

## Swine-origin influenza virus: What the clinician needs to know

**Greg Deans, MD, David Patrick, MD, FRCPC, Danuta Skowronski, MD, FRCPC, Bonnie Henry, MD, FRCPC**

In April 2009, clusters of severe respiratory illness in Mexico and sporadic cases of more typical influenza illness were identified in California and Texas due to a novel influenza A H1N1 (human swine) strain. This virus is composed of a complex reassortment of genes from human, avian, and swine influenza.<sup>1</sup> In the weeks after swine-origin influenza virus (S-OIV) was first recognized, an increasing number of cases were reported throughout North America and subsequently elsewhere around the globe.

Illness due to S-OIV was noted predominantly in children and young adults, with more severe manifestations compared with the elderly.<sup>2,3</sup> In the United States, people over the age of 50 years have made up only 5% of confirmed cases,<sup>3</sup> suggesting the possibility of cross-immunity among older adults from prior influenza exposure.

Although swine are believed to be the original source of the virus, the virus has acquired the ability to spread readily from person to person. Further monitoring is required to fully understand its evolving clinical and transmission parameters, but S-OIV is recognized like all influenza viruses to be primarily transmitted by droplets from coughing and sneezing. Infection may also be transmitted indirectly through contact with contaminated surfaces

followed by inoculation of mucous membranes. Infection is not transmitted by eating or preparing pork.

Most patients with S-OIV develop an influenza-like illness (ILI) that includes a spectrum with fever, cough, malaise, headache, and sore throat; vomiting and diarrhea may also accompany these symptoms, particularly in

**There is currently no vaccine against S-OIV but development of the seed strain required for vaccine production is underway.**

children.<sup>3</sup> Fever may not always be prominent. As with seasonal influenza, there may be an increased risk of influenza-related complications among young children, people over the age of 65, pregnant women, and people with chronic medical conditions.<sup>4</sup>

Proper infection prevention and control measures are essential when dealing with patients with ILI. When possible, they should be triaged to a time of day when the waiting area is less crowded. They should clean their hands with alcohol-based hand-rub on arrival and after coughing. When coughing, cover the nose and mouth with a clean tissue that is discarded immediately after use or, preferably, cough/sneeze into the crook of the elbow sleeve rather than the hands. Symptomatic patients should also wear surgical masks if they are able and should be seated at least 2 m from others; if this is not possible then they should be placed in an exam room immediately to reduce transmission in the waiting area. Clinicians in contact

with people with ILI should perform hand hygiene and put on gloves, masks, and eye or face protection. An N95 respirator is only recommended during aerosol-generating medical procedures or in the rare instance when a patient is coughing forcefully and not able to wear a surgical mask or use tissue to cover his or her cough.<sup>5</sup>

Patients with mild ILI can be managed without diagnostic testing and in most cases do not require antiviral therapy. They should stay home from work and school until 7 days after symptom onset and should be instructed to maintain strict hand and respiratory hygiene practices as noted above.

In cases of moderate to severe respiratory illness, diagnostic testing for S-OIV is indicated; in these patients, a nasopharyngeal swab should be submitted for testing.<sup>6</sup> Antiviral therapy is indicated for patients with severe illness and those at high risk of influenza complications. S-OIV is currently susceptible to the neuraminidase inhibitors oseltamivir and zanamivir but is resistant to amantadine. Antivirals can reduce the severity of illness and the risk of complications but are most effective when initiated within the first 48 hours after symptom onset.<sup>5</sup>

There is currently no vaccine against S-OIV but development of the seed strain required for vaccine production is underway. The seasonal influenza vaccine is unlikely to provide protection against S-OIV. However, annual seasonal influenza vaccination is still important for health care providers and people in high-risk groups because influenza remains an important cause of morbidity and mortality. Pneumococcal vaccine should also be encouraged in high-risk groups to reduce the risk of bacterial superinfection.

*Continued on page 273*

Dr Deans is an infectious diseases fellow at the University of British Columbia. Drs Patrick, Skowronski, and Henry are physician epidemiologists with epidemiology services at the BC Centre for Disease Control and faculty with the School of Population and Public Health at UBC.

## miscellaneous

### BILLING SOFTWARE—\$199

It's true. Windows XP Practice Software, \$199 per computer. Klinix Assess. You get the complete software package of billing, scheduling, and medical records plus product support and updates for an annual licence fee of \$199 per computer. Your satisfaction guaranteed in the first 120 days or return Klinix Assess for your money back. No fine print. Demos at [www.klinix.com](http://www.klinix.com). Toll free 1 877 SAVE-199.

### BILLING SUPPORT

MedBill Billing Services is an independent medical billing provider. We take care of your business and follow up on rejected claims at no additional charge. Reasonable rates. For more information call 604 947-2166 or toll free 877 933-BILL (2455).

### PATIENT RECORD STORAGE—FREE

Retiring, moving, or closing your family or general practice? DOCUdavit Medical Solutions provides free patient record storage with no hidden costs. Contact Sid Soil at DOCUdavit Solutions today at 1 888 781-9083, ext. 105 or e-mail [ssoil@docudavit.com](mailto:ssoil@docudavit.com). We also provide great rates for closing specialists.

