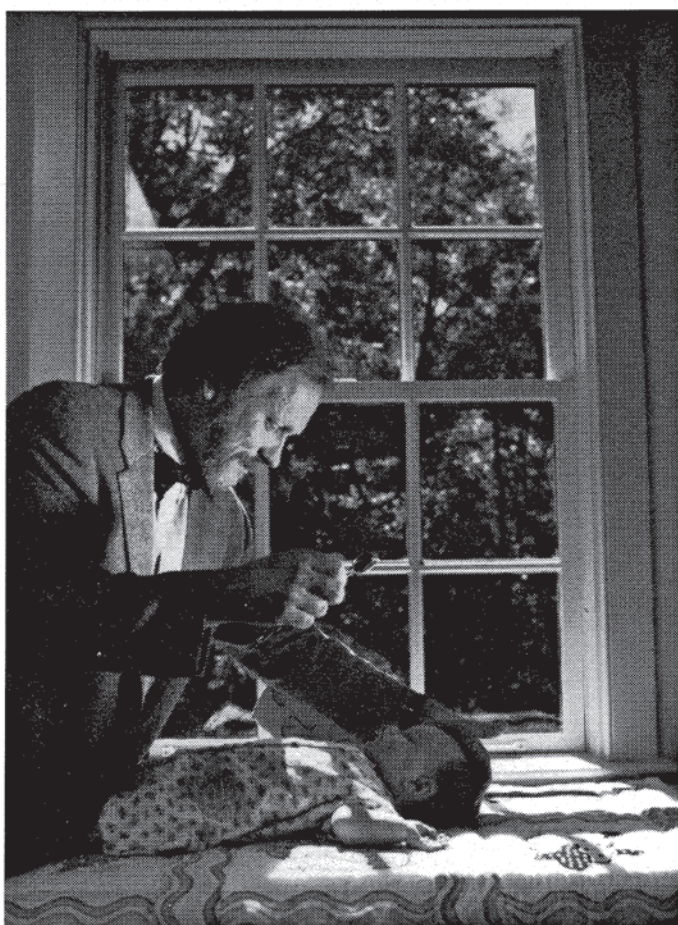
CLINIC FOR SPECIAL CHILDREN NEWSLETTER

VOLUME I NUMBER 14

* LANCASTER COUNTY, PENNSYLVANIA *

Spring 1998

The Clinic was very blessed this past year with gifts of support from so many in the community it serves and from others who want to help our efforts to advance medical care and research for children with rare metabolic and other genetic disorders. We thank each of you for your support of the clinic for the children we serve, and for your faith and help in our work.



Holmes Morton, M.D. and his patient, Nikki.
Photo by Max Hellweg for **TIME** appeared with article on Dr. Morton and the Clinic in last winter's Time Special Issue: *Heroes of Medicine*

TIME TO REFLECT

Ten years ago this summer Dr. Morton made his first trip to Lancaster County to visit an Amish family whose son he had diagnosed with the rare disorder Glutaric Aciduria type I (GA I). That first visit led from one family to another in this region of Pennsylvania with children who suffered from this strange disease which brought sudden brain injury, paralysis and shortened young lives. At the time only eight cases were reported in medical literature. The idea of a clinic grew from the Mortons'

encounters with Amish and Mennonite families who were struggling with the need for timely diagnosis and care for their children who had inherited rare genetic disorders such as GA I and maple syrup disease (MSD).

After ten years of work the Clinic cares for more children with GA I and MSD than any medical center in the U.S. and consults with parents and physicians in this country and internationally on care for children with these and other rare disorders. The Clinic has diagnosed and provides clinical services for children with over 70 different types of genetic disorders and syndromes. Our research effort is directed toward improvement in diagnosis and care not only for the children we see here, but for children elsewhere who also suffer from these disorders. Most of the diseases we treat are not unique to the Amish or to the Mennonite community although they occur with high frequency due to inheritance factors, but they occur in populations all over the world.

Our progress in improving care for children is in great part a gift from the Amish and Mennonite communities here and especially from the children themselves.

