VIRGINIA
EPIDEMIOLOGY BULLETIN

C.M.G. Buttery, M.D., M.P.H., Commissioner
Grayson B. Miller, Jr., M.D., Epidemiologist
Editor: Carl W. Armstrong, M.D., F.A.C.P.

January, 1991 Volume 91, Number 1

Cigarette Smoking, Birthweight, and Social Class*

Several studies have shown that the effects of cigarette smoking during pregnancy on perinatal mortality are greater among mothers of lower socioeconomic status (1,2). A more recent study showed no such protective effect of higher social class on perinatal mortality when the investigators controlled for parity (3).

Since birthweight is such a powerful determinant of perinatal mortality, we reasoned that if higher social class exerted a protective effect on perinatal mortality among women who smoked during pregnancy, it would probably do so as well with regard to birthweight.

Using birth certificates as a source of data, we determined the mean birthweight of 1,135 singleton infants born in one hospital in the Crater Health District during 1990 according to the smoking status during pregnancy of the mother while controlling for social class (maternal educational attainment).

The usual effects of cigarette smoking on birthweight were apparent for blacks and whites. The mean birthweight of infants born to white nonsmokers (N=414) was 3,457 g, and that for infants born to white smokers (N=70) was 3,190 g. This difference, 267 g, is highly significant (t=3.8, df=482, p=0.001). The mean birthweight of infants born to black nonsmokers (N=343) was 3,215 g, and that for infants born to black smokers (N=43) was 3000 g. The difference, 215 g, is also significant (t=2.5, df=581, p=0.012).

There was no apparent protective effect of social class with regard to

cigarette smoking during pregnancy and its effect on birthweight. The mean birthweight for infants born to white mothers who smoked during pregnancy and who had an educational attainment of 11 years or less (N=25) was 3,214 g. The mean birthweight for infants born to white mothers who smoked during pregnancy and who had an educational attainment of 12 years or more (N=45) was 3,175 g (t=0.29, df=68, p=ns). The mean birthweight for infants born to black mothers who smoked during pregnancy and had an educational attainment of 11 years or less (N=11) was 2,816 g. The mean birthweight for infants born to black mothers who smoked during pregnancy and had an educational attainment of 12 or more years (N=32) was 3,063 g (t=-1.4, df=41, p=ns).

We considered the possibility that the number of cigarettes smoked by women with less education might differ from the number smoked by women with more education, but this did not prove to be the case.

The mean number of cigarettes smoked daily by white women with 11 or fewer years of education was 13.7 while that of white women with 12 or more years of education was 13.8. The mean number of cigarettes smoked daily by black mothers with 11 or fewer years of education was 9.7. That for black mothers with 12 or more years of education was 8.5. Neither difference was statistically significant.

Clearly, caution is necessary in interpreting the results of this study due to the small size of the sample. A study in 1986 suggested that in the United States, 22 percent of white mothers and 16 percent of black mothers smoked during pregnancy (4). Analysis of our data revealed that only 14 percent of white mothers and 7 percent of black mothers were reported as smoking during pregnancy. Hence, it seems highly probable that misclassification bias is also a problem in this study.

In This Issue...

References

1. Rush D, Cassano P. Relationship of cigarette smoking and social class to birthweight and perinatal mortality among all births in Britain, 5-11 April 1970. J Epidemiol Commun Health 1983;37:249-255.

2. Meyer MB, Tonascia JA, Buck C. The interrelationship of maternal smoking and increased perinatal mortality with other risk fac-

tors. Further analysis of the Ontario perinatal mortality study, 1960-1961. Amer J Epidemiol 1975;100:443-452.

3. Kleinman J, Pierre MB, Madans JH et al. The effects of maternal smoking on fetal and infant mortality. Amer J Epidemiol 1986;127:274-282.

4. Williamson DF, Serdula MK, Kendrick JS, Binkin NJ. Comparing the prevalence of smoking in pregnant and nonpregnant women, 1985 to 1986. JAMA 1989;261:70-74.

* *By Donald W. MacCorquodale, MD, MSPH, and Judy Gill, BA. , Crater Health District, Virginia Department of Health*

Prevention 91 Conference

On March 16-19, 1990, the American College of Preventive Medicine and the Association of Teachers of Preventive Medicine will sponsor the Eighth Annual National Preventive Medicine Meeting in Baltimore, Maryland. CDC and the Agency for Toxic Substances and Disease Registry, along with other health organizations, will cosponsor the meeting.

