Arizona Department of Health Services

Division of Public Health Services

Office of Public Health Emergency Preparedness and Response

150 N. 18th Avenue, Suite 150
Phoenix, Arizona 85007
(602) 364-3289
(602) 364-3264 FAX

JANET NAPOLITANO, GOVERNOR
CATHERINE R. EDEN, DIRECTOR

October 19, 2004

Dear Health Care Provider:

The recent influenza vaccine shortage necessitates allocation to the patients who are most likely to die or be hospitalized from influenza. Rates of death and hospitalizations vary depending on age, underlying health conditions, and the populations being studied.

Physicians will need to prioritize based on the supply of vaccine, the risk factors of the individual patients, and vaccine efficacy. The following tables show some of the estimated rates of death and hospitalizations from influenza, as well as efficacy in selected groups (see MMWR May 28, 2004).

Deaths from Influenza		**Death rate / 100,000**
Pneumonia & Circulatory Deaths from Influenza	Age 0-49 years	0.4-0.6
	Age 50-64 years	7.5
	Age ≥ 65 years	98.3
Death from Influenza in AIDS Patients		94-146

Hospitalizations from Influenza			**Hospitalization / 100,000**
0-4 years	**High risk** medical conditions		500
	Without high risk medical conditions		100
Tennessee Study (1973-1993)	**High risk** medical conditions	0-11 months	1,900
	Without high risk medical conditions	0-5 months	1,038
		6-11 months	496
Health Maintenance Organization Study	≥ 65 years		399-518
	High risk medical conditions	45-64 years	392-635
		15-44 years	56-110
	Without high risk medical conditions	45-64 years	13-23
		15-44 years	23-25
Pregnancy	3rd trimester		250

Efficacy of influenza vaccine		**Efficacy**
Healthy adults < 65 years	Prevent influenza illness	70-90%
Children 1-15 years	Prevent respiratory disease	77-91%
Nursing home residents	Prevent influenza	30-40%
	Prevent hospitalization or pneumonia	50-60%
	Prevent death	80%
Elderly not in nursing homes	Prevent pneumonia & influenza	30-70%
HIV-infected*	CD4> 100 cells/µL & HIV load <30,000 RNA copies/mL	75%
	CD4<100 cells/µL	11%

*Clinical Infectious Diseases 2001; 32: 1784-1791

The CDC has published recommendations in the October 8, 2004 MMWR (See http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5339a6.htm) for the following priority groups:

- all children aged 6--23 months
- adults aged ≥65 years;
- persons aged 2--64 years with underlying chronic medical conditions
- all women who will be pregnant during the influenza season
- residents of nursing homes and long-term care facilities
- children aged 6 months--18 years on chronic aspirin therapy
- health-care workers involved in direct patient care and
- out-of-home caregivers and household contacts of children aged <6 months

The previous tables show that the elderly, AIDS patients, those with underlying medical conditions, and young children are the highest risk of **serious illness and death** from influenza. In addition, not all patients have optimal immunological responses to influenza vaccine. The CDC guidance states that all priority groups have *equal importance*. However, in instances where there is limited influenza vaccine for the priority groups, physicians should weigh risks and benefits in order to best protect the highest risk patients.

Questions have been asked as to which health care workers need to be immunized. The CDC has defined "**direct patient care**" as having **direct, hands-on, or face-to-face contact with patients as part of routine daily activities**. Therefore, workers in places such as primary care clinics and emergency departments would have higher priority than staff in administrative or lower patient contact positions.

Live attenuated influenza vaccine (LAIV), FluMist™, is an excellent alternative for healthy health care workers under 50 years of age who are unlikely to care for severely immunocompromised patients. This is because a recipient of LAIV should avoid caring for severely immunocompromised patients *while they require care in a protective environment* for 7 days after the health care worker receives LAIV.

Bacterial pneumonia is a serious complication of influenza. Providers need to make sure that patients over 65 years, the immunocompromised, and other high risk patients with diabetes mellitus, functional or anatomic asplenia, alcoholism, CSF leaks, or chronic cardiac, liver or pulmonary diseases are fully immunized against *Streptococcus pneumoniae* with either Pneumovax® or Prevnar®.

Health care workers can minimize their risk of influenza infection by proper infection control procedures. Avoid respiratory secretions of even seemingly healthy patients, and wear surgical masks within 3-6 feet of patients with respiratory symptoms. Provide masks to any patient with a febrile respiratory illness. Always wash your hands before and after every patient contact.

If your facility has more doses of influenza vaccine than can be used for high risk patients, please contact the Immunization Program Office of the Arizona Department of Health Services at (602) 364-3630.

Sincerely,

Karen Lewis, M.D.
Medical Director
Epidemiology and Disease Control

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