

**540** MODERATE ALCOHOL CONSUMPTION DURING PREGNANCY REDUCES BIRTH WEIGHT. James L. Mills, Barry I. Graubard, Ernest E. Harley, Heinz W. Berendes. (Spon. by Sumner J. Yaffe). NIH, NICHD, Bethesda.

The effect of maternal alcohol consumption in the first trimester on birth weight was studied prospectively in 34,660 pregnancies from the Walnut Creek Birth Defects Study (NICHD). Complete medical and demographic information was available in 28,698 live births. Drinking showed a dose-response effect on birth weight; mean birth weight decreased as daily alcohol consumption increased. When adjustment was made for confounding factors (smoking, parity, age, etc.), multiple linear regression revealed an estimated decrease in birth weight of 16 grams for women consuming <1 drink, 86 grams for 1-2 drinks, 169 grams for 3-5 drinks and 127 grams for 6 or more drinks daily compared to non-drinkers ( $R^2=.26$ ,  $p<.0001$ ). When birth weight below the 10th percentile for gestational age, sex, and race was examined, rates were 6.0%, 6.8%, 11.5%, 16.8%, and 17.7% in non-drinkers, and those drinking <1, 1-2, 3-5, and 6 or more drinks per day, respectively. The trend was significant ( $p<.0001$ ). This relationship remained significant ( $p<.005$ ) after multiple logistic regression was used to adjust for confounding factors. Drinkers did not deliver significantly earlier than non-drinkers. Because of the large number of subjects, the study was able to demonstrate a statistically significant effect of alcohol on birth weight independent of other confounding factors. Women should be advised that alcohol is associated with intrauterine growth retardation, but that the effect in light drinkers is clinically small.

**541** BIRTHWEIGHT/GESTATIONAL AGE PROFILES FOR METROPOLITAN PHILADELPHIA. Chari S. Otis, Vinod K. Bhutani, and Ronald J. Bolognese, (Spon. by Lois Johnson) Univ. of Pa. Sch. of Med, Pennsylvania Hospital, Dept. of OB/GYN & Pediatrics.

Birthweight (BW) as a function of gestational age (GA) was evaluated for a broad spectrum of both urban and suburban population, in Philadelphia and the Delaware Valley, who delivered at Penna. Hosp. A total of 13467 live-births occurred at this institution during the years 1977 to 1981. The racial spectrum was 62% Black (49.7% females); 30% White (47.8% females); and 8% Hispanics, Orientals, Asians, etc. GA was calculated on the mother's dates, obstetrical evaluation and then, the clinical estimation of GA. The data was analyzed by a UNIVAC computer programmed to calculate the percentiles of BW for each week of GA (26 to 42 weeks) for the total population and ethnic subcategories. BW curves were developed for all data. Total population BW exhibited different values of central tendency and were statistically different from known curves (Fig 1). Statistically different curves were also developed on the basis of race and sex. Differences in geographic location, altitude and composition of ethnic populations probably account for these observations. These data emphasize the need to utilize local regional standards classification of neonates according to their GA, and thus predict the risk of their morbidity and mortality.

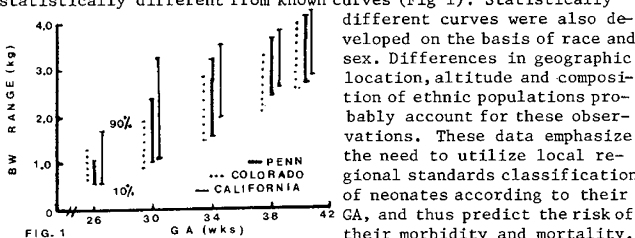


FIG. 1

**542** ADENOVIRUS RESPIRATORY INFECTIONS AMONG CHILDREN IN DAY CARE D.L. Pacini, P.W. Stewart, A.M. Collier, F.W. Henderson, University of North Carolina School of Medicine, Department of Pediatrics, Chapel Hill

Adenoviruses (AV) produce 5 to 10 percent of respiratory diseases in young children, but little information is available regarding their role in day care centers. AV infections among 123 children attending a research day care center were analyzed from data collected prospectively from 1967 through 1981. Earliest isolation of a serotype was designated as a "first" isolate, and later homotypic isolates were termed "subsequent". Day care center AV exposure correlated with acquisition of infection. Types 1, 2, and 5 were recovered during 76, 56, and 36 of the 180 study months, respectively, and by age 5 years, seroconversion to types 1, 2, and 5 occurred in 89, 78, and 59 percent of children. Through age 2 years, children were exposed to  $3.4 \pm 0.9$  (mean  $\pm$  S.D.) different serotypes and became infected with  $2.1 \pm 0.8$  types. First isolate attack rates were highest in 6 to 12 month-olds (1.4 serotypes/child-year) and lowest among children over 2 years of age (0.06 serotypes/ch-yr). Illness was associated with 83 percent of first isolates and was usually febrile and mild. Acute otitis media occurred in 37 percent of illnesses over all ages and in 49 percent of infants. Subsequent isolates were recovered less frequently than first isolates, were less often associated with illness (55%,  $p<.005$ ), and illnesses were accompanied by reduced rates of fever (19%,  $p=0.0197$ ) and acute otitis media (10%,  $p=0.0055$ ). This study showed infants and toddlers in a day care center to be common hosts for multiple AV infections, often associated with acute otitis media.