THE 8TH BENEFIT AUCTION SEPTEMBER 19, 1998

As we look forward to this year's auction planned for September 19th, we reflect on the success of last year's Annual Benefit Auction and are thankful for the generous spirit that sustains the Clinic. Last year an estimated six thousand people attended with 1433 bidders registered. Treasures and bargains were there for everyone as they will be this year.

Quilt sales climbed higher than ever with 76 large size quilts averaging \$542 per quilt. Seven quilts sold for over \$1000 with the highest bid at \$1400. Last year a handkerchief quilt made from handkerchiefs given over the years to two sisters handicapped with a genetic disease brought one of the top bids. This year there will be another handkerchief quilt made by the same family for the auction from Christmas handkerchiefs. Postage stamp, broken star, and many other patterns of handmade quilts are on their way. The pony driven ice cream maker will return and the steam engine ice cream maker will again churn out delicious ice cream - as much fun to watch as to eat! There will be a pony and cart, another playhouse, a truckload of Rubbermaid items, and many surprises.

Last year more hand made furniture was donated for sale than in other years. Several bedroom suites, cherry and oak dining sets, a grandmother's clock, book cases, and other assorted pieces brought good prices. This year the auction committee plans to find a better way to display and sell the furniture. Each year brings ideas and suggestions for the next. But the food couldn't get any better! A sampling of what was enjoyed last year and we hope will whet your appetite for this year:

135 strawberry pies; 1408 lbs of ice cream in 3905 cones;
70 gallons of soup; 1500 servings of french fries; 3240 subs;
1300 ham & cheese sandwiches; 4400 soft pretzels (700 lbs.
of flour) 500 cups of coffee; 4636 soft drinks; 3400 pint drinks
136 gallons of hand squeezed lemonade
10,200 doughnuts with 540 lbs of doughnut filling and 120
lbs glaze sugar *(Dr. Morton informed us there were
approximately 1,472,727 total calories in the doughnut
filling! We think he needs a break from calculating diets.)*
3800 pieces of chicken (58 cases) barbecued over 1600 lbs of
charcoal with 105 gallons of sauce and 12 lbs of pepper;
2840 lbs of ice; 3 pigs

(Thanks to Steve Huyard for keeping track of all that we ate!)

The auction requires hours of organization and preparation. Quilts are beautifully hand stitched, furniture expertly crafted, breads, pies and cookies baked and many items generously given. A dozen families who form the Auction Committee once again will give us their time and energy to make this day such a success. Our thanks once again to those who serve on the auction committee and to all of their helpers. We look forward to September 19th. The sale begins at 8:30 am and ends when all is sold at Leola Produce Auction Center located on Brethren Church Road (north off of Rt# 23), Leola, PA.

If you have items to donate please call one of the following at 717 area code: 626-4863; 354-5415; 656-9694; or 733-2645

AUCTION #2 IN MARTINSBURG AREA

Old Order Mennonite families with children with maple syrup disease (MSD) in the Blair County region of Pennsylvania held their first benefit auction last summer to raise funds for the MSD Symposium and to assist the clinic. Their second auction to benefit the clinic is planned this year for September 12th at Morrison Cove Produce Auction Center, Rt #36 north of Woodbury or 6 miles south of Roaring Spring, PA. This auction will also feature quilts, furniture, baked goods, chicken barbeque, and many handmade crafts, farm and household items. *Please call one of the following if you want to donate items or need information, all at area code (814): 793-3634; 793-3010; 793-2423; 832-2731.*

We thank all who help gather this support for the clinic's care and research for children with genetic disorders. We will put these funds to good use in many ways and hope the effort given by many volunteers will be a joy to each of you .

NEW STAFF

The Clinic is very pleased to announce the appointment of Erik Puffenberger, Ph.D., as Assistant Laboratory Director as of January 1, 1998. Dr. Puffenberger received his Ph.D. in Genetics from Case Western Reserve University in Cleveland. He previously was a Research Associate at Case Western

Reserve, senior lab technician and editorial assistant for Dr. Victor McKusick's department at Johns Hopkins. Dr. Puffenberger brings to the Clinic not only his meticulous laboratory skills, but his expertise and interest in genetic research which focused on the Mennonite population. In a short time Dr. Puffenberger has developed a number of genetic tests for clinical use to further the Clinic's diagnostic capability and service to the Amish and Mennonite population. We are thankful, relieved, and excited with Dr. Puffenberger's addition to our staff.

