**INFLUENZA VACCINATION 2000/01**

No. 39, 2000

Surveillance of influenza activity based on reporting from about 100 sentinel physicians has now been in operation for six seasons. As shown in the figure overleaf, there have been three epidemics during this period. Experience over many years has shown that Denmark has, on average, an influenza epidemic about every other year. Secretion specimens sent in by sentinel physicians showed that the two larger epidemics in 1995/96 and 1998/99 were caused by influenza A(H3N2) virus. This is the subtype that has been responsible for the most serious epidemics in recent times. Thus a considerable excess mortality was observed in the population in connection with these epidemics - more than 1500 deaths per epidemic. The epidemic of 1996/97 was a mixed epidemic in which both influenza A(H3N2) and influenza B viruses were involved. This epidemic was also smaller than the others, and was associated with an excess mortality of about 500 deaths.

The influenza vaccine 2000/01

Analyses of viral isolates collected from many different parts of the world have shown that viruses of two different subtypes of influenza A and virus of the influenza B type are still in circulation. The WHO has decided to recommend two new influenza A strains for the coming season's vaccine, as there have been antigen changes in the viral strains belonging to both the influenza A subtypes. There has been no reason to change the influenza B strain.

The following strains have been recommended for the vaccine for the 2000/01 season:

1. An A/New Caledonia/20/99-(H1N1)-like strain;
 2. An A/Moscow/10/99(H3N2)-like strain;
 3. A B/Beijing/184/93-like strain.
- Several vaccine manufacturers have found it advantageous for technical reasons to use A/Panama/2007/99, which is an A/Moscow/10/99-(H3N2)-like strain, and B/Yamanashi/166/98, which is a B/Beijing/-184/93-like strain.

Who should be vaccinated?

The Danish National Board of Health recommends vaccination of the fol-

lowing risk groups:

- Persons under treatment or follow-up for chronic pulmonary or cardiovascular disorders or diabetes mellitus.
- Persons with congenital or acquired immune defects; see below for HIV-infected persons.
- Persons with other diseases in which influenza is considered by the physician to constitute a serious risk to health.
- Persons in institutional care, when the physician must judge from local conditions whether all residents, or only those at special risk, should be vaccinated.
- Persons aged 65 years or more.

Several questions related to the influenza vaccination of HIV-infected persons have not been definitely settled. This applies e.g. to the risk posed by the influenza virus infection. Moreover, in some patients the vaccination may show a poorer protective effect - and there is also a possible risk that the influenza vaccination may aggravate the HIV infection. Advice should be obtained from the infectious diseases department that is following the patient. The inclusion of patients with diabetes mellitus in the same category as those with pulmonary and cardiovascular diseases is an innovation. Diabetic patients show a considerable excess frequency of hospital admissions and deaths due to influenza and pneumonia, which is especially pronounced during influenza epidemics. The number of admissions and deaths due to diabetic ketoacidosis also increases markedly during influenza epidemics. The risk of serious complications is highest in insulin-dependent diabetes and is also clearly raised in the group of patients below 65 years of age. It has been demonstrated that influenza vaccination of diabetics can prevent about 80% of hospital admissions for pneumonia, influenza and ketoacidosis during influenza epidemics.

Vaccination

Influenza vaccination should be performed in October/November, before the usual December-April season for epidemics in Denmark.

Protective antibodies appear within about a week. A single vaccination is

sufficient. However, children under nine years who have not previously been vaccinated against influenza should be given two doses at an interval of at least four weeks.

Degree of protection

In most years the antigens of the viral strains in the vaccine are in good agreement with those of the circulating viruses. If this is so, vaccination prevents 70-90% of cases of illness due to influenza virus. In the elderly, placebo-controlled trials have shown a slightly lower degree of protection - about 60% - against clinical influenza. Protection against the serious complications of influenza is probably somewhat greater, also in the elderly. Influenza vaccination offers no protection against the many other viruses that can cause airways diseases.

Side-effects and contraindications

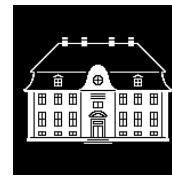
The vaccine contains killed virus and therefore cannot cause influenza. Influenza vaccination does not give rise to more cases of febrile or other general reactions than placebo injections. Transient local reactions with soreness around the injection site may occur.

Persons who are hypersensitive to eggs or other vaccine components, and in whom the hypersensitivity is of the anaphylactic type (urticaria, angioneurotic oedema, asthma, allergic rhinitis or anaphylactic shock), should not be vaccinated against influenza. Pregnant women should normally only be vaccinated if they belong to the listed risk groups. Influenza and pneumococcal vaccination can be given together, but at separate sites, EPI-NEWS 40/98.