### MEDICAL TRANSCRIPTION

Digital medical transcription services by experienced medical dictatypist. Honors graduate. Voice recognition editing and formatting. Can incorporate written revisions. Stat service on request. Internet communication allows province-wide service. Payment by line or by hour. Contact Janet at 604 277-1858 or [reachjanet@shaw.ca](mailto:reachjanet@shaw.ca) for further details.

### BOOKKEEPING & PAYROLL

Many medical offices struggle to keep up-to-date with their financial records and feel their time would be better spent carrying out their main business activity. We provide bookkeeping, payroll and benefits, and budgeting services. We are not an accounting firm and are not meant to replace your accountant. We can reduce your year-end costs by inputting and preparing the data your accountant requires at a fraction of your accountant's fee. Vancouver and Richmond area. Contact Janet at 604 277-1858 or [reachjanet@shaw.ca](mailto:reachjanet@shaw.ca) for further details.

### HOME BUILDING & RENOVATIONS

Odenza Homes Ltd. builds new homes and does major renovations. Get the home you want—brand new homes and plans available from \$150/sq. ft. or renovate your existing home to add more space or just upgrade your space. Whether a starter home or your dream home with all the bells and whistles, we can handle the job from start to finish. We build homes in the greater Vancouver area only. Ask for Sodi Hundal at 604 805-7001 or visit our web site at [www.odenzahomes.com](http://www.odenzahomes.com).

*Continued from page 257*

As the novel strain of S-OIV continues to circulate, only time will tell how it may evolve. Activity in the southern hemisphere's influenza season, occurring during our summer months, may provide an indication of what to expect. Influenza viruses are unpredictable and S-OIV may undergo further mutation. In BC, ongoing surveillance, including monitoring for severe respiratory illness, should help us detect changes as early as possible. Updated information on S-OIV can be found on the BC CDC web site ([www.bccdc.ca](http://www.bccdc.ca)).

### References

1. CDC. Update: Swine influenza A (H1N1) infections—California and Texas, April 2009. *MMWR Morb Mortal Wkly Rep* 2009;58:435-437.
2. Public Health Agency of Canada. Cases of H1N1 in Canada. [www.phac-aspc.gc.ca/alert-alerse/swine-porcine/surveillance-eng.php](http://www.phac-aspc.gc.ca/alert-alerse/swine-porcine/surveillance-eng.php) (accessed 20 May 2009).
3. Novel Swine-Origin Influenza A (H1N1) Virus Investigation Team. Emergence of a novel swine-origin influenza A (H1N1) virus in humans. *N Engl J Med* 2009;361.
4. Public Health Agency of Canada. Interim guidance for clinicians in ambulatory care settings. [www.phac-aspc.gc.ca/alert-alerse/swine-porcine/hp-ps-info\\_amb-eng.php](http://www.phac-aspc.gc.ca/alert-alerse/swine-porcine/hp-ps-info_amb-eng.php) (accessed 20 May 2009).
5. Public Health Agency of Canada. Interim guidance: infection prevention and control measures for health care workers in acute care facilities. [www.phac-aspc.gc.ca/alert-alerse/swine-porcine/guidance-orientation-ipc-eng.php](http://www.phac-aspc.gc.ca/alert-alerse/swine-porcine/guidance-orientation-ipc-eng.php) (accessed 20 May 2009).
6. British Columbia Centre for Disease Control. Lab guidelines for swine influenza. [www.bccdc.org/content.php?item=497](http://www.bccdc.org/content.php?item=497) (accessed 20 May 2009).



## 'Namgis Health Centre Alert Bay, BC PHYSICIAN

Is the stress of fee-for-service medicine getting you down? Are you tired of rising overhead and constantly changing billing rules? Would you like to spend more time with your patients? If so, we offer you an alternative in beautiful coastal British Columbia.

The 'Namgis Health Centre is seeking a physician to work with our interdisciplinary health centre team. The work includes outpatient clinic services, emergency/inpatient care at the hospital, and teaching. Electronic medical records and various other electronic records are used by both the clinic and hospital.

The 'Namgis Health Centre, a modern facility with 48 staff, offers a range of health and social services. Staff include physicians, nurses, mental health counselors, a dentist, indigenous community health representatives, substance abuse counselors, and a range of other social providers.

The Cormorant Island Health Centre is a hospital with the call equally shared by all community physicians. The hospital has an emergency room, four acute care beds, 10 extended care beds.

Alert Bay has a population of 1500 (Aboriginal and non-Aboriginal). Located in the Johnstone Strait, off the northeast tip of Vancouver Island, we offer some of the world's best fishing, whale watching, kayaking, and other outdoor pursuits. The community has long been a centre for Aboriginal arts and culture ([www.namgis.bc.ca](http://www.namgis.bc.ca)).

A very generous salary and after-hours compensation are offered, with no overhead costs. Competitive educational leave and vacation benefits. May be eligible for Rural Subsidiary Agreement, including retention premium and a retention flat fee, recruitment incentive, and additional CME benefits.

Applicants must be eligible for licensure with the BC College of Physicians and Surgeons. CMPA membership is mandatory; ACLS and emergency experience desired.

**For more information contact  
Physician's Office, PO Box 49,  
Alert Bay, BC, V0N 1A0.  
Phone 250 974-2459, Fax 250 974-5952,  
Cell 250 974-8378.**