670D TEACHING PEDIATRIC LIFE SUPPORT: A DEMONSTRATION. Alan M. Hirschman, David C. Squillacote, Richard E. Kravath, (Spon. by L. Finberg), Albert Einstein Coll. Med.,

Depts. of Peds. & Emerg. Serv., Montefiore Hosp. Med. Ctr., N.Y. Training in Basic and Advanced Life Support (BLS and ALS) is now mandated by the Joint Commission on Accreditation of Hospitals for hospital physicians. However, the standard courses contain little information relevant to pediatric patients. A module was developed for teaching pediatric life support (PLS) stressing points unique to the age group and pediatric training. A lecture and slide presentation of anatomy and physiology underscored differences in resuscitation techniques from those used in adults. A method was presented for organization of personnel and assignment of tasks as a function of the number and capabilities of available resuscitators. Emergency drugs were discussed in relation to common etiologies of cardiorespiratory arrests in children. Demonstration stations used mannikins, actual equipment and radiographs to show airway adjuncts, intubation, central line placement, and resuscitation techniques in neonates, infants and children. Specific equipment requirements and problems due to variable patient size were illustrated. A mock cardiorespiratory arrest required participants to synthesize theory and practice, and served as an evaluation process. The PLS module was perceived as an excellent learning experience. The mock arrest was seen as a valuable "rehearsal" for the real event. Performance at subsequent resuscitations was felt to be more organized and effective. We believe this PLS module provides a needed addition to physician training and continuing medical education and recommend its inclusion in standard BLS and ALS courses.

670E VALPROATE MAY DELAY BRAIN MATURATION AND PRODUCES HEPATIC DYSFUNCTION IN INFANT MICE. Jean Holowach Thurston, Richard E. Hauhart, Demoy W. Schulz, Elise F. Naccarato, W. Edwin Dodson, James E. Carroll. Washington Univ. Sch. of Med., St. Louis Children's Hospital, Dept. of Pediat., St. Louis.

Normal nursing 2 to 4 d-old mice received 100 or 200 mg/kg of valproate (VAL) s.c. once daily for 5 d. At 100 mg/kg there was no effect on body weight (wt). At 200 mg/kg, body wt was reduced 20% ($P=0.001$), brain wt, 20% ($P<0.001$) and brain $[K^+]$, 3% ($P=0.009$); brain $[Na^+]$ tended to rise. Both doses increased brain glycogen (31%), glucose (27%), glucose-6-P (15%), fructose-6-P (21%) and decreased fructose-di-P (35%), pyruvate (14%), citrate (15%), α -ketoglutarate (14%) and malate (18%), suggesting a decreased metabolic flux through the glycolytic pathway and Krebs citric acid cycle. Together with the decrease in P-creatine (7%) the findings suggest reduced cerebral metabolic rate (CMR). Brain aspartate was reduced 12% at 100 mg/kg VAL ($P<0.001$) and 25% at 200 mg/kg ($P=0.002$). At 200 mg/kg VAL, brain glutamate fell 14% ($P=0.006$) while taurine increased 13% ($P=0.039$). Both doses tended to decrease brain GABA and increase brain glycine. Both VAL doses decreased plasma β -hydroxybutyrate (β -OHB) concentration 60% ($P<0.001$); plasma fatty acid levels were normal. At 200 mg/kg VAL the liver glycogen content was reduced 73% ($P<0.001$).

VAL-induced decreased brain wt and $[K^+]$, the apparent reduction in CMR, and the direction of the amino acid changes are most compatible with delayed brain maturation. Critical reductions in plasma β -OHB and liver glycogen levels may relate to VAL-associated hepatic-deaths in infants and children.

670F THE USE OF COMMUNITY LABORATORIES IN PRIMARY CARE PEDIATRIC RESIDENCY TRAINING - Steven Kairys, M.D. Spon. by Saul Blatman, M.D. Dartmouth Medical School, Department of Maternal and Child Health, Hanover, N.H.

"Community Laboratories", a longitudinal three year outreach rotation for Pediatric Residents was instituted in 1978 to broaden the Resident's primary care training. Rural Pediatric practices within a 30 mile radius of the Medical Center were selected on the basis of community interest and teaching potential. Residents, for three years, spend part of each week in the same community. The Resident develops a panel of families that (s)he follows for the three years, and becomes actively involved in the community's health services, including school health, child abuse, public health and health planning. Medical Center faculty are responsible for developing curricula in each area of community health and aid in their local adaptation. The Pediatric practices are members of a Cooperative Data Project, and data on diagnosis frequency and patient management are fed back to the Residents for self-evaluation. The community Pediatricians attend group sessions to share experiences, critique the program, and receive instruction in teaching techniques, evaluation and medicine updates. Community health personnel also meet with the Residency Faculty to review the program and take part in inservice training. In the first year of the community rotation, 40% of all Resident outpatient encounters - 1700 visits - occurred at the community sites. The community laboratories offer a dynamic method for Residents to develop the skills necessary to manage the "new morbidities" of Pediatric practice in a setting that closely simulates the realities of rural Primary Pediatric Care.