Call for new sentinel physicians

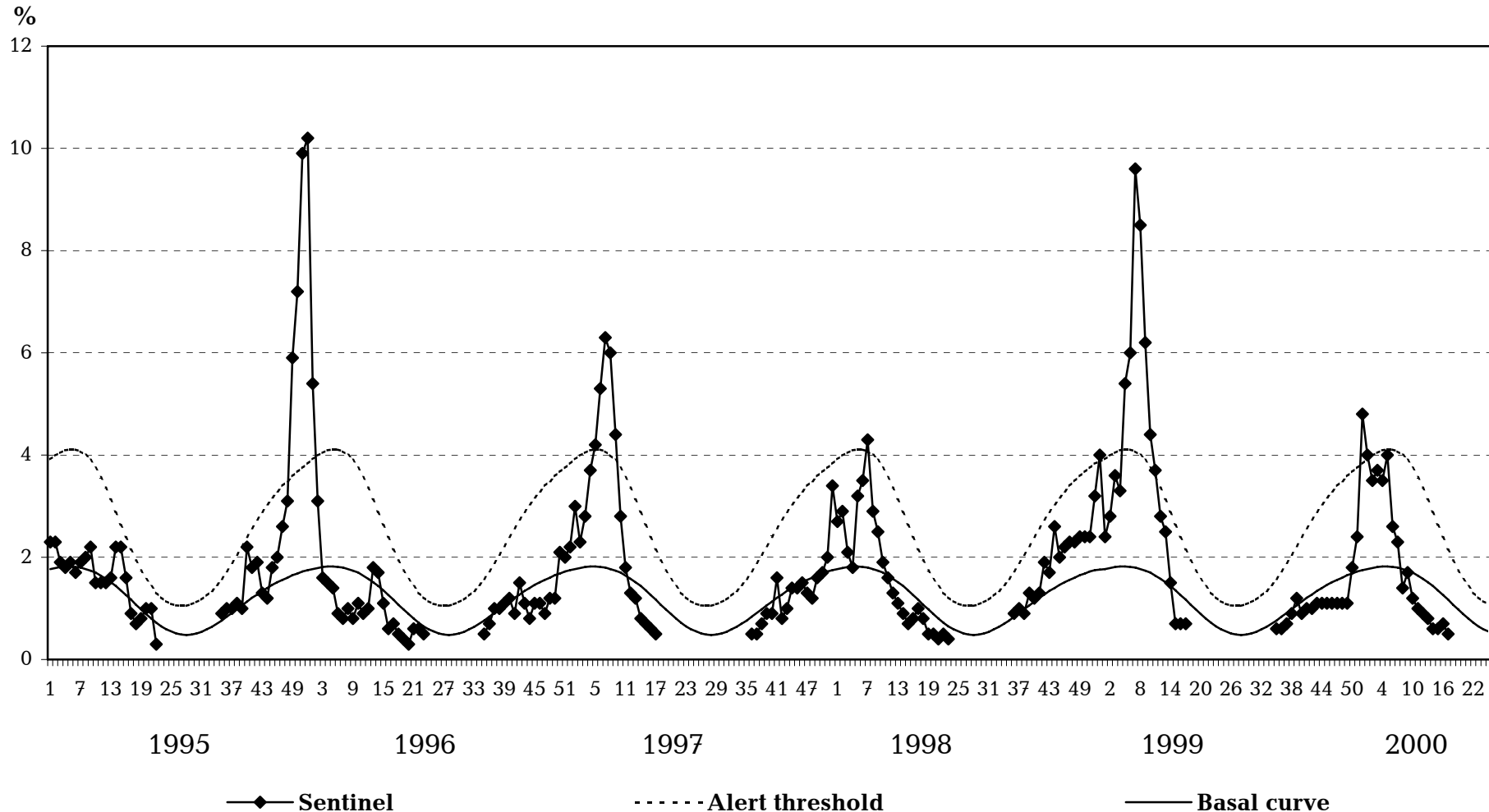
Sentinel surveillance is starting in week 40. Because of the running replacement of sentinel physicians there is still a need for new volunteers. Weekly reporting is by filling in a pre-printed, postage-free reporting card. One should expect to use about 10-15 minutes per week. (Klaus Bro-Jørgensen, Department of Medicine, Susanne Samuelsson, Department of Epidemiology)

27 September 2000



Influenza activity in sentinel surveillance

Weekly percentage of consultations 1995-2000



Sentinel:

Influenza consultations as % of total consultations

Alert threshold:

Possible incipient epidemic

Basal curve:

Expected frequency of influenza consultations under non-epidemic conditions