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RETRANSFER (RT) IS A SAFE AND COST-EFFECTIVE MEANS OF IMPROVING NEONATAL INTENSIVE CARE UNIT (NICU) UTILIZATION. Michael Horgan, Marc Perlman, Noel Carrasco. (Spon. Bernard Pollara) Albany Med. College, Pediatric Dept., Albany NY

During an 18 mo. period, 1255 neonates were admitted to the only Level III (LIII) NICU in a 50,000 sq. mi. service area with 26,000 live births/yr and having 33 Level I (LI) and 5 Level II (LII) referring hospitals. 739 of 1255 patients were transported from referring hospitals. 524 were neonatal transports (NT) and 215 maternal transports (MT). 641 of 739 survived and were eligible for RT to referring hospitals after stabilization. 225/641 (35%) underwent RT; only 4 required NICU readmission. Duration of hospitalization was greater for infants <2000 gms. birthweight (BW). Analysis of transport and RT patterns is shown below.

Transport	BW(g)	#TRANSPORT/#RT(%)			HOSPITAL DAYS	
		LI	LII	RT(%)	RT	Not RT
MT	<2000	20	40	44/33		
	>2000	6	12	6/7		
NT	<2000	29	39	57/43	17.8	21.0
	>2000	47	35	118/31		

Rates of RT to LI or LII were all <50%; when used, RT safely decreased duration of NICU hospitalization. **Conclusions:** at an average LIII cost of \$800/day and an LI/LII cost of \$400/day, RT represents \$770,000 in potential annual savings. As shown here, analysis of regional referral patterns and use of RT aids optimal use of limited NICU resources.

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ISOLATION OF CYTOMEGALOVIRUS (CMV) FROM TOYS AND HANDS IN A DAY CARE CENTER (DCC), C. Hutto and R. F. Pass, The University of Alabama School of Medicine, Department of Pediatrics, Birmingham, Alabama

CMV is transmitted readily among children in DCCs. Results of a previous study suggested that exchange of infected saliva by means of fomites may be important in the acquisition of CMV in DCCs. To explore the potential role of fomites in transmission of CMV in this environment we studied the oral excretion of CMV, oral behavior of toddlers, persistence of infectious virus on toys, and performed random environmental cultures in a single DCC in which over the past 3 years 70-80% of toddlers have had viremia. Oral behavior, recorded as the median number episodes/child/hour of hand or object to mouth contact, was 21 for children 12-36 months and 5 for those >36 months. Persistence of virus on toys was determined by culturing 9 toys which had been mouthed by known excretors of CMV immediately after removal from the mouth and at 10, 30, and 60 minutes. CMV was recovered from 8/9 (88%) immediately, 5/9 (56%) at 10, 2/9 (22%) at 30, and 0/9 at 60 minutes. We then cultured randomly selected toys in a toddler class as well as the hands and saliva of toddlers and the hands of 7 teachers. CMV was recovered from 1/7 toys, 10/30 (33%) saliva specimens, and the hands of 2 children and 1 teacher. Using restriction enzyme analysis, we examined the DNA extracted from the viruses isolated from the toy, the teacher's hand and saliva from one child. All were identical. These data, especially the recovery of virus with random survey cultures, suggest that contamination of objects may contribute to the high rate of CMV infection in this day care center.

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FAMILIAL FETAL ALCOHOL SYNDROME: INCIDENCE IN BLACKS AND HISPANICS. Silvia Iosub, Magdalena Fuchs, Nesrin Bingol, Richard K. Stone, Donald S. Gromisch, Edward Wasserman, New York Medical College, Metropolitan and Lincoln Hospital Centers, Dept. of Pediatrics, N.Y.C.

In a previous study we noted a higher incidence of fetal alcohol syndrome (FAS) in blacks, vs. Hispanics. We now compared the incidence of familial FAS and alcohol-related effects (ARE) in black (group I) and Hispanic (group II) patients, ranging in age from 1 day to 20 years. The average age of mothers at first visit was slightly higher in group II (31 vs. 28.6 in group I). The amount of alcohol abused during pregnancy ( $\geq 3$  oz of absolute alcohol/day), average duration of alcohol abuse and socio-economic background (on public assistance, unwed mothers) were similar in both groups. Group I comprised 16 families with 39 children, 16 females and 23 males. Eleven families had 2 afflicted children, 4 families had 3 and one family had 5 afflicted children. FAS was diagnosed in 25 patients and ARE in 14. Group II comprised 7 families with 17 children, 10 females and 7 males. Five families had 2 afflicted children, one family had 3 and 1 family 4 afflicted children. FAS was found in 13 patients and ARE in 4. Though our clinic population is 65% Hispanic, familial FAS was significantly more frequent in blacks ( $p < .01$ ). We conclude that for yet unexplained reasons single and multiple cases of FAS are more frequent in black than in Hispanic families.

