Sullivan Nicolaides PATHOLOGY

Human Pandemic H1N1 2009 Update September 2009

This year's winter influenza season now appears to be on the wane. To date Sullivan Nicolaides Pathology (SNP) has tested over 38 000 specimens by PCR for influenza A and B and diagnosed over 8 400 patients with influenza A (Figure 1 and Figure 2). This represents almost 20% of the total number of notifications for influenza A nationally. Activity peaked in mid July (week 30) when the percentage positivity for influenza A for all specimens tested was 36.3%. Currently the percentage positivity is 5.3% (Figure 2).

Within weeks of its appearance SNP developed a specific assay for the Human Pandemic H1N1 2009 subtype of influenza A and those that were influenza A positive and Human Pandemic H1N1 2009 subtype negative were referred to the Queensland Health Influenza Reference Laboratory for further subtyping. Currently almost 100% of positive influenza A specimens are Human Pandemic H1N1 2009 positive (Figure 3). There is occasional detection of Seasonal H3 Influenza. In 3 patients dual infections with H1/ Human Pandemic H1NI 2009 or H3/ Human Pandemic H1NI 2009 have been detected. Influenza B activity has been very limited with only 25 notifications for the year to date.

Current collection recommendations

We continue to recommend a single flocked swab passed deep into the nasopharynx bilaterally together with a throat swab. These specimens are combined in the laboratory. We are investigating whether the collection can be simplified to one swab.

New testing recommendations

Now that the huge demand for testing has abated the current recommendations to limit testing to particular at risk groups, namely pregnant women, health care workers and hospitalized patients can be lifted. The laboratory is able to test any patients with an influenza like illness (ILI) as clinically indicated. In addition the full respiratory virus testing panel will resume. This includes influenza A, influenza B, Respiratory Syncytial Virus, Parainfluenza 123, Human metapneumovirus and Rhinovirus. Influenza A positive samples will continue to be subtyped for Human Pandemic H1N1 2009 and negative samples referred for further testing.

The relatively poor performance of the rapid antigen detection kits (Influenza A and Influenza B) means that the use of this supplementary test is discouraged. The sensitivity and specificity for influenza A direct antigen kits was 60.9% and 99.6% respectively.

Expected turnaround times

PCR tests are batched and run daily Monday to Friday. For the next month or so a Saturday run will continue to be offered. The expected turnaround time is therefore 24-48 hours.

Monitoring Oseltamivir resistance

A sample of Influenza A specimens will be sent to the WHO Reference Laboratory in Melbourne to monitor the development of mutations in Human Pandemic H1NI 2009 which confer resistance to this Neuraminidase inhibitor. There have been a handful of such isolates around the world to date unlike the situation for usual season H1N1 which in the winter of 2008 was almost 100% resistant. A single oseltamivir resistant strain has been identified in Western Australia although no secondary transmission has been demonstrated. All resistant isolates to date carry the mutation H275Y that confers resistance to oseltamivir but not zanamivir.

Vaccination Programme

Monovalent Pandemic H1N1 Influenza A vaccine is now available and will initially be targeting the at risk groups. Those patients that have had a laboratory confirmed case of Pandemic H1N1 Influenza A need not be vaccinated. It is recommended for other patients where the clinical diagnosis was made without laboratory confirmation that the vaccine still be given.

Any queries please contact the Microbiologists on (07) 33778534.

