676 THE IMPORTANCE OF INTRACRANIAL PRESSURE MONITORING IN THE NEAR-DROWNING CHILD. Eliezer Nussbaum, M.D., Stanley Galant, M.D., Miller Children's Hospital of Long Beach and the University of California, Irvine, CA

The survival in the patient who is comatous from near drowning is poor. The purpose of this study is to demonstrate the value of intracranial pressure monitoring. Intracranial Pressure (ICP) monitoring by the subarachnoid bolt and Cerebral Perfusion Pressure (CPP) served as major guidelines in the therapy of near drowning in children in coma Group I (G_1). G_1 consisted of 1 decorticate, 4 decerebrate and 10 flaccid children (C_1,C_2,C_3 respectively) from a total population of 25 victims. G_2 (3 patients) and G_3 (7 patients) included obtunded and fully awake patients respectively.

Mean arterial pH on arrival was 7.03 (G_1) and 6.99 (C_3), Mean ICP 23.75 mmHg (G_1) and 25.28 (C_3), and mean CPP 63.25 mmHG (G_1) and 64.14 (C_3).

All patients in G_2 and G_3 recovered completely. All patients in C_1 and C_2 survived and 1 patient (C_2) remained moderately brain damaged. In C_3 6 died but 4 recovered completely including normal EEG. Overall survival rate for all groups was 76%, complete recovery 72% and death 24%. In G_1 survival rate was 60% and complete recovery 53.3%.

Modes of therapy are discussed. We conclude that ICP and CPP monitoring should be mandatory in near drowning victims who are comatous. Therapy must focus on cerebral resuscitation. Utilizing this technique, our results in the comatous patients are clearly superior to those previously published.

677 THE SEASONAL INCIDENCE OF CHRONIC RECURRENT DIARRHEA AND ITS IMPLICATIONS FOR PATHOPHYSIOLOGY. A. Olson, R. Torres-Pinedo. University of Oklahoma College of Medicine, Oklahoma Children's Memorial Hospital, Department of Pediatrics, Oklahoma City.

The purpose of this study was to establish a possible role of acute gastroenteritis (AGE) in the pathogenesis of chronic recurrent diarrhea (CRD). We have reviewed 153 patients presenting over a period of 6 years with CRD. The median age of onset of CRD in our population was 3 months (range: B-30 mos). CRD was defined as a stool volume 3 times normal occurring at least weekly for a period longer than 2 months. The median duration in our population was 7 months (range: 2-36 mos). All patients with bacterial and parasitic infections and specific malabsorption syndrome were excluded. The number of admissions to our hospital for AGE was taken as an index of the disease in the community for each month of the 6 year period. We found a seasonal variation in the onset of CRD which had a close correlation with the incidence of AGE in the community ($P<.01$). Both incidences showed a consistent trough in late spring with a distinct peak in Aug-Sept and a secondary peak in Nov-Jan. Infants born in the months immediately prior to the peak of AGE in Aug-Sept had a higher incidence of CRD and a younger median age of onset than those born following the peak. There was a close correlation ($P<.001$) between the age of onset of CRD and the age of admission for AGE. The significant chronological, seasonal and age relationships between AGE and CRD suggests a pathogenetic role of enteric infection in chronic diarrhea of infancy.

● **678** PROFESSIONAL ROLE OF NURSE CLINICIANS IN AN INTENSIVE CARE NURSERY (ICN). Suezanne T. Orr, Jacob K. Felix, Daniel Levy, Ida Samet, and Evan Charney. Sinai Hospital, Departments of Pediatrics and Nursing, Baltimore, MD.

Specially trained nurses were given responsibility similar to that of PL-Is for care of ICN newborns. After three years in the role, this study assessed level of complexity of tasks performed by neonatal nurse clinicians (NNCs) and compared their functions to ICN staff nurses and pediatric houseofficers.

Each professional group (MD, RN and NNC) was observed for a total of 40 hours. Five-minute time blocks were assigned a level of A, B, or C based on professional complexity of tasks performed. (A=lowest, C=highest)

NNCs devoted 94% of their professional time to level C tasks compared to 90.2% for PL-Is and 31.9% for staff nurses. Time distribution was similar between NNCs and PL-Is except for (1) charting and clerical activities (36.3% NNCs and 19.8% PL-Is) and (2) conference time (3.3% NNCs and 12.5% PL-Is). MD and nurse evaluators were positive about the NNC performance, emphasizing their conscientiousness and excellent diagnostic and technical ability. They ranked superior to PL-Is in counseling, emergency care and knowing when to ask for assistance. Problems identified included lack of certification, demanding nature of work emotionally, and the lack of a niche in either medicine or nursing.

We conclude that this new role is practical and rewarding, though ongoing support and periodic relief from ICN duty is essential to its success.