HEWLETT - PACKARD GIFT

The Hewlett - Packard Company through its U.S. Contributions Board program has granted the Clinic for Special Children a generous gift of new laboratory equipment to update and replace the Gas Chromatograph /Mass Spectrometer HP gave the Clinic in 1989 and a new Chem Station to update the the HPLC amino acid analyzer purchased for the Clinic by several donors in 1990. We are extremely grateful to HP for the company's support of the Clinic. The initial gift of equipment (the GC/MS) was generated by Hewlett- Packard founder, David Packard, after he read a story in the *Wall Street Journal* by Frank Allen about efforts to establish this clinic and Dr. Morton's need for laboratory equipment to diagnose and treat Amish and Mennonite children with rare metabolic diseases. Since 1989 the GC/MS was used to test 3,278 infants through the clinic's newborn screening program for glutaric aciduria. Twice that number of additional tests were performed with this equipment to monitor children after diagnosis and for research purposes. The clinic uses the GC/MS to diagnose at least 19 different disorders. The HPLC has performed 8,994 analyses to date to diagnose and monitor children with maple syrup disease. This equipment has served many children over the years, has helped advance a model of medical care that has successfully minimized the effects of severe disorders that at one time were always life threatening. The value of this gift of equipment is profound and we thank Hewlett-Packard for their generous support.

SMITHSONIAN AWARD

The Clinic for Special Children was honored by the Smithsonian Institution to be included in the 1998 Permanent Research Collection on Information Technology Innovation at the National Museum of History. Dr. David Allison, Chairman of the National Museum of American History's Division of Information Technology and Society cited the clinic for "using information technology to make great strides toward remarkable social achievement in medicine". The clinic was nominated by Mr. Lewis E. Platt, CEO, President and Chairman of Hewlett- Packard Company. We thank Mr. Platt for this honor and The Computerworld Smithsonian Awards program for the opportunity to share information gleaned from this work through the Museum's archives.

Dr. Morton was given the Award of Academic Excellence by the Children's Research Institute at the Children's National Medical Center in Washington, DC, in May.

RESEARCH NOTES

Maple Syrup Disease (MSD): The Clinic currently manages more than 55 patients with MSD. Most of these patients are from the Mennonite communities in Lancaster and Berks counties, PA (or their derivative settlements in other states). Since 1994 the clinic has provided an MSD carrier test for individuals at risk for having a child with MSD. To date, we have tested over 700 individuals for the Y393N mutation in the branched-chain alpha-keto acid dehydrogenase gene and have found 182 carriers.

As part of our continuing interest in the biology of MSD, we have recently analyzed the incidence of MSD in the Groffdale and Weaverland Conference Mennonites. Over the time period 1985-1994, there were approximately 6810 Mennonite births. Eighteen of these children were subsequently diagnosed with MSD. Thus, the incidence of MSD for this time period was 0.26% (18/6810) or 1/378 births. From these data, the Y393N carrier frequency in this population was calculated to be approximately 9.7%. Thus, about 1 in every 10 Mennonite individuals, on average, is a carrier for the Y393N mutation.

Glycogen Storage Disease (GSD6): In the spring of 1997, the clinic embarked on a collaborative study of glycogen storage disease, type VI, with Dr. Les Biesecker at the National Institutes of Health, Bethesda, MD. Dr. Biesecker's laboratory has recently identified the gene which causes GSD6. He used blood samples from several local Mennonite families to identify the causative gene (the liver glycogen phosphorylase gene found on chromosome 14). Their laboratory has also identified the specific DNA change within the gene which causes the Mennonite form of GSD6. This research was recently published in the scientific journal, *Human Molecular Genetics* 7: 865-870, 1998.

At the Clinic, we have used the information from Dr. Biesecker's research paper to develop a carrier test for GSD6. The carrier test for GSD6 will now be offered at the clinic for individuals who wish to know whether they are carriers for GSD6. In addition, the test is also useful for diagnosis of individuals thought to be affected by GSD6. That is, this simple test will help diagnose individuals who have the Mennonite form of GSD6 without the need for a liver biopsy.

