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Harvey® and Hal®: Not Your Usual Set of Dummies!

What's the best way to learn how to do procedures, get no risk surgical experience, learn specific aspect patient examination, and handle urgent care scenarios? Increasing evidence suggests that high fidelity patient simulators can improve trainee outcome and success without risk to the patient often experienced in physician training. The history of simulator use goes back to the 1980's in providing procedural and surgical experience. The Clinical Skills Center at LSUHSC in Shreveport, LA gives students, residents and fellows in training an opportunity to gain experience in patient care and procedures and prepare them for direct patient contact. Physician director Dr. Jane Eggerstedt and coordinator Susan Lerchie have created an environment to enhance patient care and medical education utilizing both live standardized patients and high fidelity patient simulators. In addition a variety of models and equipment can be used for procedures such as CVL placement, endoscopy, and lumbar puncture.



Figure 1 - Harvey®

The Department of Pediatrics has utilized 3 different patient simulators to give students and residents a chance to become better physicians. These are high quality, state-of-the-art, simulators that provide innovative teaching and learning opportunities. Named for well known diagnostician W.

Proctor Harvey, M. D., the Harvey® cardiac simulator can produce realistic physical examination findings and heart murmurs for numerous congenital and acquired cardiac abnormalities. Each month the 3rd year medical students on pediatric rotations are taught the findings of common childhood defects such as VSD, ASD, PDA and valvar stenosis and insufficiency. They may be able to hear these murmurs for the first time in training. Harvey® is also utilized as an introduction to the Pediatric PL1 level interns.

To gain more experience in handling urgent care patient scenarios, the senior medical students and pediatric housestaff are introduced to the PediaSim manikin. This is a 5-6 year old size patient who can present predetermined patient case scenarios including variations of normal and abnormal physical examination changes, monitoring parameters, and the ability to interact and alter outcomes with care and procedures. IV's can be started, drugs given, endotracheal intubation performed, electrical cardioversion, and chest tube placement can be necessary to save the patient. Not only do the novice physicians learn examination and care skills, but the scenarios also provide experience in making rapid decisions and the confidence to take charge of situations as the coordinators for patient care.

Finally there is baby Hal® who is a component of the Noelle® obstetric series simulator to improve perinatal and delivery care. Baby Hal® is a newborn size simulator that is digitally controlled by a remote computer operator and can create diverse abnormal physical and physiologic states that may present in the newborn. Abnormal respirations, cyanosis, seizure and motor abnor-



Figure 2 - Hal®

malities, arrhythmias, and vital signs can be programmed into the manikin and allow the physician to respond with CPR, intubation, umbilical line placement and other treatments. This is ideal for training physicians to be prepared for delivery room difficulties.

So when no risk experience in pediatric patient care is needed, the LSUHSC-Shreveport Clinical Skills Center can provide training to prepare the physician for the real life situation demands. Some of the smartest state of the art dummies are available to help.



Figure 3 - Pediatric house officers work hard to save the PediaSim patient

Subspecialty Spotlight: Nephrology

The Pediatric Nephrology Section of LSU Health Sciences Center has been managed for the last 10 years by a team of physicians from Children's Hospital in New Orleans, under the direction of Dr. Matti Vehaskari. These physicians, one of whom flies up to Shreveport weekly, have been aided by the tireless efforts of Ms. Toni Guastella, the Pediatric Nephrology Nurse Practitioner. The section is now being significantly expanded with the addition of two locally situated pediatric nephrologists: Dr. Lewis Reisman and Dr. Sabeen Habib. It is their intention to develop a comprehensive service, offering inpatient and outpatient dialysis, as well as helping to re-establish pediatric renal transplantation at LSUHSC-Shreveport. They will also consult on all forms of acute and chronic renal disease, hypertension, and electrolyte abnormalities in children and adolescents. Ms. Melissa Bouillion, administrative assistant, does patient scheduling and generally makes sure that the section functions like a well-oiled machine.

Dr. Reisman joins the LSU Department of Pediatrics and the Children's Hospital, as Professor of Clinical Pediatrics and Chief of the Pediatric Nephrology Section. He is a graduate of the Hebrew University-Hadassah Medical School in Jerusalem, Israel, completed his pediatric residency at Mount Sinai Medical Center in New York City, and his fellowship in pediatric nephrology at New York Hospital-Cornell Medical College, also in New York City. Since completing his training, Dr. Reisman has worked at several academic medical centers in New York and New Jersey. Two

years ago, he came to Shreveport and joined the gratis faculty of LSUHSC and he has now joined the regular faculty. Dr. Reisman has been joined in his adventure in the Deep South, by Dalia, his wife of many years. The couple has 3 adult children who live in other parts of the country and rarely call. Dr. Reisman has a strong interest in end-stage renal disease and a passion to see his patients successfully transplanted.

