

"Novel" A(H1N1) influenza situation, New York, USA

05 May 2009

1. INTRODUCTION

An epidemic has been documented at the end of April 2009 in a private secondary school located in Queens, New York City (NYC), New York (NY). Available data suggest that the epidemic is caused by a Novel strain of A(H1N1) which has spread secondarily to the community in NY State, USA.

2. DATA ON THE NOVEL A(H1N1) STRAIN IN THE USA

- As of 05/05/09, a total of 465 confirmed human cases of infection by the novel strain of A(H1N1) influenza virus (including 1 death) has been documented in 38 States of the USA, including NY State (cf. Figure 1).
- The epidemic by this new strain of A(H1N1) influenza virus has been detected in the USA where the first diagnosis was confirmed on 15/04.
- In NY State, the first cases were reported on 26/04.

3. SITUATION IN THE STATE OF NEW YORK

- As of 05/05/09, a total of 73 cases have been confirmed in NYC and 17 other cases have been confirmed elsewhere in the State of NY according to NY State health authorities (cf. Figure 2).
- The first cases were diagnosed in NY and occurred among students of Saint Francis preparatory (Secondary) School, Queens, NYC, NY.
- On 23/04/09 NYC health authorities were informed of about 100 cases of uncomplicated respiratory infections in this school.
- In the days which followed, students from various schools in New York tested positive for seasonal influenza.
- St Francis Preparatory School was closed down on 27/04 and reopened on 04/05/09.

Figure 1: Cumulative number of confirmed human cases of infection by the new A(H1N1) virus in the USA (State of New York and other States), data to 05/05/09 (source: CDC and Depts of Health).

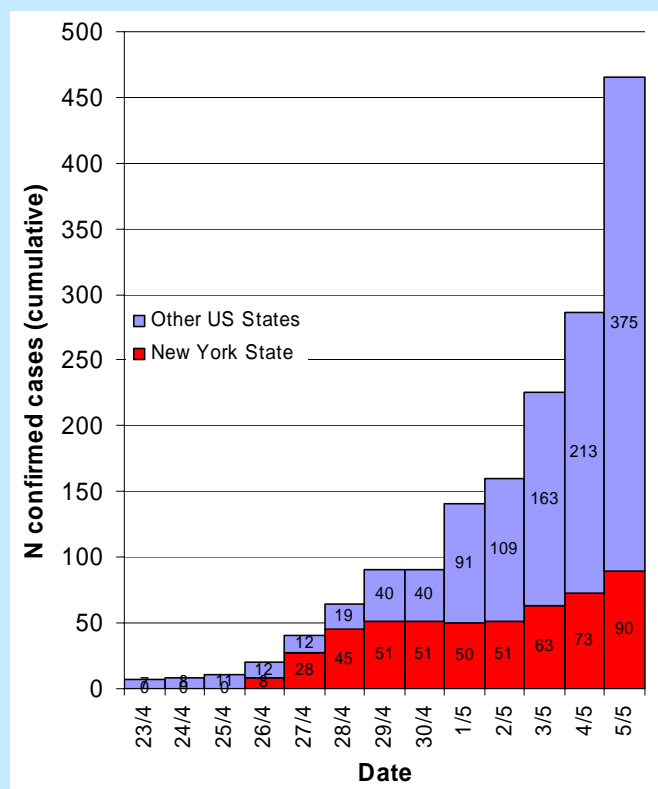
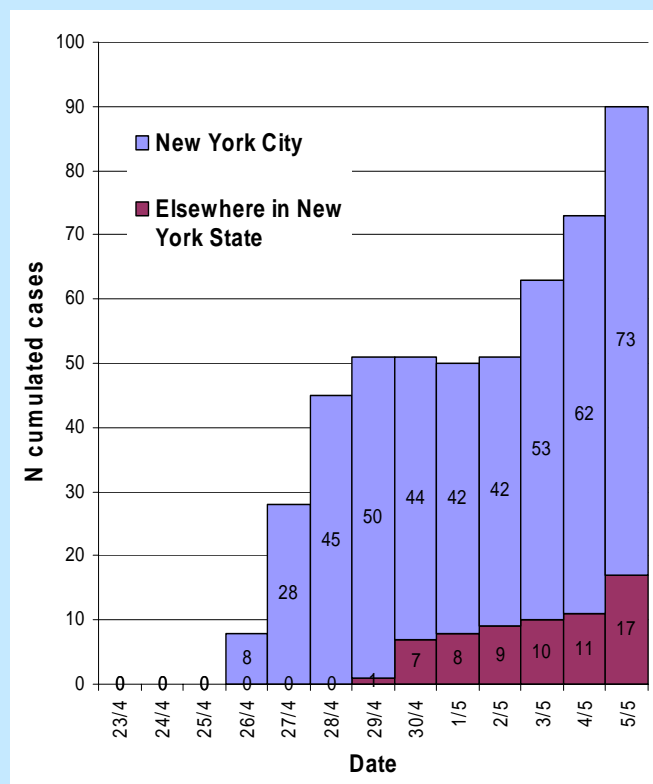