Congenital Nephrotic Syndrome (NPHS1): Congenital nephrotic syndrome (NPHS1) is a very serious kidney disorder which strikes in infancy. The disorder is characterized by massive proteinuria (protein in the urine) and is progressive, leading to death within the first two years of life. There is a high incidence of this condition among Groffdale Conference Mennonites, with a carrier frequency which is approximately 12%. Among this group, the disease is often referred to as the "Burkholder kidney disease." This condition also has a high incidence in Finland (about 1/10,000 births). Recently, a group of Finnish researchers identified the gene (called nephrin) which causes congenital nephrotic syndrome (*Molecular Cell* 1: 575-582, 1998).

The Clinic has been collaborating with the laboratory of Dr. Aravinda Chakravarti at Case Western Reserve University in Cleveland, OH, to study NPHS1 in the Mennonite

community. A few months ago, they identified a mutation in the nephrin gene which is the cause of the Mennonite form of the disease. Based on this research, the clinic laboratory is developing and testing a carrier test for use at the clinic.

Spinal Muscular Atrophy (SMA): Dr. Morton and Dr. Richard Kelley of the clinic and Kennedy Krieger Institute continue to collaborate with Dr. Tom Crawford, pediatric neurologist at Johns Hopkins to study SMA. The gene mutation for this disease has been identified and the clinic is now able to test infants at risk for this condition. This spring children with SMA and followed here were evaluated by Dr. Crawford at the Clinic. Studies continue to seek treatment to help children with this progressively debilitating disease.

Lethal Microcephaly of the Amish: For the past several years Dr. Kelley and Dr. Morton have studied and cared for twelve infants of Old Order Amish with a previously undescribed, lethal form of microcephaly. At least 36 additional affected infants who had died were identified through interviews of related Amish families. This past year we learned more about this condition. The MRI of a 4 month old patient showed an immature brain very similar to that of a 24 to 28 week fetus. Essentially the brain was intact, but growth had arrested at this stage of development. Also, urinary organic analysis of five infants revealed extremely high levels of 2-ketoglutarate but with normal levels of other organic acids except lactate. Treatment of two patients with thiamine significantly reduced 2-ketoglutarate which suggests a primary deficiency of 2-ketoglutarate dehydrogenase, a thiamine-dependent enzyme of the citric acid cycle. Two infants tested during acute viral illnesses had severe lactic acidosis in addition to 2-ketoglutaric aciduria. They died with this acute condition. Although we have evidence of thiamine-responsiveness in this disorder, we doubt that treatment with thiamine either prenatal or post natal will have significant clinical benefits.

We estimate the incidence of this lethal syndrome to be about 1 in 500 Old Order Amish births in Lancaster County, making it one of the most common genetic disorders we see in this population. All 48 infants are descended from a single Amish couple of the mid 1700's, and the inheritance pattern is consistent with simple autosomal recessive inheritance. Analysis also showed a secondary founder effect by a couple in the mid 1800's, 9 of whose 12 children have descendants with this form of microcephaly. This winter the Amish community here buried five infants with microcephaly.

The recent finding of a thiamine-responsive intermittent lactic acidemia in a non-Amish child with severe congenital microcephaly suggests that defects of the citric acid cycle function may not be uncommon causes of severe congenital microcephaly in the general population. We thank the families of these infants for allowing us to participate in their care and to do the tests that have given us this new information. We hope someday it will prove helpful as we continue our efforts to learn more about this disease.

Crigler-Najjar Syndrome (CN1): Over the past several years, we have enjoyed an ongoing collaboration with Dr. Roy-Chowdhury at Albert Einstein School of Medicine in NY. Crigler-Najjar syndrome, type 1 (CN1), is a form of

hyperbilirubinemia which causes severe jaundice and can be life threatening. The clinic has seen several families with affected children. From a population genetic standpoint, this inherited disorder is unique since it is found in both Amish and Mennonite families.

Dr. Roy-Chowdhury's laboratory has succeeded in identifying the gene responsible for this disorder. The gene, called bilirubin UDP glucuronosyl transferase, is located on human chromosome 2. Interestingly, the mutation in the gene which causes CN1 is identical in both the Amish and Mennonite families. This indicates a shared ancestry sometime in the distant past which introduced the same mutation into both populations. Through this research, the clinic has been able to develop a carrier test for Crigler-Najjar syndrome.

