

Flu shot's vigour diminishes

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Flu season in Canada is kicking off with some troubling news: The vaccine will probably not be as effective as hoped because of mismatches between the strains the vaccine protects against and those actually circulating in the community.

The phenomenon, which is not unusual, occurs because influenza viruses mutate constantly.

Practically speaking, it means this year's flu vaccine may offer only 40 to 50 per cent protection.

Still, public health experts insist that some protection is better than none, especially for the elderly.

"Even though the virus has changed, the vaccine can still protect you," said Theresa Tam, director of the immunization and respiratory infections division of the Public Health Agency of Canada.

"If infection occurs, the vaccine can still reduce the severity of illness and the life-threatening complications."

The National Advisory Committee on Immunization recommends that everyone over the age of six months be vaccinated against influenza.

In healthy adults and older children, flu causes fever, cough, headache and muscle pain, which usually abates within four days. But among the frail elderly, young babies and those with compromised immune systems from chronic illness, such as heart disease or chronic obstructive pulmonary disease, the flu can be deadly.

Influenza and pneumonia, a common complication of the flu, killed 4,725 Canadians in 2002, the last year for which detailed statistics are available, according to Statistics Canada.

Last year, the flu was particularly mild in Canada. But that could change if a mismatched strain becomes the main strain circulating in the community, said Neil Rau, an infectious diseases specialist at Halton Healthcare Services in Oakville, Ont.

"The worst-case scenario with a bad match situation would be a lot of disease in the elderly manifesting in nursing homes, cruise ship outbreaks, and with children you might see a lot of school absenteeism and a lot of work trying to care for them," he said.

The influenza vaccine protects against three strains of the virus. This year they are A/Solomon Isl, A/Wisconsin and B/Malaysia.

But there is clear evidence that A/Wisconsin has already mutated and that B/Malaysia may be as

"It is never a question of a perfect match. It is never a question of 100 per cent efficacy, and for that also true," said Danuta Skowronski, a physician epidemiologist at the B.C. Centre for Disease Control in Vancouver.

Creating an effective flu vaccine is a challenge like shooting at a moving target. Public health experts determine, about six months in advance, which influenza viruses will be circulating in their countries.

Meanwhile, the viruses, which circulate around the world from the Southern to Northern Hemispheres and from West to East, reproduce sloppily, triggering slight changes in their genetic codes.

This movement, called antigenic drift, explains why flu vaccines change annually, and why there are sometimes

mismatches.

"It's the nature of the beast," Dr. Tam said. "Influenza viruses keep on changing so it is not unusual that the vaccine doesn't match precisely."

The good news for the public is that the genetic change, or drift, seems relatively small, meaning the vaccine will still offer partial protection against the mismatched strains.

The big fear of scientists is the arrival of a whole new virus that jumps directly from an animal, such as a pig or a bird, and which the human immune system has not seen before.

This new virus could cause a global flu pandemic, as occurred during the infamous 1918 Spanish flu that claimed about 50 million lives and, to a lesser extent, with the Asian flu in 1957 and the Hong Kong flu in 1968.

A pandemic form of influenza could kill as many as 58,000 Canadians, according to estimates from the Public Health Agency of Canada.

But even in a "normal" year, about one in five Canadian contracts influenza and thousands die.

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