**543** ETHNIC TRENDS IN NEONATAL MORTALITY: A LOOK AT HISPANIC POPULATION. Raju T. Vidyasagar D, Winegar A, Miller S. Department of Pediatrics and Center for Health Services Research, University of Illinois Hospital, Chicago.

To examine ethnic trends in neonatal mortality rates (NMR) and to find reasons for the trends, we analyzed several maternal and infant variables (based on our perinatal data monitoring system Winegar, Am. J. Ob. Gyn, 1983) in 4659 Hispanic, 6350 black and 12679 white mothers and their children in our network. Epidemiological standardization to account for differences in birthweight distribution (B.Wt. Dist) and weight-specific (Wt. Sp.) death rates were applied to evaluate their influence on outcome trends. (Table. Late PCN= prenatal care after 32 weeks of pregnancy).

| Age 19 yrs. | Smoking | Late Dia- | <1500 gr. | <2500 gr | NMR  |
|-------------|---------|-----------|-----------|----------|------|
| *P<0.001    |         |           |           |          |      |
| Hispanic    | 14%*    | 12%*      | 8%*       | 3.1%*    | 0.84 |
| Black       | 26%*    | 34%*      | 6%*       | 2%       | 2.4* |
| White       | 6%*     | 26%*      | 1.2%      | 1%       | 7%   |

Although Hispanic NMR was better than blacks, it was entirely due to a better B.Wt. Dist. If Hispanics did have black B.Wt. Dist. their NMR would have been worse than the observed black rate (14.6 Vs 11.9). If Hispanics did have Wt. Sp. death rate as either whites or blacks of our network, their NMR should have been 5.16 and 4.52, which are 17% and 33% better than the observed NMR of 6.05. These trends suggest that although maternal factors and crude NMR seem to be better in Hispanics, their outcome is not as good as it should have been, considering their better B. Wt. Distribution. Late entry into prenatal care and high incidence of diabetes may be in part, responsible for these trends.

**544** RELIABILITY OF SEROLOGY IN THE DIAGNOSIS OF INFLUENZA INFECTION IN INFANTS UNDER 6 MONTHS. Peter D. Reuman, Elia M. Ayoub, and Parker A. Small, University of Florida College of Medicine, Gainesville 32610.

Thirty-seven infants delivered between 10/78-12/78 were followed throughout the 1/79-3/79 influenza A Brazil (H1N1) epidemic. At delivery cord and maternal blood was collected. Mother-infant pairs were monitored for respiratory illness. Nasal wash samples obtained from 3 mothers, 1 neonate and 1 sibling at the time of acute illness were positive for A Brazil (H1N1). Acute and convalescent sera were drawn from each pair, and again at the termination of the study. The sera were analyzed by ELISA for H1 hemagglutinin specific IgG antibody.

Twenty-one mothers were seronegative and 16 were seropositive for influenza antibody at the time of delivery. During follow-up, 15 infants of the seronegative mothers and 8 infants of the seropositive mothers had symptoms of influenza illness. Seven infants of the seronegative mothers and only one infant of the seropositive mothers had a rise in influenza titer ( $P<.05$ ). Serologic studies on the symptomatic infants showed that 6 of the 15 infants of seronegative mothers had a rise in influenza antibody, while none of the 8 infants of seropositive mothers had a rise in antibody ( $P<.05$ ). Of interest was the finding that one child of a seropositive mother shed virus and was symptomatic, but showed no rise in antibody titer.

These data are consistent with observations derived from animal studies that passive antibody suppresses seroconversion, and suggest that influenza antibody titers on infants younger than 6 months do not correlate with viral infection.

**545** AN OUTBREAK OF HEMOLYTIC-UREMIC SYNDROME IN SACRAMENTO, CALIFORNIA. Martha F. Rogers, Lawrence Budnick, Ian Kirson, Eugene Hurwitz, Milford Hatch, Joy Wells, Herta Wulff, George Rutherford, Lawrence Schonberger. (Spon. by Godfrey P Oakley) Centers for Disease Control, Atlanta, GA. and University of California, Davis

Between July and November 1982, 14 cases of hemolytic-uremic syndrome (HUS) occurred in the Sacramento, California, metropolitan area. In the 42-month period prior to July 1982, only 4 cases could be identified by a retrospective review of discharge diagnoses in Sacramento area hospitals. Nine patients lived within a 7.5-mile radius in northeast Sacramento. Ten patients were female, 12 were white, and 13 were children (mean age 3.6 years). Thirteen of the 14 patients were hospitalized, seven required peritoneal dialysis, and one died. Twelve of the 13 survivors had diarrhea prior to hospitalization. A case-control study, involving 11 cases and 22 controls matched for age, sex, race, and primary-care physician, did not reveal any significant differences in exposure to a variety of possible risk factors including restaurants, specific foods, and water supply. Although HUS has occurred in association with enteroviruses, Salmonella, Campylobacter, Yersinia, and Shigella, we were unable to isolate any of these organisms from the stool specimens of 5 patients during the acute illness. In addition, a recent report has suggested that Vero-toxin producing E. coli may be associated with HUS; we were also unable to isolate these organisms. Examination of stools for presence of the toxin and serum for presence of antibody to the toxin are pending.