992 REACTIONS, TOTAL AND IGM ANTIBODY RESPONSE FOLLOWING IMMUNIZATION WITH SPLIT (SV) AND WHOLE (WV) INACTIVATED INFLUENZA VACCINES IN 77 CHILDREN 6 TO 36 MONTHS OF AGE. David I. Bernstein, James D. Cherry, John M. Zahradnik, and Charles J. DeAngelis. UCLA Sch. Med., Center for the Health Sciences, Dept. Pediatrics, Los Angeles.

Twenty-seven subjects in 1978-79 received monovalent (M) A/USSR/77 (H1N1) (3.5 ug HA) vaccine followed 1 month later by trivalent (T) A/USSR/77, A/Tex/77 and B/HK/72 (10.5 ug HA) vaccine. In 1979-80 50 subjects received similar immunization but the H1N1 component was A/Brazil/78. Forty-one subjects received WV and 36 SV vaccine. Reactions (expressed as reaction index) following M vaccine were WV 0.54, SV 0.38 and after T vaccines were WV 0.90, SV 0.33. No child had temperature >103°F. The percentages of HAI antibody titers >1:20 by antigen were as follows: H1N1 - 1 dose WV 35%, SV 30%; H1N1 2 doses WV 97%, SV 72%; A/Tex - WV 92%, SV 97%; B/HK - WV 62%, SV 53%. An IgM antibody response (as demonstrated by a >4-fold reduction in titer with 2-ME treatment) was noted more frequently following WV vaccine (38%) than following SV vaccine (13%). As employed in this study the monovalent WV vaccine was of equal reactogenicity to the SV vaccine and though the WV trivalent vaccine had a higher reaction index, it was still within acceptable limits. Since the immunologic response following WV vaccine more closely resembled a natural response (IgM antibody) and was more immunogenic against the recently isolated H1N1 viruses, it may be a better vaccine for the initial immunization of unprimed children. As in previous studies with A/NJ/76 vaccine, two doses of either vaccine were necessary to produce an adequate response to the H1N1 virus.

993 C. DIFFICILE RELATED COLITIS IN CHILDREN FOLLOWING ANTIMICROBIAL THERAPY. William E. Berquist, W. Lance George, Sydney M. Finegold, Rial D. Rolfe, Marvin E. Ament, UCLA Medical Center, Department of Pediatrics, Los Angeles.

C. difficile (CD) and its cytotoxin (C) has been demonstrated to be responsible for antimicrobial induced diarrhea (AID) and pseudomembranous colitis. We determined the incidence and manifestations of CD and C in 3 groups (Gp) of children with suspected acute or chronic AID (Gp I), children with chronic diarrhea prior to antimicrobial therapy (Gp II) and control children without diarrhea (Gp III).

Gp	Number (n) of Patients	Mean Age (mos.)	Male:Female	+C.D. culture n tested	C n tested
I	7	16	2:5	7/7*	4/4
II	7	18	5:2	1/7	0/7
III	9	22	6:3	1/9	0/9

*(χ=15.66 p <.005, df=2)

Antibiotics (n of patients) used in Gp I include: lincomycin (1), clindamycin (1), ampicillin (4), amoxicillin (1); in Gp II include penicillin (2), metronidazole (1), amoxicillin (2), ampicillin (2). Six of 6 patients in Gp I had mild proctocolitis confirmed by rectal biopsy without pseudomembranes on proctosigmoidoscopy. All 7 patients in Gp I became asymptomatic within 6 weeks of discontinuing antimicrobial therapy except 1 patient who received oral vancomycin (V) and became asymptomatic during V therapy but diarrhea recurred after V therapy with stool culture + for CD and C for up to 6 months. Children may become chronic carriers of CD; the presence of CD and C can be used to distinguish acute/chronic colitis related to antimicrobial therapy from other causes of colitis in children.

● **994** NEUTRALIZATION OF HERPES SIMPLEX VIRUS BY ANTIBODY IN AMNIOTIC FLUID John S. Bradley, Anne S. Yeager, Donald C. Dyson, Paul A. Hensleigh, Arnold L. Medearis and Ann M. Arvin, Stanford University School of Medicine, Departments of Pediatrics and Obstetrics, Stanford, CA.

The incidence of natally acquired Herpes simplex infections (HSI) has been estimated to be 1/7500 births, despite the fact that rates of asymptomatic shedding by pregnant women have been shown to be as high as 1/154. To investigate mechanisms which may explain the lower than expected incidence of clinical infection, amniotic fluid (AF) obtained during gestation and amniotic fluid and secretions (AF-S) obtained from the infants' mouths at delivery were tested for ability to neutralize HS. AF or AF-S were incubated with an equal volume of virus inoculum for 1 hr at 37°C. Neutralization of virus was assessed by reduction in expected plaque forming units (pfu). Maternal serum antibody was considered absent if the neutralization titer was <1:5, low if 1:5-1:39, and high if >1:40. AF and AF-S from 22 women whose serum titers were <1:5 did not neutralize HS. Ninety-six percent of AF or AF-S from 32 women with high serum antibody neutralized 50 pfu/0.1cc and 83% neutralized 500 pfu/0.1cc. Among women with low serum antibody, 52% of samples neutralized 50 pfu/0.1cc and 31% neutralized 500 pfu/0.1cc. Treatment with protein A to remove IgG also removed the neutralizing activity. Antibody to HS is, therefore, present in AF and the quantity present correlates with the mother's serum antibody titer. These results are consistent with a decreased risk of infection in infants of mothers with high antibody titers.