Topics include the cost-effectiveness and efficacy of prevention, rural health problems, nutrition, underserved populations and access to preventive services, environmental health, injury and violence, genetics, and substance abuse. Activities include computer demonstrations, workshops, and special interest group meetings.

Registration information is available from Prevention 91, 1015 15th Street, NW, Suite 403, Washington, DC 20005; telephone (202)789-0006.

Availability of Meningococcal Vaccine in Single-Dose Vials for Travelers and High-Risk Persons*

The Food and Drug Administration has approved a single-dose vial of quadrivalent polysaccharide vaccine against Neisseria meningitidis serogroups A, C, Y, and W135. The single-dose vial replaces the previously available 10-dose vial, which, once reconstituted, has a 5-day shelf life. This limitation is obviated by the single-dose vial and should facilitate administration to persons at high risk.

Immunization is recommended for persons with anatomic or functional asplenia and deficiencies of the terminal components of the complement system. Additionally, travelers to areas with hyperendemic or epidemic meningococcal disease should be immunized (1). Updated travel advisories can be obtained from travelers' clinics, county and state health departments, and CDC.

The vaccine is not recommended for routine use in the United States for three reasons: 1) meningococcal disease is infrequent (approximately 3000 cases per year); 2) no vaccine exists for serogroup B, which accounts for about 50% of cases in the United States; and 3) vaccine is not efficacious against group C disease in children less than 2 years of age (2). This age group accounts for 28% of the group C cases in the United States (CDC, unpublished data).

In adults, the protective efficacy of the vaccine is 85%-95% for disease caused by serogroups A or C (3,4). Efficacy data are not available for serogroups Y and W135, but the vaccine is immunogenic for both of these serogroups (5-7). Side effects of the vaccine are mild and infrequent, consisting primarily of erythema and induration at the site of injection and low-grade fever. Protective immunity is achieved 10-14 days after vaccination.

The new single-dose tetravalent vaccine is available from local distributors or Connaught Laboratories, Inc., A Pasteur Merieux Company (telephone (800) 822-2463). Physicians are encouraged to report all cases of meningococcal disease to their local health departments.

References

1. ACIP. Meningococcal vaccines. MMWR 1985;34:255-9.

2. Taunay A de E, Galvao PA, de Morais JS, Gotschlich EC, Feldman RA. Disease prevention by meningococcal serogroup C polysaccharide vaccine in preschool children: results after eleven months in Sao Paulo, Brazil (Abstract). Pediatr Res 1974;8:429.

3. Makela PH, Kayhty H, Weckstrom P, Sivonen A, Renkonen OV. Effect of group A meningococcal vaccine in army recruits in Finland. Lancet 1975;2:883-6.

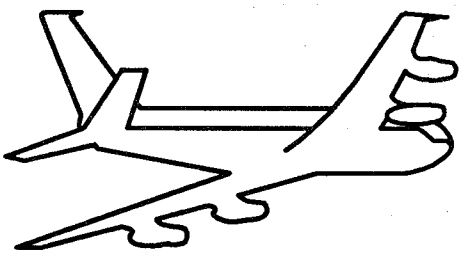
4. Artenstein MS, Gold R, Zimmerly JG, Wyle FA, Schneider H, Harkins C. Prevention of meningococcal disease by group C polysaccharide vaccine. N Engl J Med 1970;282:417-20.

5. Hankins WA, Gwaltney JM, Hendley JO, Farquhar JD, Samuelson JS. Clinical and serological evaluation of a meningococcal polysaccharide vaccine groups A, C, Y, W135 (41306). Proc Soc Exp Biol Med 1982;169:54-7.

6. Armand J, Arminjon F, Mynard MC, Lafaix C. Tetravalent meningococcal polysaccharide vaccine groups A, C, Y, W135: clinical and serological evaluation. J Biol Stand 1982;10:335-9.

7. Griffiss M, Brandt BL, Altieri PL, Pier GB, Berman S. Safety and immunogenicity of group Y and group W135 meningococcal capsular polysaccharide vaccines in adults. Infect Immun 1981;34:725-32.

