

- 656** **FACULTY DEVELOPMENT AND EVALUATION.** Robert L. Brent and Jeffrey Weiss. Thomas Jefferson University, Department of Pediatrics, Phila., PA  
 There have been changes in the manner in which academic institutions appoint and evaluate faculty. The concept of tenure has been radically altered and a higher percentage of faculty are being appointed to positions in which tenure is not attainable. In these circumstances, it is important to provide younger faculty with the opportunity to plan their academic career and to make certain that older faculty do not become non-productive. We have developed a faculty development form that is educational and constructive. It divides each academic function (teaching, research, clinical, administrative, extramural and interpersonal) into seven levels of performance. No level is in itself inappropriate and the profile can be plotted for 10-year intervals, so that changes in the profile are apparent. Each faculty member plans his next year's goals and objectives and the supervisor and the faculty member determine whether the new goals will change the faculty member's profile. We have two years of data on the number of publications, abstracts and research applications during the program compared to previous years. That data indicate that this system stimulates academic growth and we believe it allows some faculty to conclude that academic medicine may not be an appropriate career choice early or even late in their careers. Most importantly, it forces the supervisor and faculty member to establish a written plan for each academic year. (Supported by NIH)

- 657** **COMPARISON OF REFLEX MODIFICATION AUDIOMETRY AND BRAINSTEM EVOKED RESPONSE AUDIOMETRY IN HIGH-RISK PREMATURE INFANTS.** Michelle E. Cohen, Endla K. Anday, Nancy E. Kelley and Howard S. Hoffman. (Spon: Maria Delivoria-Papadopoulos). Bryn Mawr Coll, Dept of Psych, and Univ of PA, Sch of Med, Dept of Ped, Phila, PA

Reflex modification audiometry (RMA) is an objective technique for assessing hearing acuity by determining whether the reflexive eyeblink, elicited by a tap to the glabella, is augmented by an acoustic stimulus presented simultaneously with the glabellar tap. Sixteen infants who were at risk for hearing impairment were tested with both RMA and brainstem evoked response audiometry (ABR). These infants had either intraventricular hemorrhage, meningitis, prolonged aminoglycoside therapy and/or were small for gestational age. The RMA procedure consisted of the elicitation of an eyeblink by a miniature solenoid with a teflon striker which could deliver a mild controlled tap to the glabella. The tap was presented either alone or simultaneously with a tone at 90 dB SPL. A photoreflexive densitometer attached to a TDH39 earphone provided an objective measure of eyeblink amplitude. The ABR was obtained through standard procedures using clicks at 60 dB HL. Eleven infants passed the brainstem procedure (Group 1: mean postconceptional age 38 wks) while 5 infants failed (Group 2: mean postconceptional age 34 wks). A comparison of the ABR with the reflex augmentation testing procedure showed a significant difference ( $p < 0.05$ ) between those infants who passed the ABR and showed augmentation (10/11 showed augmentation, 4/11 at  $p < 0.05$ ) and those who failed the ABR and showed no difference in their response to tap alone and tap with tone. These data suggest that reflex modification audiometry, which is inexpensive and requires little training and less time to administer and interpret, may be a promising tool for screening infants at risk for hearing loss.

- 658** **A SPREADSHEET PROGRAM FOR TEACHING PHARMACOKINETICS.** Edwing A. Contreras, Javier J. Bustamante, Joon M. Park. (Spons. by Surendra K. Varma). Texas Tech University Health Sciences Center, Department of Pediatrics, Lubbock, Texas.

The number of medications used in Pediatric and Neonatal Intensive Care Units continues to increase steadily, with a concomitant increase in the potential for drug interactions and toxicity. In order to provide more pharmacokinetic information to the medical staff, we developed a computer program using Lotus 1-2-3 on an IBM-PC employing well known pharmacokinetic equations for predicting individual patient parameters. The program has user-friendly menus that include on-line help screens making it easy to obtain the following information:

1. Calculate half-life, volume of distribution, ideal dose and ideal interval in any given drug.
2. Given a desired interval, desired peak and desired trough, it will calculate a recommended dose.
3. Visualize graphically the serum level versus time curve of the "current" and "proposed" regimen, or superimpose both.
4. Do the above when the peak and trough levels are obtained either during "steady-state" or after an "initial" dose.

This program works for any drug that has a first order elimination rate constant (aminoglycosides, theophylline, digitalis, phenobarbital, etc.), regardless of the patient's age and size, i.e., neonates, infants, children or adults.

It can be utilized as a learning tool by using simulated or actual patient data, or in a hospital unit as a way to monitor patient serum levels and potentially decrease unwanted toxicity.

