

ON GUARD FOR THEE: SENTINEL PHYSICIANS ACROSS CANADA HELP TRACK FLU VIRUSES

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In the examining room of his Squamish, B.C., office, Dr. Ernest Ledgerwood takes a long-handled cotton swab, gently inserts it high into the nasal passage of his feverish patient's nose, gives the swab a little twirl, then pops the sample into a vial.

Off it goes by courier to a lab in Vancouver for influenza testing.

Halfway across the country in Mississauga, Ont., Dr. Donald Collins-Williams records the age of every patient he sees in his thriving practice, noting if any show signs of influenza-like illness.

He does this one day a week, then faxes in his report to the College of Family Physicians of Canada.

Meanwhile, at his practice in Calgary, Dr. Jim Dickinson is on the lookout for patients who report feeling generally lousy, have a runny nose, sore throat, cough or fever.

He'll take a throat swab and send it to the provincial virology laboratory at the city's Foothills Hospital for analysis.

All three docs are "sentinel physicians" -- front-line sleuths who gather medical information from the general population and feed it into a vast surveillance system that stalks the ever-morphing influenza virus around the globe.

"It's neat being a little cog in a larger wheel," says Ledgerwood, who's been a sentinel physician for 11 years, helping to track influenza and other viruses circulating in his community. "It's nice to know you're part of a worthwhile, ongoing project."

There are 202 volunteer sentinel physicians across Canada, says Jeannette Macey, a senior

epidemiologist with Health Canada's FluWatch program.

All are family physicians, workers in the trenches who monitor influenza-like illness in their communities and detect flu cases that may not show up at hospitals. Their swabs and reports help public health officials know when, where and which influenza viruses are circulating, and their severity.

B.C., Alberta and Saskatchewan have provincially run sentinel physician programs; in the rest of the country, sentinels are recruited by the College of Family Physicians of Canada on behalf of the federal government.

"We need to have as many sentinels as possible because our objective is to have at least one sentinel per 250,000 of the (Canadian) population," says Macey. "We're actually doing better than that, getting close to one per 150,000."

Sentinels are but one part of the massive network of intelligence gathering in the war on flu, says Aleina Tweed, a surveillance epidemiologist with the British Columbia Centre for Disease Control. The network involves local, provincial, national and international bodies.

In B.C, Tweed explains, flu surveillance goes something like this:

In addition to receiving weekly reports from 43 sentinel docs across the province, the BCCDC collects information from local public health units which note absentee rates of 10 per cent or more in schools and workplaces, and track outbreaks of influenza-like illness seen in hospitals and long-term care facilities. It also gets flu reports from provincial and federal laboratories and reports its findings to Health Canada.

In turn, Health Canada gathers similar reports from each province and forwards a communique of its own to the World Health Organization's Global Influenza Surveillance Network -- which consists of 112 national influenza centres in 83 countries.

The WHO then comes up with a best guess as to what's going to be coming around for the flu season in the northern hemisphere. The same happens for the southern hemisphere.

Over the spring and summer months, vaccines are made to deal with the strains thought to pose the greatest problems, says Tweed.

That's done by growing virus strains on fertilized chicken's eggs, killing the virus and then harvesting the antigens. The vaccine works by stimulating the body to produce antibodies to work against the inactivated virus in the vaccine. Once people get the real virus, the antibodies fight off or reduce infection.

This year's vaccine protects against three strains of influenza: A-Panama, A-New Caledonia and either B-Hong Kong or B-Shangdong.

But a new strain, A-Fujian is responsible for about 87 per cent of the influenza A viruses now circulating in the country, says Macey.

"We haven't seen any of the influenza B viruses yet this year."

However, because A-Fujian is a "drifted strain" or close relative of the A/Panama influenza virus, the vaccine does offer some protection.

"We expect it provides some cross-protection against the A-Fujian based on the similarity between those two strains. It either will prevent some infections or at least reduce the severity of the illness."

Front-line physicians such as Ledgerwood will monitor how A-Fujian unfolds in the community. One of the benefits of being a sentinel, he says, is being plugged into the information network.

"You can see where the trends are and what virus you're dealing with," he says, adding early identification allows for quick action to control the spread of flu.

"It tends to put you half-a-step ahead."

Flu surveillance has traditionally been done every flu season from October to May, but last year FluWatch asked its sentinels to begin year-round monitoring.

Alberta is also moving to watching viruses 52 weeks of the year.

"There are reports of flu epidemics occurring in summer as well and it is also influenced by the fact we have new diseases like SARS," says Dickinson who, as well as working as a sentinel physician, heads the province's consortium of sentinel docs under a program called the Tarrant Viral Watch.

"Keeping an eye on the emerging viral conditions and influenza-like illness throughout the year is a good thing to do," adds Dr. Nicholas Bayliss, provincial health officer for Alberta Health and Wellness.

"SARS was a good example of why we need to strengthen our public health systems and why we need as good a surveillance system as we can possibly have."

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Illustration:

• Colour Photo: Lorraine Hjalte, Calgary Herald / Dr. James Dickinson of Calgary takes a close look at the throat of June Cooper. Medical information from dozens of front-line sources is analysed constantly for emerging flu trends.

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