* *Reprinted from MMWR 1990;39:763.*



International Travelers' Hotline

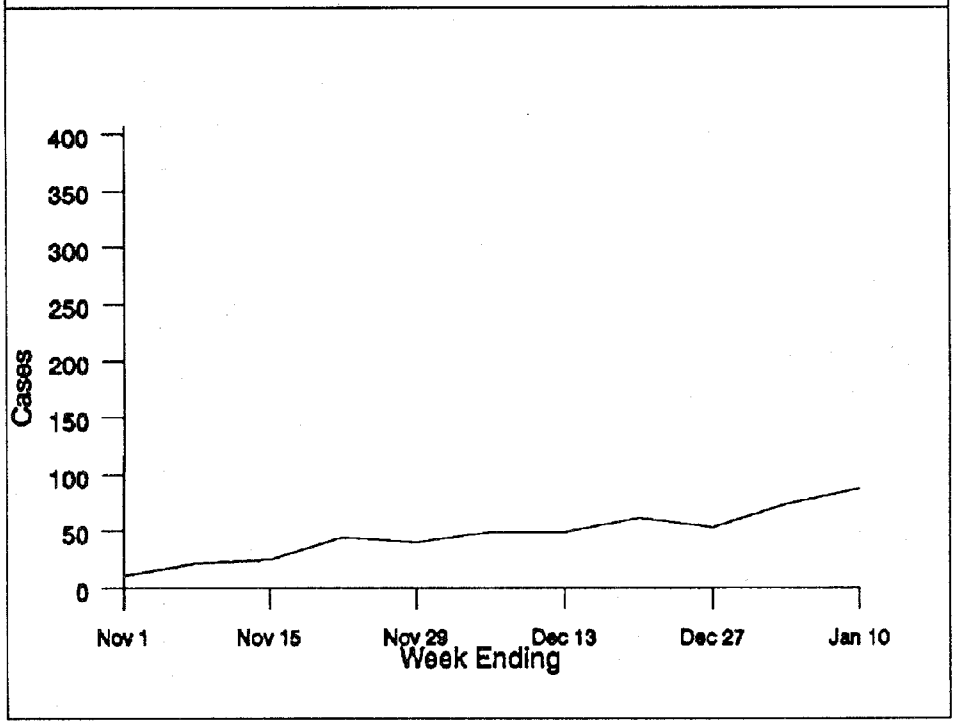
The Centers for Disease Control's Travelers' Health Section, Division of Quarantine, Center for Prevention Services, now has a 24-hour-a-day automated telephone system that provides information for international travelers on vaccine requirements and recommendations by geographic area. Menu options include information on malaria, food and water precautions, travelers' diarrhea, immunizations for children <2 years of age, pregnant travelers, and disease outbreaks. To access this information, dial (404) 332-4559. Local health departments and the Office of Epidemiology (804/786-6261) will continue to provide individualized advice on vaccine requirements for travel.

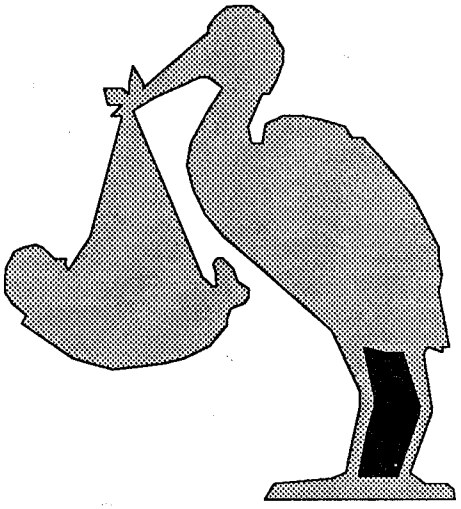
Source: MMWR 1990;39:399.

Food and Drug Administration Approval of Use of a Haemophilus b Conjugate Vaccine for Infants*

On December 13, 1990, the Food and Drug Administration (FDA) approved the Haemophilus b Conjugate Vaccine (Meningococcal Protein Conjugate) (PRP-OMP) (manufactured by Merck Sharpe and Dohme and distributed as PedvaxHIB). This vaccine is approved for use in a two-dose primary immunization schedule for infants at 2 and 4 months of age, with a booster dose at 12 months of age. Previously unvaccinated infants 5-10 months of age should receive two doses of PedvaxHIB 2 months apart and a booster dose at 12 months of age. Children 11-14 months of age not previously vaccinated should receive two doses 2 months apart. Previously unvaccinated children 15-60 months of age should receive one dose and do not require a booster. This dosing schedule differs from that for the Haemophilus b Conjugate Vaccine (Diphtheria CRM_{197} Protein Conjugate) (HbOC) licensed for infant use in October 1990 and reviewed in the November issue of the *Virginia Epidemiology Bulletin* (1).

Figure 1. Influenza-like Illness Reported by Sentinel Physicians in Virginia (N=49), November1, 1990-January 10, 1991. Influenza B Virus Has Been Isolated from Two Patients in the Eastern Region.