- 659** **VIRAL AND CHLAMYDIAL ETIOLOGY OF ACUTE INFECTIONS OF THE LOWER RESPIRATORY TRACT IN COLOMBIAN PEDIATRIC PATIENTS.** J. Duque, R.M. Nuñez, C.W. Henríquez, A.L. Villegas, J.U. Niño, B. de González. (Sponsored by W.J. Rodríguez) Rafael Henao Toro Red Cross Children's Hospital of Caldas University, Manizales COL.

Acute (lower) respiratory tract infection (ARI) is an important cause of morbidity and mortality in children (chil) < 5 years of age, but the contribution of viral (V) and Chlamydia trachomatis (Ct) agents to serious ARI in Colombia was hitherto unknown. From 10/85 to 7/86, we studied 60 chil aged 1-60 mos. hospitalized with ARI. 77% had malnutrition. Diagnoses were: lobar pneumonia in 6 (10%) and bronchopneumonia (bronch) either with wheezing in 10 (17%) or without wheezing in 44 (73%). Tracheal secretions were aspirated, fixed and studied for V and Ct antigens by indirect immunofluorescence. Bacteria also were sought by conventional cultures. Twenty (33%) of 60 chil with ARI had V infection. Two other chil (3.3%) had Ct detected. RSV was detected in 75% of 20 with V infection. All with RSV were  $\leq$  36 mos, 60% had bronch without wheezing, 27% had bronch with wheezing, and 13% had lobar pneumonia. The others with V infection had bronch (2 parainfluenza 3, 1 influenza A, 1 adenovirus) or lobar pneumonia (1 parainfluenza 3). Eleven of 22 with V or Ct infection also had bacteria, 8 with *Staph aureus*. Of 51 chil  $\leq$  24 mos, 31.3% had V and 4% Ct infection. Rates of infection in these malnourished chil are similar to those in studies done on chil of the same age in other parts of the world, including the well developed countries.

- 660** **CORRELATION OF LEAD, EP AND IRON STATUS IN A MULTI-RACIAL POPULATION SURVEY.** John W. Graef, Katherine Halvorsen, Yona Amitai, and Margaret Pfitzer. Harvard Medical School, The Children's Hospital, the Division of Clinical Pharmacology and Toxicology, and the Developmental Evaluation Clinic, Boston, MA

Venous blood samples were obtained from 615 pre-school children (6 mos-6yrs) by door-to-door screening in three Massachusetts communities. Samples were assayed for lead by atomic absorption spectrophotometry, for erythrocyte protoporphyrin (EP) by hematofluorometry, for ferritin by radioimmunoassay and for hemoglobin, hematocrit and erythrocyte indices by Coulter counter. Correlation coefficients among lead, EP<sub>WB</sub>, EP<sub>RBC</sub>, ferritin, MCV and hemoglobin were calculated as follows: **Simple Correlation Coefficients** (n  $\geq$  566 Observations)

	MCV	Ferritin	Lead	Hgb	*p = .01
EP <sub>WB</sub>	-.320*	-.188*	.383*	-.273*	
EP <sub>RBC</sub>	-.399*	-.164*	.352*	-.384*	
MCV		.124*	-.221*	.375*	
Ferritin			-.083	.083	
Lead				-.097	

When lead and EP<sub>RBC</sub> are corrected for MCV, the partial correlation of lead and EP<sub>RBC</sub> is only .086 (NS). Similarly, correcting for ferritin or hemoglobin, the partial correlation of lead and EP<sub>RBC</sub> is 0.12 ( $p = .01$ ). We conclude that, after adjusting for iron status as indicated by ferritin, MCV or hemoglobin, there is a weak partial correlation between lead and EP<sub>RBC</sub> in the population studied. As the criteria for defining lead toxicity continue to be lowered, the value of EP as a lead screening test should be re-examined when considering children with lower lead levels.

- 661** **EXPLORATORY TYMPANOCENTESIS FOR THE DIAGNOSIS OF ACUTE OTITIS MEDIA WITH EFFUSION IN THE NEONATE: LIMITATIONS IN THE USE OF THE TYMPANOMETER UNDER SEVEN MONTHS OF AGE.** Virgil M. Howie, Mary L. Grabowski, John H. Ploussard, and Amanda Strickland. University of Texas Medical Branch, Department of Pediatrics, Galveston, Texas.

Sixty-five patients presenting to a general pediatric practice for either well baby care or acute illness in the first seven months of life over a two year period with signs of acutely discovered otitis media with effusion (AOME) were subjected to tympanometry and subsequent tympanocentesis. The overall sensitivity in detecting AOME of the practitioners on the 129 ears studied varied from 92 to 100 percent using pneumatic otoscopy. The specificity of the practitioners varied from 40 to 67% but there was marked variation in the diagnosis under one month of age. Tympanometry was 44% sensitive and 77% specific in the same patients with some special considerations in the infants head position seeming to account for some of the lack of sensitivity. The presenting author feels that there is a distinct advantage in obtaining a definitive diagnosis by using the technique of exploratory tympanocentesis in suspected AOME under one month of age.