

† **601** STATE REPORTING OF LIVE NEWBORNS WEIGHING LESS THAN 500 GRAMS AT BIRTH. Ann L. Wilson, Lawrence J. Fenton, Dennis C. Stevens, James R. Thomas, David P. Munson, Lawrence R. Wellman, University of South Dakota School of Medicine, Department of Pediatrics, Sioux Falls.

In 1981 there was large variation in state reported incidence of live births of newborns weighing less than 500 grams at birth (.3 to 2.4 per 1,000 live births). The states with the lowest neonatal mortality rate (NMR) have the lowest incidence of birth weights less than 500 grams ($\rho = .70$). Assuming that mortality for this weight category is 100%, there is marked variation (5 to 24%) in the contribution of this weight cohort to a state's total NMR. Major deficiencies in reporting may exist. For example, Alaska, Arizona and North Dakota report no Native American live births with weights less than 500 grams. Reporting may also depend on the definition of live birth. The American Academy of Pediatrics and American College of Obstetricians and Gynecologists Guidelines for Perinatal Care uses the World Health Organization (WHO) definition of live birth as a baby with signs of life "irrespective of duration of pregnancy". Standard obstetric and pediatric textbooks offer guidance on this issue varying from adherence to the WHO definition to describing a live birth as greater than 500 grams. Thirty-six states officially use the WHO definition of live birth and nine states have definitions without gestational criteria. Four states have no definition of live birth including Vermont which has the nation's lowest NMR. There is evidence to suggest inconsistency in reporting the births of previsible newborns which potentially affects national neonatal mortality statistics.

† **602** THE EFFECT OF PRENATAL CARE UPON BIRTH WEIGHT-SPECIFIC OUTCOME. Paul H. Wise. (Spon. by Julius B. Richmond). Harvard University, Division of Health Policy Research and Education, Boston.

It is generally accepted that variations in birth weight-specific mortality rates (BWSMR) are closely related to the nature and quality of medical care provided the neonate once born. However, the effect of prenatal care on BWSMR has not been well explored. We studied linked birth/neonatal death vital statistics files for the City of Boston for the years 1975-79. Logistic models were used to assess the influence of prenatal care adjusting for race, gestational age, maternal age, education, and family income.

For the 329 deaths and 68,842 births analyzed, prenatal care was significantly related to overall neonatal survival ($p < .001$). However, its effect upon BWSMR was not uniformly significant:

	Odds Ratios Assessing the Effect of Prenatal Care		
	<1500g	1500-2500g	>2500g
Adequate	1.0	1.0	1.0
Inadequate	1.3	1.1	1.5*
None	1.2	1.4	2.7*

* $p < .01$

The data suggest that prenatal care does not greatly influence BWSMR at low birth weights. However, the adequacy of prenatal care services appears to strongly affect survival at birth weights above 2500g. Alterations in access to prenatal care could therefore influence both the distribution of low birth weight (LBW) births and the BWSMR of non-LBW neonates.

603 RURAL VS. URBAN EPIDEMIOLOGY OF PEDIATRIC INSECTICIDE INTOXICATIONS. Robert C. Woody, Charles M. Ginsburg. Arkansas Children's Hospital, Little Rock, and Children's Medical Center, Dallas, Dept. of Peds.

A paucity of data is available on epidemiologic and clinical characteristics of organophosphate (OP) and carbamate (C) toxicity in children. To determine if epidemiologic factors influence the clinical course of these disorders, we compared the exposure and hospital course of 25 children from a largely rural population (ACH) to 25 children from an urban area (CMC). Patients ranged in age from 1 mo to 11 yrs (mean age, 31 mos); 26 (52%) were male. Thirty-six (72%) of intoxications occurred in the spring and summer. OP and C-containing products found in the home were the most common substances causing toxicity in both groups. Although children living in rural areas were more commonly intoxicated as a result of agricultural spraying than urban children, accidental ingestion of OP-containing products by infants (43%) was the most common route in both groups. Passive exposure following home and agricultural spraying occurred in 24% and 14% of patients, respectively. Twenty-four (48%) of the agents were "over the counter" home insecticides; agricultural-use insecticides were incriminated in 22%. The initial clinical signs and symptoms and outcome did not relate to the route of exposure or substance ingested. Urban children had a significantly larger incidence of coma ($P = .001$) and seizures ($P = .001$) at the time of hospital admission than did rural. The duration of hospitalization and the type and incidence of complications did not differ between the two groups.

604 ROTAVIRUS: A DISEASE FOR ALL SEASONS IN ARKANSAS. Terry Yamauchi, Rebecca Clarke, Sherri Furr, Univ. Ark. Med. Sci. and Ark. Child. Hosp., Department of Pediatrics, Little Rock, Arkansas.