Haemophilus influenzae type b (Hib) is the major cause of bacterial meningitis in children less than 5 years of age, with the peak incidence in children less than 1 year of age (2). The principal efficacy trial for PRP-OMP was conducted in approximately 5000 Native American infants in Arizona and New Mexico, half of whom received the vaccine in a prospective placebo-controlled study (M. Santosham, personal communication, 1990). A total of 3486 infants completed the primary two-dose regimen. Fourteen cases of Hib invasive disease occurred in unvaccinated children, compared with one case in fully vaccinated children, indicating an efficacy of 93% (95% confidence interval=53%-99%). The Immunization Practices Advisory Committee will issue a complete statement on this vaccine.

References

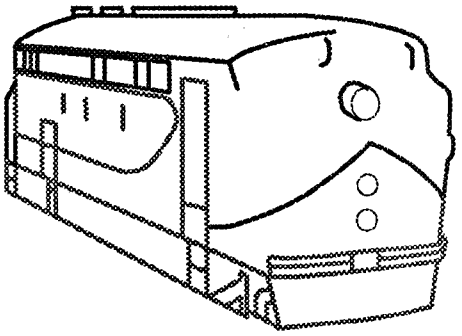
1. CDC. Food and Drug Administration approval of use of Haemophilus b Conjugate Vaccine for infants. MMWR 1990;39:698-9.

2. Schlech WF, Ward JI, Band JD, et al. Bacterial meningitis in the United States, 1978 through 1981: the National Bacterial Meningitis Surveillance Study. JAMA 1985;253:1749-54.

** Reprinted from MMWR 1990;39:925-926.*

We've Moved!

The Office of Epidemiology has completed its move to the old Main Street Train Station. This will be our "home" until the Madison Building is renovated. Our new mailing address is: **Office of Epidemiology, Main Street Station Rm 113, PO Box 2448, Richmond, VA 23218.**



Cases of Selected Notifiable Diseases, Virginia, December 1 through December 31, 1990.

Disease	Total Cases Reported This Month						Total Cases Reported to Date in Virginia		
		Regions							
	State	NW	N	SW	C	E	This Yr	Last Yr	5 Yr Avg
AIDS	68	3	33	4	14	14	650	446	272
Campylobacter	65	18	11	15	11	10	598	689	679
Gonorrhea	930	-	-	-	-	-	17654	15993	16535
Hepatitis A	19	0	8	5	1	5	302	334	253
Hepatitis B	43	3	15	6	12	7	279	321	442
Hepatitis NANB	4	0	2	0	1	1	46	70	75
Influenza	30	0	2	14	14	0	821	2108	2373
Kawasaki Syndrome	0	0	0	0	0	0	24	23	25
Legionellosis	0	0	0	0	0	0	13	13	18
Lyme Disease	7	1	1	1	0	4	129	54	24
Measles	0	0	0	0	0	0	86	22	70
Meningitis, Aseptic	42	4	12	10	4	12	386	417	327
Meningitis, Bacterial	8	1	1	3	1	2	144	191	211
Meningococcal Infections	6	0	1	2	0	3	58	73	68
Mumps	5	1	2	0	0	2	108	125	89
Pertussis	1	0	0	0	0	1	25	37	40
Rabies in Animals	14	8	4	0	1	1	202	262	274
Reye Syndrome	0	0	0	0	0	0	1	2	1
Rocky Mountain Spotted Fever	1	0	0	0	1	0	25	18	26
Rubella	0	0	0	0	0	0	1	0	3
Salmonellosis	159	21	41	20	46	31	1491	1452	1624
Shigellosis	11	2	5	0	3	1	158	410	269
Syphilis (Primary & Secondary)	26	1	1	5	8	11	880	593	397
Tuberculosis	26	0	13	3	1	9	410	380	428

Localities Reporting Animal Rabies: Augusta 1 skunk; Clarke 1 raccoon; Fairfax 1 fox, 1 raccoon; Gloucester 1 raccoon; Loudoun 1 raccoon; Madison 1 skunk; Prince George 1 skunk; Prince William 1 raccoon; Rappahannock 1 skunk; Rockingham 1 raccoon; Shenandoah 2 raccoons; Spotsylvania 1 raccoon.

Occupational Illnesses: Asbestosis 6; Carpal Tunnel Syndrome 48; Coal Workers' Pneumoconiosis 31; Loss of Hearing 9; Repetitive Motion Disorder 5; Silicosis 2.
*other than meningococcal

Published monthly by the
VIRGINIA HEALTH DEPARTMENT
Office of Epidemiology
PO Box 2448
Richmond, Virginia 23218