995 VIRAL ASSOCIATIONS OF THE TOXIC-SHOCK SYNDROME (TSS). P. Joan Chesney, Jeffrey P. Davis, Todd J. McPherson, Donald B. Nelson (Spon. by Russell W. Chesney). University of Wisconsin, Department of Pediatrics, WI Division of Health and WI State Laboratory of Hygiene, Madison, WI.

34 patients (pts) fulfilling the criteria for the case definition of TSS were evaluated for associated viral infections. 21 pts were cultured from 47 sites: throat (17), stool (16), urine (6), vagina (3), CSF (2), other (3). Herpes Simplex Virus type 1 (HSV1) isolated from two oral and one genital lesion was the only virus demonstrated.

Acute and convalescent sera were available for 28 pts. 10 pts (35.7%) had a significant ($\geq$4 fold) increase in titer to one or more viruses (Table). 8 pts had a significant increase in titer to one virus and 2 pts had an increase to each of two viruses. Two pts had primary HSV1 infections documented serologically. One of these pts had a genital HSV1 isolate. 9 additional pts had an acute HSV1 titer of $\geq$1:8; 6/9 were $\geq$1:32 and 8/9 increased by one dilution. 2/9 pts had an oral HSV1 isolate, 3/9 had ⊖ HSV1 cultures and 4/9 had no cultures. Thus, 13/25 pts (52%) had a primary or recently reactivated HSV1 infection.

	No. Pos. / No. Tested	%
HSV1	4/25	16
CoxB5	3/21	14
CoxB4	2/21	9.5
Measles	1/7	14
RSV	1/18	5.5
Adeno	1/18	5.5

In conclusion, no viral etiology of TSS was documented but a trend toward HSV1 and CoxB virus infections associated with TSS was demonstrated.

996 STAPHYLOCOCCAL PROTEIN A (SPA) IN THE EVALUATION OF POSSIBLE CONGENITAL INFECTION. Tasnee Chonmaitree, Marilyn A. Menegus, and Keith R. Powell (Spon. by David H. Smith), University of Rochester, Strong Memorial Hospital (SMH), Rochester, New York.

We have used SPA adsorption to remove maternal IgG from cord or neonatal sera to facilitate the diagnosis of congenital infection. To evaluate the clinical usefulness of this procedure, sera sent for "TORCH" serology that were rubella HI (RHI) or toxoplasmosis FA (TFA) positive were retested after SPA adsorption. RHI or TFA was repeated after 4 months of age.

RHI titers were >1:8 in 47/53 (90%) sera sent for TORCH serology Jan-Nov 1980. At discharge from hospital, only 1 child was thought to have congenital rubella. After SPA adsorption 7/47 (15%) had detectable RHI antibody. All children RHI negative after SPA adsorption have been negative at >4 months of age. To date, 5 children with persistent RHI antibody after SPA adsorption have been retested at >4 months. The infant thought to have congenital rubella had a RHI of 1:64; another with multiple anomalies was 1:16; the rest were <1:8. From Jan 1979-Nov 1980, 10 of 110 sera sent for TORCH serology were TFA positive. After SPA adsorption only 1 specimen remained positive and this child had congenital toxoplasmosis. We conclude that infants RHI or TFA negative after SPA adsorption are unlikely to be infected with these agents. Children with residual antibody should be evaluated further. Using this simple technique, positive serology was shown to be unrelated to intrauterine infection for 85% of RHI positive sera and 90% of TFA positive sera.

● **997** GRANULOCYTE TRANSFUSIONS (GT) INCREASE SURVIVAL IN NEONATES WITH SEPSIS AND NEUTROPHIL DEPLETION. Robert Christensen, Gerald Rothstein, Peter Bradley, Dennis Priebat, Blair Bybee and Harold Anstall (spon. by Lowell Glasgow) University of Utah College of Medicine, Salt Lake City, Utah.

The mortality of septic infants approaches 80% if they exhibit neutropenia and depletion of the marrow neutrophil storage pool (% PMN + bands + metas/1000 marrow cells) (J. Peds., 1981). We postulated that GT might decrease mortality in these infants and tested this hypothesis in an animal model and clinical study. Eight newborn dogs were inoculated intratracheally with Staph aureus, developed neutropenia and died (490 ± 280 neut/mm^3 vs 8,390 ± 490 in controls, $\bar{x}$ ± S.E. p <.001). In addition, their neutrophil storage pool (NSP) was diminished to 3 ± 1% vs 27.2 ± 2.6% in the controls (p <.001). Other infected pups received either GT, containing 10^9 neutrophils/kg, or plasma (controls). None of 7 controls survived, but 5 of 6 GT pups survived (p < .005). Nineteen human neonates with sepsis and neutropenia were studied. All 10 with a marrow NSP of >9% survived. Only one of 9 with an NSP of <6% survived. Then, neonates with sepsis, neutropenia and an NSP of <6% were randomly assigned to receive or not receive GT. Of 5 infants who did not receive GT, one survived. All 4 who received 0.2-1.0 x 10^9 neutrophils/kg survived (p <.05). No significant change in PaO_2 (↑2 ± 2 torr), $PaCO_2$ (↑1.5 ± 2 torr), pH (↓0.01 ± 0.01 units), or blood pressure (↑2 ± 2 mmHg) occurred with GT. All urine cultures were negative for CMV. These data support the concept that GT may be practical and effective in septic, neutrophil depleted neonates.