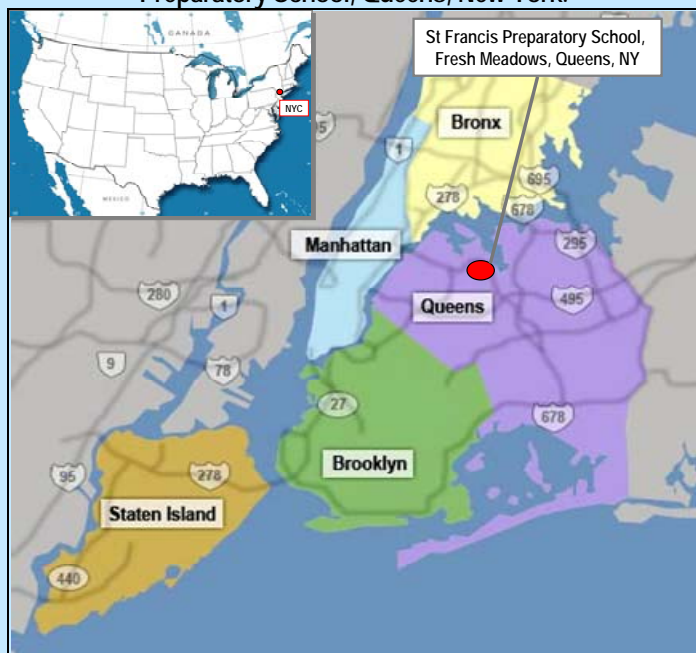
Figure 2: Cumulative number of confirmed human cases of infection by the new A(H1N1) virus by notification date in New York State (New York City and elsewhere), data to 05/05/09 (source: NY Dept of Health).



The Saint-Francis Prep School Survey (29/04/09)

- The New York Department of Health carried out an [investigation](#) in New York on 29/04 among Saint Francis Preparatory School students and staff (cf. Figure 3).
- There are 2686 students and 228 staff (teaching and other) in this secondary school in Queens, NYC.

Figure 3: New York City “Boroughs” and location of Saint Francis Preparatory School, Queens, New York.

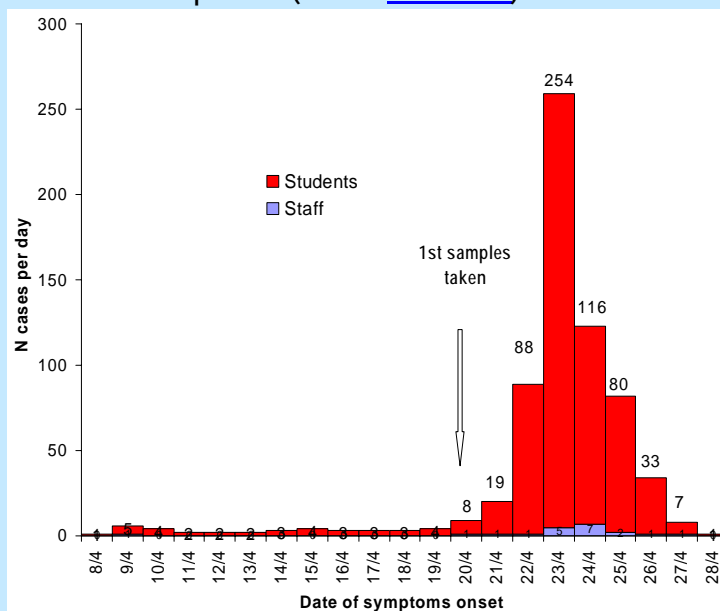


- A total of 1966 students (74% of the overall student population) and 210 staff (94% of all staff) were investigated Table 1 and Figure 4).

Table 1: Summary of St Francis study findings, April 2009 (source: [NYC DHMH](#)).

	STUDENTS	STAFF
Total interviewed	1966	210
Symptomatic	659 (33%)	23 (11%)
Symp. period (dates)	22-25 /05	23-25 /05
Nb with symptoms at peak day	538 (82%)	14 (61%)
Travel abroad	140 (21%)	11 (48%)
History of travel to Mexico	6	1
Contact investigation (N family members of symptomatic interviewees)	6024	663
Number of symptomatic interviewees who said family members had developed signs since 08/04/09	190 (29%)	4 (17%)
Number of family members with symptoms on the study date	462 (58%)	28 (4%)

Figure 4: Epidemic curve and attack rate, St Francis study, April 2009 (source: [NYC DHMH](#)).