BRIGHT PROMISE IN GENE THERAPY

On Friday, August 7, the clinic hosted a small meeting for the Crigler-Najjar families of Amish and Mennonite descent. Dr. Michael Blaese, Chief, Clinical Gene Therapy Branch of NIH spoke about a new and very promising technique for correcting the gene defect in Crigler-Najjar syndrome. The method, called *chimeraplasty*, involves transfusion of a DNA/RNA hybrid molecule through an IV. This molecule is linked to the sugar lactose, which facilitates its uptake into the liver. Once inside the liver cells, the hybrid molecule (the *chimeraplast*) uses the cell's natural DNA repair enzymes to correct the mutation in the gene.

Dr. Blaese and Kimeragen, a Newtown, PA, biotechnology company are hoping to gain FDA approval to begin human trials of this new therapy in late fall or early winter in collaboration with the Clinic. Crigler-Najjar syndrome is a promising candidate for this new technology for several reasons. First, the progress of the therapy can be measured easily through blood tests (i.e. bilirubin levels). Second, since Mennonite and Amish patients with CN1 have *no measurable* bilirubin UDP glucuronosyl transferase activity, bilirubin builds to high levels in the blood. Therefore, even modest success in correcting the gene defect should lead to measurable decreases in serum bilirubin. Third, all the CN1 families at the clinic share the same mutation in the gene. This means that only one chimeraplast molecule can be constructed to treat all the Amish and Mennonite patients.

We are very excited by this new technology as it holds the potential to treat many different disorders, including Crigler-Najjar syndrome (CN1) and maple syrup disease (MSD). We will continue to keep everyone informed on the progress of this new treatment.

GLUTARIC ACIDURIA

Dr. Morton and Dr. Kevin Strauss are in the process of investigating methods that in theory may provide some relief to GA1 patients who suffer severe dystonia resulting from brain injury as a complication of GA1. Such therapies have been effective in older patients with diseases such as Parkinsons. Dr. Morton also participated in a meeting set up by Michael Metil, president of IOGA, to investigate brain cell transplant possibilities for injured GA1 children. More detailed descriptions of these efforts will be given next issue.

NEWBORN SCREENING ISSUES

Data accumulated by the Clinic over the past ten years through our efforts to screen and provide early treatment for infants with genetic diseases is contributing to efforts in other regions of the U.S. to update methods and expand neonatal screening. Dr. Morton was invited to present data from the clinic at the National Neonatal Screening Symposium held in San Diego in March. He also lectured at a regional meeting in New England for parents of children with metabolic disorders, and delivered the Annual Leroy Hoeck MD Lecture at The Children's National Medical Center in Washington, DC, on the topic of children at risk.

The New England region is currently engaged in controversy regarding newborn screening policies. Dr. Harvey Levy, Harvard Medical School and Boston Children's Hospital and known world-wide for his expertise on neonatal screening leads an effort in that region to revise screening services. Data from the clinic's testing and follow-up program are central to his argument as he seeks to advance services in that region through the use of tandem mass spectrometry similar to the Neo Gen supplementary screening program available in Pennsylvania.

The operation of the Clinic spans the time before and after the introduction of neonatal screening for medium chain acyl-dehydrogenase deficiency (MCADD), maple syrup disease (MSD), and glutaric aciduria (GA1). Over 10 years we have cared for 23 children with MCADD, 57 children with MSD, and 54 children with GA1. Within our patient populations, 9 neonates with MCADD, 14 with MSD, and 12 with GA1 were treated prospectively through neonatal screens.

If children who have MCADD, MSD, GA1 are not recognized and treated in the neonatal period, most will have prolonged and repeated hospitalizations, severe neurological disabilities or die. The injury and death of children with these disorders can be prevented through diagnosis of asymptomatic infants and appropriate medical care. The medical care necessary to treat MCADD, MSD, GA1, and other organic acidemias is comparable in complexity to that required to manage diabetes mellitus and can be provided by existing medical services. Our clinical experience supports expanded neonatal screening by the use of tandem mass spectrometry.