● **679** SEROUS OTITIS MEDA: EVIDENCE FOR AN ALLERGIC MECHANISM. Howard Ort, Albin Leong, Richard O'Connor and Robert N. Hamburger. University of California, San Diego, Department of Pediatrics, La Jolla, California.

The importance of allergy in the pathogenesis of serous otitis media continues to be controversial. Our aim is to clarify the role of atopy in the development of serous otitis and to describe a technique for the further study of this relationship.

Nasal challenges were performed with both diluent and rye grass pollen extract in 43 children with allergic rhinitis. Nasal airway resistance was measured by anterior rhinomanometry and nearly simultaneous tympanometry was utilized to detect changes in middle ear pressure. Fifteen of the patients had significant changes in middle ear pressure of minus 35 mm H_2O or greater in one or both ears (mean=minus 60 mm). The control diluent challenges in the same group resulted in a mean change of plus 20 mm H_2O ($p<0.001$).

Significant obstructive increase (>50%) in nasal airway resistance was observed in 32 of 43 patients (74%). Negative shift in middle ear pressure was seen in 28 of these 32 patients (88%) as compared to only 2 of 11 patients (18%) with a nasal airway resistance increase of less than 50%. All 15 patients with significant middle ear pressure changes had a nasal airway resistance increase of >50%.

These results indicate that allergic rhinitis patients who react to nasal antigen challenge demonstrated concomitant significant changes in middle ear pressure. Persistent negative pressure in the middle ear can produce an effusion characteristic of serous otitis media. We interpret this data to indicate that allergic children have increased susceptibility to serous otitis media.

680 PREDICTION OF NEONATAL SEPSIS BASED ON "RISK" OR "CLINICAL" FACTORS. Alistair G.S. Philip, University of Vermont, Dept. of Pediatrics, Burlington.

During a study designed to evaluate several tests used to diagnose neonatal sepsis (Pediatrics, 1980, 65:1036), the reasons for investigation were also examined. Of 524 babies evaluated with blood cultures and laboratory tests in a 5-year period, 298 (57%) were males, 336(64%) were low birth weight and 296(56%) were evaluated shortly after birth. Sepsis was proved in 41 babies (8%).

Early evaluation was primarily based upon "risk factors" (e.g., prolonged rupture of membranes (PROM), maternal infection, premature labor without adequate explanation), and later evaluation was based upon "clinical factors" (e.g., lethargy, apnea, temperature instability). For the commonest reasons for evaluation, the predictive accuracy for sepsis usually increased when more than one reason was given. "Clinical" were more predictive than "risk" factors. In particular, with "PROM alone," there were no cases of proven sepsis among 64 babies, but with "PROM and other" 8/89(9%) had sepsis. Figures for premature labor, maternal infection, lethargy, temperature instability, apnea and cyanotic spells alone were respectively (with %) 2/72(3), 0/17(0), 2/15 (13), 1/8(13), 3/37(8), and 2/36(6). For each of these and "other" reasons the respective figures were 5/44(11), 4/48(8), 21/72(29), 3/25(12), 8/47(17), and 3/32(9).

Of 168 babies evaluated for a single "risk" factor, only 2 had proven sepsis. It should be possible to decrease antibiotic use under these circumstances, and diagnostic tests may allow this to be done with some confidence.

● **681** EVALUATION OF RESIDENCY TRAINING IN BEHAVIORAL PEDIATRICS Sheridan Phillips, Stanford B. Friedman, Jean C. Smith, & Marianne Felice. Univ. Maryland Sch. Med., Depts. Ped.& Psychiat, Baltimore

The Dept. of Pediatrics established a program in Behavioral Pediatrics, including a two-month required rotation during both the PL-1 and PL-2 years. The impact of this program on first-year residents was evaluated by administering a questionnaire, assessing attitudes with regard to 15 clinical "entities". These included primarily behavioral disorders (e.g., conversion reaction), primarily physical disorders (e.g., pharyngitis) and "mixed" disorders (e.g., terminal illness). Each entity was rated at four points in time: beginning of the year, start of the behavioral rotation, end of the rotation, and end of the year. Data were collected from 37 residents, from 1977 to 1980.

For behavioral disorders emphasized in the rotation, residents demonstrated a statistically significant increase in their self-reported competence with regard to diagnosis, management, advising parents, and knowledge of resources. Further, virtually all change occurred during the 2-month rotation. This was also the case for "mixed" disorders. In contrast, change in perceived competence for physical disorders was not specific to the rotation but, rather, increased evenly over the entire year. Ratings of faculty and housestaff interest remained constant across testing points, and residents' "desire to learn more" and prediction of "future relevance" showed a slight decrease over time (for all types of disorders). These data demonstrate that changes in residents' perceived competence are directly related to their rotation experience, and suggest that behavioral issues can be introduced successfully during the first year of residency training.