670G EVALUATION OF CHILDREN WITH FUNCTIONAL MURMURS BY ECHOCARDIOGRAPHY. Rae-Elle Webb Kavey, Henry M. Sondheimer, Marie S. Blackman. Division of Pediatric Cardiology-SUNY-Upstate Medical Center, Syracuse, N.Y. Sponsored by Frank A. Oski.

The evaluation of children with heart murmurs and normal hearts remains an important function of the pediatrician and pediatric cardiologist. Increasing use of echocardiography has made reliance on a pure auscultatory diagnosis less common. To assess the usefulness of single crystal echocardiography in patients with a clinical diagnosis of functional murmur, 25 consecutive children in whom this diagnosis was made on a first visit to Pediatric Cardiology Clinic arbitrarily had an echocardiogram performed. In each patient, the diagnosis of functional murmur had been made on auscultation by 2 cardiologists. Chest x-rays and ECG's were normal. Patients' ages ranged from 2-14 years (mean = 6.7 years). In all 25 patients intracardiac structures and relationships were recorded normally echocardiographically. In 23/25 patients, echocardiographic dimensions were within the range of normal for this lab; in 1 patient right ventricular diastolic dimension was mildly increased and in another, left ventricular diastolic dimension was mildly increased. In no patient was evidence of significant structural heart disease obtained. The study suggests that in children in whom a careful auscultatory diagnosis of functional murmur has been made, single crystal echocardiography adds no useful information.

670H ELECTROCARDIOGRAPHIC TELEMONITORING FOR HIGH RISK INFANTS-A NEW METHOD FOR PREVENTION OF SUDDEN INFANT DEATH

Ehud Krongrad, College of Physicians and Surgeons, Columbia University, N.Y.C., N.Y. 10032

No single etiology has been proven to cause sudden infant death (SID) syndrome. To prevent SID different therapeutic as well as monitoring methods have been attempted. Eleven high risk infants with near miss episodes were placed on an electrocardiographic (ECG) monitoring device using an acoustic coupler for telephone transmission of ECG's. The ECG receiving station was staffed by physicians 24 hours daily and available upon call to accept and analyze ECG's and to provide medical and technical advice. The infants age when monitoring began was 2 weeks (w) to 28w (median-14w) and lasted from 7 days to 29 days (median-10 days). True alarms ($N=49$) were recorded in 8 patients (pts) in the first month of monitoring, in 1 pt in the second month and in no pt after 60 days of monitoring. In 2 infants normal ECG's were recorded when the mothers applied vigorous resuscitation for a "near miss episode". An average of 3.2/day false alarms were recorded during the first month of monitoring and 2.86/day for the second month. All pts are currently alive and well. It is proposed that ECG monitoring is biologically superior to apnea monitoring since cardiac monitoring is applied to the final common pathway of distress in absence of a proven single etiology for SIDS. Further, because ECG monitoring is technically more advanced, it allows for telemonitoring and transfer of pt information for immediate application of professional advice.

670I HOMEOSTATIC PATTERNS OF FAMILY BEHAVIOR IN THE PEDIATRIC CLINIC. Samuel LeBaron and Lonnie Zeltzer.

(spon. by Philip A. Brunell). The University of Tex. Health Science Center, Department of Pediatrics, San Antonio, Tex. Clinic staff (CS) working with pediatric patients (pts) benefit from knowing the relationship between pt and parent (par) behaviors in the clinic. Also, CS need to know if they share similar perceptions of family behaviors, and if their perceptions are affected by age of pt. In our study of adolescents with cancer, a pt/par questionnaire was given to CS and research team (RT) to assess patterns of pt/par behaviors seen in clinic. The data were analyzed to assess inter-rater reliability (IRR) and influence of pt's age on IRR. Par and pt anxieties were unrelated, but pt anxieties were related to overprotective and controlling par behavior (factor analysis). Pt maturity was related to perceptions of pars as anxious and overwhelmed by pt's illness. IRR was .78 for CS and .84 for RT ($p<.0001$). For CS, IRR was .71 for 10-13 yr. olds and .82 for 14-18 yr. olds ($p<.0001$); these IRR's differed at $p<.02$ ($Z=2.25$). RT's IRR was .81 for younger and .86 for older pts ($p<.001$); these IRR's did not differ significantly. The difference between CS and RT IRR's of younger pts approached significance ($p=.06$; $Z=1.92$). The data show 2 homeostatic patterns of pt/par behavior: (1) Pt and par anxieties are unrelated; rather, pars of anxious pts maintain control and are seen by staff as overprotective. (2) Pars of pts seen as mature show more anxiety and appear overwhelmed. It seems as if pts and pars alternately "hold the fort." Although clinic staff found some difficulty in assessing younger pts, such strong agreement among inexperienced raters is striking.