"Screening" visitors to the Clinic for the MSD Scientific Meeting in June

MSD SCIENTIFIC MEETING

The National Biennial Symposium for Maple Syrup Disease was held in June in Lancaster County with an overwhelming turnout of families and professionals from this country and overseas. Lectures and discussions followed the theme of "Progress, Problems, and Promises". Prior to the two day symposium for parents, the Clinic sponsored a day long scientific meeting to examine neurological effects of maple syrup disease and to provide an overview of the clinic's approach to management of MSD as presented in a first draft of a Manual for Care. Dr. Morton and Dr. Kevin Strauss, Resident in Pediatrics at Boston Children's Hospital who spent four months of his senior year of Harvard Medical School in study at the Clinic, discussed a "new" disease model for MSD which recognizes the greater role of leucine as a modulator of amino acid transport into the brain and out of cells. Much of the information presented at the Scientific Meeting was based upon work by Dr. Halvor Christensen who attended the meeting. Dr. Christensen remarked that some of his most important observations about how leucine influences the transport of other amino acids were made at Boston Children's Hospital in 1949. His early experiments led to the discovery of the transport system that regulates entry of the neutral amino acids into the brain and provided the first observations that increased concentrations of leucine and phenylalanine cause intracellular entrapment of selective amino acids. Dr. Christensen's discoveries are key to clearer understanding of how high serum leucine causes a complex neurologic syndrome that includes sudden changes in level of consciousness and coordination, brain edema, as well as chronic malnutrition of the developing nervous system. After Dr. Christensen's remarks Dr. Morton and Dr. Strauss presented their studies of the neurological signs and MRI findings of acute leucine intoxication, described management protocols that allow recovery from cerebral edema, usually irreversible and fatal, and presented MRI findings of patients after prolonged imbalances in serum amino acids caused arrests of brain growth and development.

Douglas Wilmore, M.D., Professor of Surgery, Harvard Medical School and Brigham & Women's Hospital in Boston discussed biochemical, endocrinologic, and inflammatory variables that must be controlled to prevent endogenous protein catabolism and sustain protein synthesis in ill or injured patients. His studies and recommendations of the use of glutamine in nutritional management were important contributions to the meeting.

Quentin R. Smith, PhD, Chairman, Department of Pharmacology, Texas Tech University presented data about neutral amino acid transport across the blood brain barrier and what that suggests about acute neurological dysfunction and chronic amino acid deficiencies in the central nervous system of patients with MSD.

Attended by approximately 35 physicians and researchers including Dr. Hugo Moser of Kennedy Krieger Institute and an early supporter of the clinic's work, the scientific session concluded with discussion of new strategies to prevent illness and injury in patients with MSD. The current strategy based on the central idea of simply lowering leucine to control MSD does not necessarily promote optimal growth and development. Children survive but are often compromised with some degree of malnutrition, poor brain growth, and mild to severe physical impairment. The new strategy developed by Dr. Morton and used by the Clinic seeks to balance the ratios of the amino acids leucine, isoleucine and valine by modifications in formulas and uses glutamine and alanine to help promote protein synthesis and catabolism in muscle and liver. This strategy has enabled many of the younger MSD children in care by the clinic to achieve and maintain normal growth and development.

Following the day long meeting we enjoyed a Lancaster County supper graciously hosted by friends and neighbors, Marilyn Lewis and Marian Ware. We thank them for such a lovely evening to conclude our meeting.