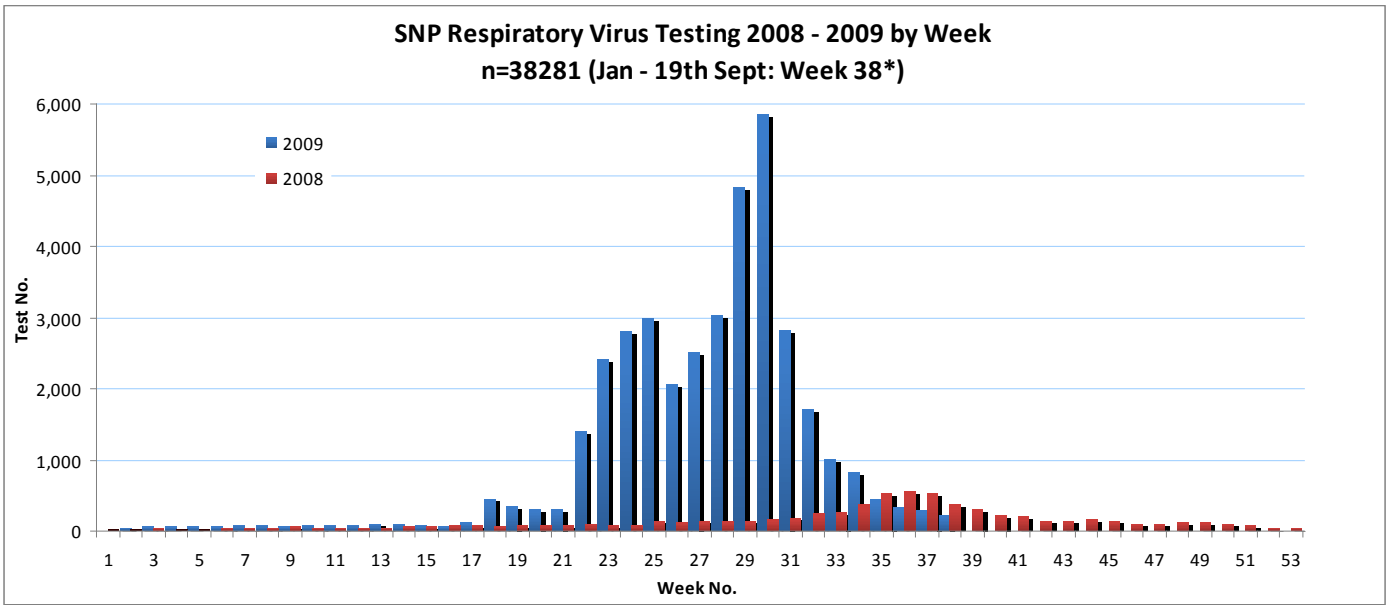

FIGURE 1

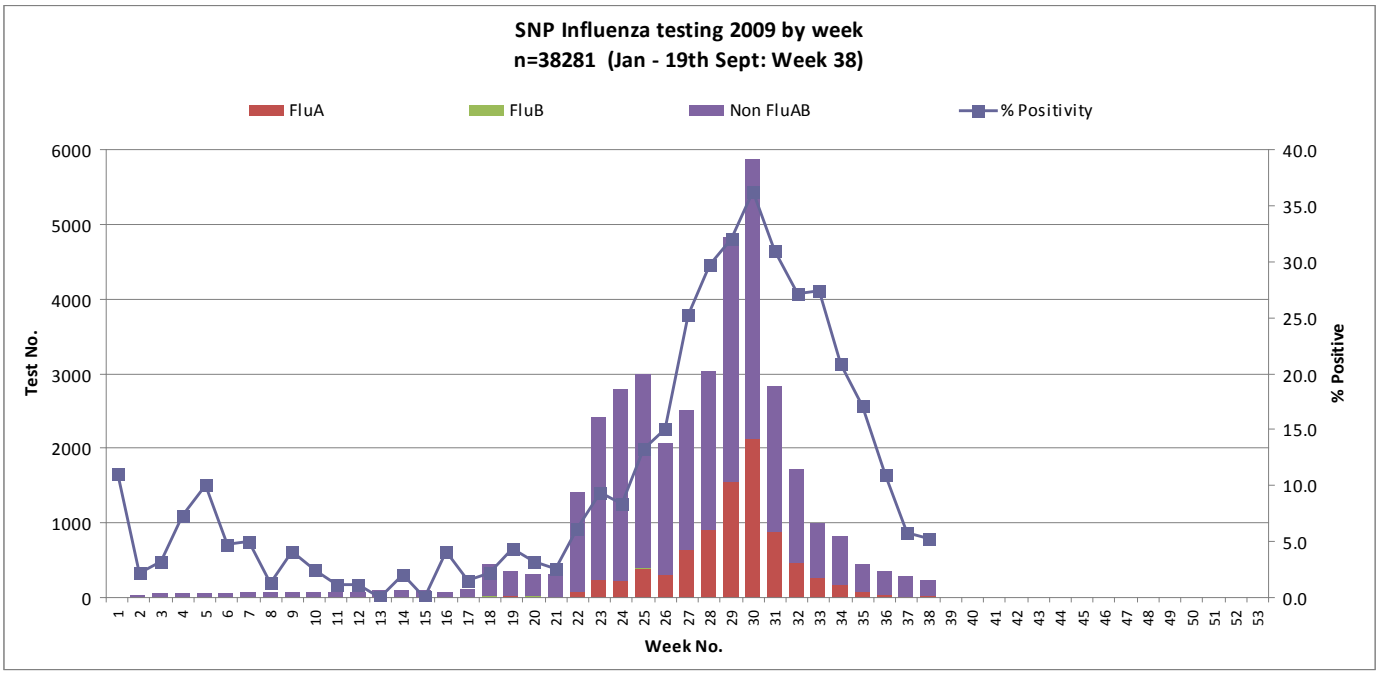