Dr. Sabeen Y. Habib, our new faculty member, completed her medical school in 2001 at Baqai Medical University, Pakistan. She finished a rotating internship at Aga Khan University Hospital, Pakistan, in 2002, and continued as a research officer/ coordinator at the same institute till 2004. She completed her pediatric residency at Penn State Hershey Medical Center in 2007 and her nephrology fellowship at UTSW Medical Center at Dallas in 2010. She has just joined the Department of Pediatrics as an Assistant Professor in the Nephrology Section. Her research interest during fellowship was in prenatal programming and postnatal modification of hypertension in an animal model. Her clinical interests include hypertension, obesity and transplant nephrology. Dr. Habib lives in Shreveport and spends her free time reading and baking.

Ms. Toni Guastella, APRN, FNP-BC, joined the Pediatric Nephrology Section in July



From Left to Right: Toni Page-Guastella, APRN, FNP-BC; Sabeen Habib, M.D.; Lewis Reisman, M.D.; Melissa Bouillion

2002. She completed her Masters in Nursing at Northwestern State University in May 2001 as a Family Nurse Practitioner and is board certified by the ANCC. She received her Pediatric Nephrology training at Children's Hospital in New Orleans. She has twenty years experience as a registered nurse in neonatal critical care, Kid Med and general pediatrics and has been with the Section of Pediatric Nephrology for eight years. She is planning to adopt the role of pediatric renal transplant coordinator, once the pediatric transplant program is established here in Shreveport. Ms. Guastella has one daughter, age 20, and spends her free time traveling, attending LSU sports activities, and has recently taken up painting classes.

For referrals, clinic appointments, or questions the Division of Pediatric Nephrology may be contacted at 318-675-8631.

Carkeys Update

The Carkeys program based out of the Children's Hospital has seen an exciting spring and summer!

In March 2010, Carkeys launched its website, www.CarkeysArkLaTex.org to help educate the public about the importance of car seat safety. The website also provides the Ark-La-Tex community a way to find a car seat fitting station or car seat check near them.

At the end of April, Carkeys hosted a class to certify Child Passenger Safety Technicians through the National Highway Traffic Safety Administration. The class certified 14 new technicians in the State of Louisiana, including Dr. Marlene Broussard, who is now the only pediatrician in the state of Louisiana to be a certified Child Passenger

Safety Technician and Vanessa Anderson, a Child Life Therapist in the Children's Hospital. Carkeys also sponsored a car seat check in conjunction with the class—leaving 48 youngsters riding a little safer in the Ark-La-Tex!

Spring of 2010 also marked the renewal of our grant from Kohl's Department Stores®. Carkeys is happy to announce we will be receiving \$62,221.00 for the 2010-11 grant year! The continued partnership with Kohl's® will ensure that more children in the Ark-La-Tex will be riding safer for the next year.

On August 6, 2010, Carkeys sponsored a Continuing Education class for CPS technicians at Safety Town. CPS technicians must complete certain education requirements to hold their certification. By holding

a continuing education class in North Louisiana, we are keeping nearly 50 technicians certified.

Carkeys will be sponsoring a car seat check at Safety Town on September 25 from 9 am to 12 pm to observe Child Passenger Safety Week, which is September 19-25, 2010. Kohl's Associates in Action (formerly called the A-Team) will also be on hand at the car seat check. There will be a donation announcement event at 8:30 am before the car seat check to celebrate the renewal of the Kohl's Cares® grant.



Chronic Renal Failure in Children

By: Lewis Reisman, M.D.

Renal Failure and its accompanying chronic illness always have a profound effect on patients and their families, but can be especially devastating when the patient is a child or adolescent. There have been significant advances in recent years in the understanding of the mechanisms of progressive kidney failure and its prevention. There have also been significant advances in the management of children with end stage kidney disease. With today's advances in medical technology, and the expertise of a specialized team of professionals, we can often help these children grow up to be healthy, productive members of society.

Three major categories of illness lead to the majority of renal failure in children:

1) Approximately 40% of renal failure in children is due to congenital structural abnormalities of the kidneys and urinary tract. This category includes renal dysplasia, with and without cysts, obstructive nephropathy, and severe vesicoureteral reflux nephropathy. Even though these problems are often detected by fetal sonography, the damage to the kidneys may not be reversible. Obstruction of urinary drainage at an early stage of fetal development will result in, not only ongoing damage, but also abnormal development of kidney structures. For this reason, correction of the

blockage later in life may not reverse damage to the kidneys.

2) Hereditary diseases of the kidneys cause approximately 7.5% of the renal failure of children and adolescents. These conditions may not cause renal failure until later in life. Alport Syndrome is an X-linked trait with variable penetrance, transmitted from mother to son, causing nerve deafness and kidney failure, primarily in adolescent boys. The boys are born healthy, but will be noted to have hematuria and deafness for high pitched sounds in the first decade of life. By the second decade, they will be quite deaf and in renal failure.