Rotavirus-associated gastroenteritis has been described as a winter disease of infants. Previous studies from our institution demonstrated occurrence of rotavirus disease during summer months involving adults as well as infants. The purpose of this study was to document the incidence of rotavirus infection by month of the year. Rotazyme, a rapid diagnostic test for the qualitative enzyme immunoassay detection of rotavirus antigen was utilized. Laboratory reports were reviewed over a 12 month period. Rotavirus-positive fecal specimens were reported during every month of the year except April. Total numbers of rotazyme-positive patients were highest during January (14), and February (14). However, total fecal specimens analyzed were increased during those same months. During the months of May, June and July the ratio of rotavirus-positive stools to total numbers of submitted fecal specimens was greater. Carrier states were not considered in this study and only symptomatic infants had fecal analysis. In summary: 1) rotavirus-positive fecal samples were recovered from symptomatic infants in every month of the year except April; 2) highest numbers of rotavirus positive specimens were found during January and February; 3) May, June and July had the higher ratios of rotavirus-positive stools to total numbers of fecal specimens submitted; 4) rotavirus gastroenteritis is a year round disease in Arkansas and may be a more frequent cause of gastroenteritis during the warmer months.

605 EFFECT OF RIFAMPIN ON NASOPHARYNGEAL FLORA FOLLOWING PROPHYLAXIS FOR *H. INFLUENZAE* CARRIAGE. Ram Yogev and Kathy Kabat. Dept. of Pediatrics, Northwestern University Medical School, Children's Memorial Hosp., Chicago.

Rifampin (Rf) is currently recommended as prophylaxis for household and day-care center contacts of patients with *H. influenzae* invasive diseases. Rapid development of bacterial resistance (R) to this drug is well-documented. Because Rf plays an important role in treatment of other conditions such as staphylococcal infections, streptococcal carriage, and TB, we investigated the effect of Rf 20 mg/kg once a day for 4 days on the nasopharyngeal (NP) flora of 17 children. NP swabs were obtained before Rf prophylaxis and 48 hrs post therapy. As shown in the Table, the vast majority of the isolates recovered before Rf treatment were sensitive (S) to Rf, while the large majority isolated following Rf prophylaxis were Rf resistant ($MIC \geq 5 \mu g/ml$).

Bacteria	Before Rf		After Rf	
	S	R	S	R
<i>H. influenzae</i>	7	0	0	0
<i>H. influenzae</i>	0	0	0	2
<i>S. aureus</i>	5	0	1	1
<i>S. pneumoniae</i>	6	0	1	0
<i>B. catarrhalis</i>	9	1	1	6
Coagulase \ominus Staphylococci	6	1	0	7
<i>Streptococcus viridans</i>	6	1	0	15
<i>Neisseria</i> species	4	0	2	7
Total	43	3	5	38

This rapid development of Rf resistance in our population suggests the possible need to re-evaluate current prophylaxis recommendations either to limit the treated population or to add another antibiotic in order to prevent emergence of R strains.

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606 LACK OF CORRELATION BETWEEN SERUM VITAMIN E AND TOTAL LIPID LEVELS IN PRETERM INFANTS. S. Abbasi, L. Johnson, J. Gerdes, C. Dalin, M. Grous, C. Otis. Univ. of Pa. Sch. of Med., Dept. of Peds., Pennsylvania Hosp., Philadelphia.

In adults and children there is a significant correlation between serum concentration of vitamin E (E) and total lipid (TL). Therefore use of the serum ratio of E to TL (E/TL) as a measure of E nutrition, rather than E alone, has been recommended. This ratio may not be useful in infants because of the higher proportion of polyunsaturated fats in their diets. In order to evaluate this relationship in neonates, 70 infants $\bar{X}BW 2085gm \pm 502 SD$, $\bar{X}GA 34.8wks \pm 2.1 SD$ were studied. Serum E and TL were measured during the following time periods: (I) within a few hours of birth; (II) 1 week of age, NPO, on hyperalimentation (HAL) and Intralipid (IL); (III) after 1-2 weeks of combined enteral feeds. HAL, IL; (IV) 1-2 weeks after full enteral feeds.

Period	n	$\bar{X}E (mg/dl) \pm SD$	$\bar{X}TL (mg/dl) \pm SD$	E/TL
I	70	0.6 \pm 0.2	346 \pm 112	1.75
II	50	0.7 \pm 0.4	388 \pm 158	2.19
III	34	1.2 \pm 0.6	533 \pm 166	2.34
IV	34	1.8 \pm 1.3	432 \pm 137	4.34

Multiple measurements within each group showed a significant correlation between E and TL ($r = .43$, $p < .01$) only in period I and if all babies were considered. The r value however was only 0.43, which reflects a relatively poor correlation. After exogenous nutrition was started (periods II-IV), there was no correlation between E and TL ($r = -.02$ -.34) in any birthweight group. Serial measurements of serum vitamin E levels appear to be the only practical means of monitoring E nutrition in the preterm neonate.