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EFFICACY AND COST OF INTERMEDIATE LEVEL NEWBORN INTENSIVE CARE (INIC) IN A LOW BIRTH WEIGHT (LBW) POPULATION IN CALCUTTA, INDIA. Dana E. Johnson, Chitra Subramanian, Cherie Clark, Bruce Ferrara (Spon. by Thomas P. Green). University of Minnesota Medical School, Department of Pediatrics, Minneapolis, Minnesota.

Although intensive care has resulted in an improved prognosis for LBW infants, these benefits have only been realized in prosperous nations. The efficacy and cost of implementing a program of INIC (Level II) was retrospectively evaluated over a four year period in Calcutta, India. The patient population (94.7% <2500 g) included all infants admitted to the facilities operated by the International Mission of Hope (India) Society. Survival was compared within 250 gram increments between 1980-81 when infants with major medical problems were hospitalized in outside facilities (mortality rate=100%) and 1982-83 when INIC care was provided completely within the facility. Overall survival increased from 37.9% (n=504) in 1980-81 to 70.5% (n=581) in 1982-83 ( $p < .005$ ). A statistically significant improvement in survival occurred in all birth weight categories. Survival in infants <1250 grams improved least [5.6% (n=89) to 22.9% (n=109) ( $p < .005$ )]. Infants between 1251 and 2000 grams benefitted most [40% (n=279), 74.8% (n=322),  $p < .005$ ]. Average daily cost for the entire period of hospitalization was \$7.75 vs. \$1,033 for a comparable population in our own institution. These data indicate that the survival of LBW infants, free from significant medical problems (HMD, asphyxia, cong. anom.), can be improved with INIC at a low cost. However, the application of this type of program must still be considered in relation to the long-term health goals and available financial resources in non-industrialized countries.

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SUDDEN INFANT DEATH IN INTENSIVE CARE UNIT GRADUATES V. Kamtorn, H. Graber, A. Bautista, A. Soni, S. Sun (Spon. by Richard Rapkin) UMD-NJ Med. School, Children's Hosp. of N.J., Dept. of Neonatology, Newark, N.J.

The graduates of neonatal intensive care units (NICU) are a group of high risk infants. Few studies have documented the risk of sudden infant death syndrome (SIDS) in this special group of infants. We decided to document the incidence of SIDS and some risk factors associated with it as part of our High Risk Infant Follow-up Program. Since January 1980 to September 1984, 917 infants have been discharged from our NICU. Eight infants died of SIDS during this period with an incidence of 0.87% among total NICU graduates. Further division into birth weight specific SIDS mortality rate revealed 3.8% (2/53) for BW between 500-1000 gm, 2.5% (3/120) for BW between 1001 to 1500 gm, 2.9% (5/173) for BW between 500 to 1500 gm 0.3% (1/348) for BW between 1500 to 2500 gm and 0.5% (2/396) for BW of >2500 gm. Mean age at death was 4 months, ranging from 1 to 6 months of age. Fifty percent of the deaths occurred in the winter season. Significant associated risk factors included low socioeconomic status (75% of SID infants), single mothers (62.5%), and race (50% black, 25% Hispanic, and 25% white). There was an equal distribution of sexes. This study reveals a 4 fold increase in the risk of SIDS in NICU graduates and 15 times increased risk in the VLBW infants of NICU graduates compared to that of general infant population.

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THE CHANGING PATTERN OF EARLY NEONATAL DEATHS (<48h). C. Kenyon, J. Hellmann (Spon. by P.R. Swyer). Dept. Paed., Hospital for Sick Children, Toronto, Canada.

Autopsies of newborn infants dying <48 h after admission to an outborn referral centre were reviewed for (A) 1972/73 and (B) 1982/83. 154 autopsies in (A) and 89 in (B) were performed.

Major Categories	(A) 72/73	%	(B) 82/83	%
Congenital anomalies	42	(27)	46	(52)
Respiratory disease	67	(44)	23	(26)
Perinatal asphyxia	20	(13)	12	(13)
Neonatal sepsis	22	(14)	7	(8)
Miscellaneous	3	(2)	1	(1)

Congenital Anomalies: 2 lesions accounted for >80% of deaths in this category in both periods: CHD (Hypoplastic L. heart commonest single abn) and pulmonary hypoplasia with associated conditions. Respiratory deaths occurred with similar frequency in all weight groups up to 2.5 kg in (A) with 37% <1000 gm. In (B) 87% of all early respiratory deaths were <1000 gm. The incidence of SEH-IVH in pulm. deaths was constant in both periods (42%). Asphyxia accounted for 13% of deaths in both (A) & (B); however, in (A) 6 of the 20 asphyxial deaths were in prematures while only 1 in 12 in (B) was <38 wks GA. Sepsis due to GBS occurred in 10/22 in (A) and 6/7 in (B). Group A infants were more immature (33 wks vs 36 wks) and lower Bwt. ( $\bar{x}$  2.0 kg vs 2.6 kg) than Group B. A decade of perinatal care directed at LBW infants has had a major impact on early deaths from lung disease in infants >1.0 kg, little change in incidence of lethal anomalies, and has highlighted the incidence of asphyxia and sepsis in more mature infants.