There are several other hereditary diseases which lead to cyst formation, and then kidney failure, in children. Autosomal recessive polycystic kidney disease, named for its pattern of inheritance, usually results in kidney failure and liver failure at birth or in infancy. Autosomal dominant polycystic kidney disease, also named for its pattern of inheritance, may cause kidney failure in infants and children, as well as in adults. Kidney disease is also associated with many systemic genetic syndromes, such as Tuberous Sclerosis, and is often found in infants with chromosomal trisomies.

3) The third general category of kidney disease in children includes a group of conditions

involving inflammation and scarring of the kidneys, glomerulonephritis and glomerulosclerosis, and is responsible for approximately 25% of renal failure in the pediatric age group. These conditions seem to be caused by a combination of immunological abnormalities and, mostly, unidentified genetic factors, resulting either in glomerulonephritis, with hematuria, hypertension and a rise in serum creatinine, or nephrosis with proteinuria, low serum albumin, and edema. In 5% of these cases the renal disease is associated with a systemic collagen-vascular disease such as Systemic Lupus Erythematosus.

Children with chronic renal insufficiency, regardless of the original cause, face similar problems; including metabolic acidosis, poor growth and development, nutritional deficiencies, calcium and phosphorus abnormalities, and resulting hyperparathyroidism, and bone disease. Care of these patients is labor intensive and requires a team approach from the doctors, nurses, dieticians, and social workers involved in their care. With proper care, the unavoidable decline in renal function can be slowed, and these patients can achieve normal growth and development. When their kidneys do fail and they approach end-stage kidney disease, they should receive kidney transplants, if possible, without ever being required to undergo dialysis.

Welcome New Housestaff and Faculty!

Nafisa Ahmed
Texas Tech University School of Medicine

Margot Bell Eason
LSUHSC-Shreveport, LA

Deepa Gali, M/P
Bidea's Shri B.M. Patil Medical College

Marie Manning Harper
LSUHSC-Shreveport, LA

Michael Henry
Universidad Autonoma de Guadalajara, Mexico

Jennifer Kelley, M/P
LSUHSC-Shreveport, LA

Mamatha Mandava
Kamineni Institute Of Medical Sciences, India

Lauren Milner
LSUHSC-Shreveport, LA

Yogini Prajapati
St. Matthew's University School of Medicine

Suman Shekar, M/P
Sree Siddhartha Medical College, India

Pallavi Shirsat, M/P
Lokmanya Tilak Municipal Medical College

Tracy Wallace
LSUHSC-Shreveport, LA

Dr. Dalibor Kurepa
Asst. Professor
Neonatology

Dr. Rohit Gupta
Instructor
Pediatrics

Dr. Sabeen Y. Habib
Asst. Professor
Pediatric Nephrology

Dr. Venkat Kakkilaya
Asst. Professor
Neonatology

Dr. Andrew Love
Asst. Professor
Pediatrics

Dr. Phillip Madonia
Instructor
Med/Peds

Dr. Lewis Reisman
Professor
Pediatric Nephrology

Chairman's Corner

This is the normal time for change for academic programs, and it is a big one for us this year. We have said goodbye to 12 very successful graduating pediatric and medicine/pediatric residents. Some are being welcomed into the primary care practice community and others are continuing their education in a variety of subspecialty fellowship training programs. An excellent group of new interns joined our training program in July and two new fellows began their training in Allergy/Immunology. A number of new faculty are here or will be joining us shortly. Already here are new faculty in the areas of general pediatrics, medicine/pediatrics, neonatology and pediatric nephrology.

Each will enhance our missions of patient care and teaching and many will contribute to our research capabilities. We are especially pleased to be able to announce the return of a full service pediatric renal program which is highlighted this month in our "Subspecialty Spotlight" section.

I hope you all have enjoyed the summer,
JAB



Upcoming Events

Pediatric Potpourri XIX
September 10-12, 2010
Hilton Lafayette, Lafayette, LA

National Car Seat Check Saturday
September 25, 2010
Safety Town, Shreveport, LA
9 am—12 pm

Practical Pediatrics
With a Special Morning Program in
Pediatric Nephrology
December 4, 2010
LSU Health Sciences Center Shreveport
Dean's Conference Center

To register: Call the CME office
(318) 675-4629

Southern Regional Meetings
February 17-19, 2011
Intercontinental Hotel
New Orleans, LA

To contact any of the doctors referred to in this issue, or to correspond with a Children's Hospital of LSUHSC-S specialty pediatrician, visit our website www.sh.lsuhs.edu/pediatrics or call:

Referral or Consultation (318) 675-6378 or 1-800-337-DOCS
24 Hour Direct Physician (877) 795-1288

NICU (318) 675-7240
Inpatient/Ward Pager (877) 962-4831

PICU (318) 675-7221
Toll Free (800) 897-5519

Make a gift in support of the Children's Hospital of LSUHSC-S.... visit www.lsufoundation.org or call the LSU Health Sciences Foundation at **1-866-734-9980**



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