THE MSD '98 SYMPOSIUM

Parents of children with MSD from this region of Pennsylvania dedicated much time and energy as hosts of the two day meeting held at the Willow Valley Resort, located a short distance from the Clinic. The symposium provided opportunity for parents and physicians to present and discuss the latest in research and treatment protocols, for teenagers to discuss their issues together and for younger children to simply have fun. Dr. Holmes Morton's lecture to open the meeting entitled "Progress, Problems, and Promises" gave an overview of the evolution of treatment of MSD for Mennonite families in Lancaster County. He introduced the first draft of a Manual for Care for MSD based on the Clinic's ten year experience and approach of diagnosis and care of 30 neonates and 60 patients who range in age from a few months to 33 years. The manual is intended for use by physicians and parents and will be revised for a more complete version during the coming year. Other speakers included Dr. Harvey Levy, Harvard Medical School and Boston Children's Hospital, who presented an update on newborn screening for MSD in the U.S.; Dr. Vivian Shih, Harvard Medical School and Massachusetts General Hospital, discussed how neonates and children with MSD are managed in centers in other regions of the U.S. as well as other countries; Dr. Phyllis Acosta, Director of Metabolic Diseases for Ross Products Division discussed formulas and special foods necessary to children with MSD and Dr. Neil Buist, Professor of Pediatrics at Oregon Health Sciences University in Portland, assessed nutritional problems associated with MSD's very restrictive diet and how certain problems can be prevented. In a second lecture Dr. Morton analyzed effects of MSD on the brain such as cerebral edema, muscle weakness, appetite and sleep patterns, and the development of myelin. Contrasting MRI images with clinical observations he gave all of us a greater understanding of the complex involvement of the brain in this disorder and provided parents, children and practitioners a frame of reference for their daily observations.

In other presentations the liver transplant and progress of a 7 year old MSD patient with liver failure due to vitamin A toxicity was described by Dr. Morton and by Dr. Paige Kaplan, metabolic specialist of Children's Hospital of Philadelphia where the transplant was performed. This experience demonstrated there are possibilities of "curing" MSD with correction through the liver. Dr. George Mazariegos of the Thomas Starzl Transplant Institute in Pittsburgh described all that is involved with liver transplant. Transplant bears high risks and requires lifelong medication to prevent rejection.

Dr. Richard Kelley, of Kennedy Krieger Institute & Johns Hopkins and the Clinic discussed the nature of metabolic diseases in light of recent developments in the field of gene therapy. Dr. Rody Cox, Dean and Professor of Internal Medicine at the University of Texas, Dallas, outlined progress of gene repair by viral vectors and insertion of new genes. The final presentation of the symposium revealed the promise of a new approach to gene therapy called chimeraplasty, presented by Dr. Michael Blaese, Chief, Clinical Gene Therapy Branch of NIH. In chimeraplasty, gene correction is achieved through infusion by IV of a chimera gene which corrects the abnormal gene sequence in MSD patients in the liver (also potentially in Crigler-Najjar patients). With low risk to the patient, this therapy has the potential to be effective for infants as well as older children. Dr. Blaese, the Kimeragen Company, and the Clinic hope to begin trials within a year.

THE CLINIC FOR SPECIAL CHILDREN, INC.
P.O. BOX 128
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Eighth Annual Benefit Auction

to support

THE CLINIC FOR SPECIAL CHILDREN

Quilts Handmade Toys Furniture Crafts Baked Goods Chicken Barbeque

Donations Appreciated

September 19, 1998

All Day from 8:30 A.M.

Location: Leola Produce Auction, Brethren Church Road, Leola, PA

Directions: From PA Turnpike, exit 21 Rt. #222 south, exit to Rt. #772 south east, left on Peace Rd., 2nd right.

From Lancaster: Rt. #23 east, turn left (north) on Brethren Church Rd. past Leola.

From Rt. 30 east: right to Rt. #772 (Newport Rd.) north west to Rt. #23, right on #23 (New Holland Pike), left on Brethren Church Rd. Auction is approximately 1 mile.

Come enjoy the fun, food, fellowship, and lend support !

If you wish to make a donation for the sale, please call one of the following for information:

(717)-626-4863 ; (717) 354-5415 ; (717) 656-9694 ; or (717) 733-2645

The Clinic for Special Children is a non-profit diagnostic and primary pediatric medical service for children with inherited metabolic disorders in Lancaster County, Pennsylvania. The clinic serves Old Order Amish, Mennonite and other families who suffer from a high incidence of genetic diseases such as glutaric aciduria and maple syrup urine disease. Clinic services include infant testing programs for early diagnosis, primary medical care to prevent devastating effects of metabolic diseases, clinical research to improve treatment, and services to support the needs of parents. The Clinic is funded through a combination of fees for services, benefit auction proceeds and private contributions. The Clinic is tax exempt under IRS 501 (c)(3), ID # 23-2555373. P.O. Box 128 Strasburg, PA 17579 (717) 687-9407

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