FIGURE 2

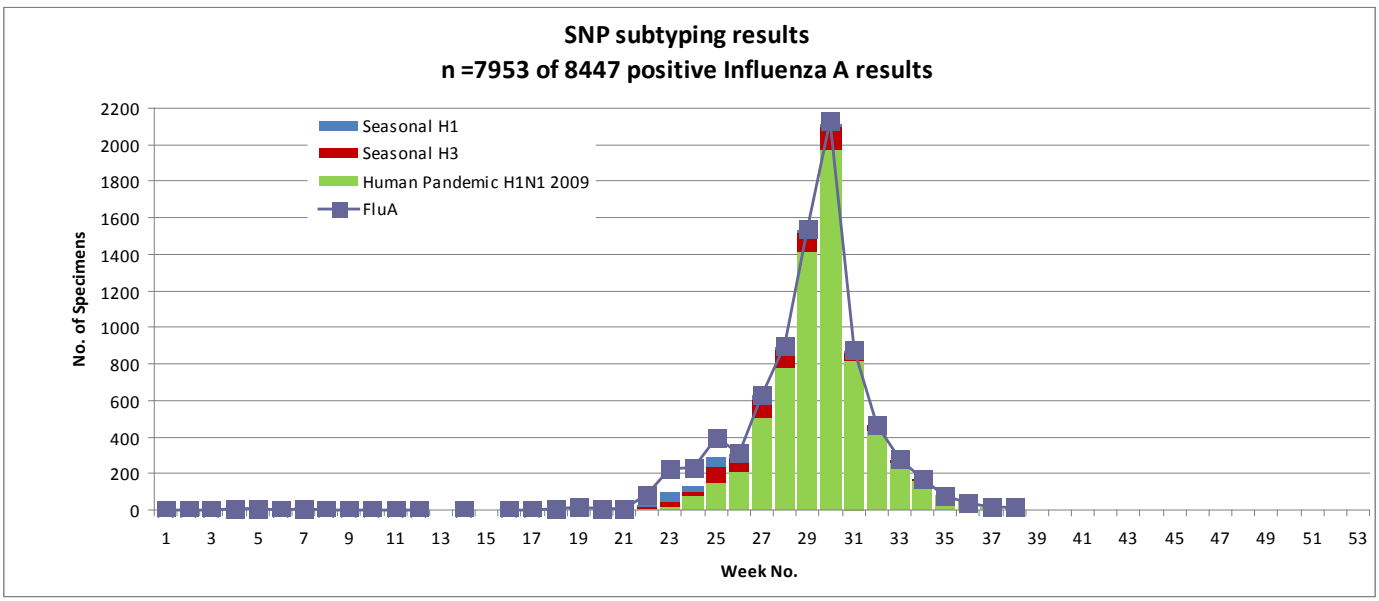

FIGURE 3