State of Alaska Epidemiology **Bulletin**

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INFLUENZA VIRUS VACCINE FOR 1979-80

Influenza vaccine for 1979-80 will consist of inactivated trivalent preparations of antigens representative of influenza viruses expected to be prevalent; A/Brazil/78(H1N1), A/Texas/77 (H3N2), and B/Hong Kong/72. The formulation will contain 7 micrograms of hemagglutinin of each antigen in each 0.5 ml dose. Persons 27 years and older will require only one dose. Because of lack of previous contact with H1N1 strains, persons less than 27 who did not receive at least 1 dose of the 1978-79 trivalent vaccine will require 2 doses of the 1979-80 vaccines. Those who received the 1978-79 vaccine will require only 1 dose. The vaccine will be available as whole virion (whole-virus) and subvirion (split-virus) preparations. Based on past data, split-virus vaccines have been associated with somewhat fewer side effects than whole-virus vaccines in children. Thus, only split-virus vaccines are recommended for persons less than 13 years of age. The vaccines prepared for the 1978-79 respiratory disease season contained A/USSR/77 as the H1N1 component. Because of the antigenic similarities between the A/USSR/77 and the A/Brazil/78 strains, the stocks of vaccine remaining from last year may be used, until the expiration date, according to the instructions on the package insert.

Annual vaccination is strongly recommended for all individuals at increased risk of adverse consequences from infections of the lower respiratory tract. Conditions predisposing to such risk include (1) acquired or congenital heart disease associated with altered circulatory dynamics, actual or potential (for example, mitral stenosis, congestive heart failure, or pulmonary vascular overload); (2) any chronic disorder with compromised pulmonary function, such as chronic obstructive pulmonary disease, bronchiectasis, tuberculosis, severe asthma, cystic fibrosis, neuromuscular and orthopedic disorders with impaired ventilation and residual pulmonary dysplasia following the neonatal respiratory distress syndrome; (3) chronic renal disease with azotemia or the nephrotic syndrome; (4) diabetes mellitus and other metabolic diseases with increased susceptibility to infection; (5) chronic, severe anemia, such as sickle cell disease; and (6) conditions which compromise the immune mechanism, including certain malignancies and immunosuppressive therapy.

Vaccination is also recommended for older persons, particularly those over age 65, because excess mortality in influenza outbreaks occurs in this age group.

In considering vaccination of persons who provide essential community services or who may be at increased risk of exposure, such as medical care personnel, the inherent benefits, risks, and cost of vaccination should be taken into account.

Pregnant women should be evaluated for influenza immunization according to the same criteria applied to other persons.

Recent influenza virus vaccines have been associated with few side effects. Local reactions, consisting of redness and induration at the site of injection lasting 1 or 2 days, have been observed in less than one-third of vaccinees. Three types of systemic reactions to influenza vaccines have been described.

1. Fever, malaise, myalgia, and other systemic symptoms of toxicity, although infrequent, occur more often in children and others who have had no experience with influenza viruses, containing the vaccine antigen(s). These reactions, which begin 6-12 hours after vaccination and persist 1-2 days, are usually attributed to the influenza virus itself (even though it is inactivated) and constitute most of the side effects of influenza vaccination.

2. Immediate - presumably allergic - responses, such as flare and wheal or various respiratory expressions of hypersensitivity occur extremely rarely after influenza vaccination. They probably derive from sensitivity to some vaccine component, most likely residual egg protein. Although current influenza vaccines contain only a small quantity of egg protein, on rare occasions they can provoke hypersensitivity reactions. Individuals with anaphylactic hypersensitivity to eggs should not be given influenza vaccine. This would include persons who, upon ingestion of eggs, develop swelling of the lips and tongue or who experience acute respiratory distress or collapse.

3. Guillain-Barre' syndrome (GBS) is an uncommon illness, characterized by ascending paralysis which is usually self-limited and reversible. Though most persons with GBS recover with residual weakness, approximately 5% of the cases are fatal. Before 1976, no association of GBS with influenza vaccination was recognized. That year, however, GBS appeared in excess frequency among persons who had received the A/New Jersey/76 influenza vaccine. For the 10 weeks following vaccination the excess risk was found to be approximately 10 cases of GBS for every million persons vaccinated - an incidence 5-6 times higher than that in unvaccinated persons. Younger persons (Under 25 years) had a lower relative risk than others and also had a lower case fatality rate. Preliminary analysis of data from GBS surveillance during the 1978-79 influenza season suggests that, in contrast to the 1976 situation, the risk of GBS in recipients of the 1978-79 vaccine was not significantly higher than that in non-vaccines. Nonetheless, persons who receive influenza vaccine should be made aware of this possible risk as compared with the risk of influenza and its complication.

Summary of vaccine* and dosage recommendations by age group for 1979-1980:

Age Group	Product	Dosage (ml)	Number Doses
27 years and older	whole virion (whole virus) or subvirion (split virus)	0.5	1
13-26 years	whole virion (whole virus) or subvirion (split virus)	0.5	2**
3-12 years	subvirion (split virus)	0.5	2**
6-35 months***	subvirion (split virus)	0.25	2**

* Contains 7 μg each of A/Brazil/78, A/Texas/77, B/Hong Kong/72 hemagglutinin antigens in each 0.5 ml.

** 4 weeks or more between doses; both doses essential for good protection, unless the individual received at least 1 dose of 1978-79 vaccine.

*** Based on limited data. Since the likelihood of febrile convulsions is greater in this age group, special care should be taken in weighing relative risks and benefits.

Two points need emphasis and clarification: (1) last years influenza vaccine may be used this year as long as the expiration date has not passed and, (2) persons who were adequately immunized during the 1978-79 season will still require a single injection of the 1979-80 vaccine to maintain adequate immunity.