Biological Testing (source [CDC](#))

- Virological testing was carried out in symptomatic students and staff starting 24/04. In all, 44 of 51 samples (86%) were positive for the new strain of Influenza A(H1N1) virus (43 students and one staff).
- None of these 44 cases had travelled to California, Texas or Mexico.

Clinical presentation (source [CDC](#))

- On 27/04/09 health authorities interviewed the 44 confirmed A(H1N1) cases by telephone..
- Median age was 15 years (range 14-21 years) and 70% were female.
- The date of symptoms onset ranged from 20 to 24/04/09: 10 (23%) of these 44 cases began their symptoms on 22/04 and 28 (64%) on 23/04.
- Symptoms are summarised in Table 2.

Table 2 Clinical description of cases (% , number)

Clinical signs	%	N
Cough	98	43
Fever	95	42
Headache	82	36
Pharyngitis, nasal discharge, shivering	82	36
Muscle pain	80	35
Nausea	55	24
Abdominal pain	50	22
Diarrhoea, dyspnoea	48	21
Joint pain	46	20

4. SITUATION UPDATE

- A dozen students from a nearby secondary school in Queens, NY, have since developed signs compatible with infection by the new A(H1N1) influenza strain₂

and are considered probable or are being investigated.

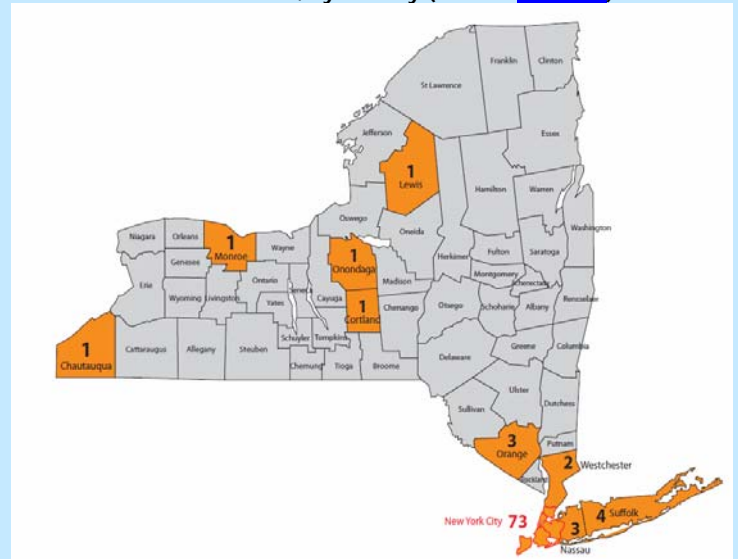
- Cases of seasonal influenza have also been identified in other NYC schools.
- Saint Francis reopened on 04/05. Several other NY schools, however, have since been temporarily closed.
- On 04/05/09, NY State health authorities notified 17 new confirmed human cases of infection by the new A(H1N1) influenza strain (Figures 2 and 5).
- Among these new cases, several had epidemiological links with St Francis Preparatory School and others had links with Mexico (see Table 3)..
- At least two of these cases, however, was associated neither with St Francis nor with Mexico.

Table 3: Detail of available data for confirmed A(H1N1) cases in NYC to 04/05/09 (Source [NYC DHMH](#))

Cases	Confirmed	Probable
Total cases to 05/05/09	73	6
Cases linked to identified outbreaks		
Mexico	2	0
St. Francis School	69	5
No link to identified clusters	2	1
Ongoing investigation	0	0
Severe cases	0	0
Deaths	0	0

- Cases imported from New York to other countries
 - ✓ Danish health authorities reported a confirmed case in a Danish tourist who returned from New York. She had visited Manhattan and Queens. She stayed in NY from 22 to 28/04 and developed signs on her return to Denmark on 28/04.
 - ✓ Another case has been notified by UK health authorities on 03/05 in a child living in London.
- To date, no death has been attributed to infection with the new A(H1N1) influenza strain in New York.

Figure 5: Confirmed Novel A(H1N1) cases to 04/05/09 in the State of New York, by County (Source [NY DOH](#))



5. COMMENTS

The viral strains implicated in the current outbreaks in Mexico and in the USA are considered to be the same. There is therefore an established epidemiological link between the two, although the chronology of events remains to be fully documented.

These are the first structured epidemiological and clinical data available on human infections with the new A(H1N1) influenza strain in the USA. The Centers for Disease Control and Prevention qualify the St Francis Preparatory School outbreak as the single most important cluster of cases documented to date. If we consider that this outbreak is due only to a single pathogen (the new A(H1N1) influenza strain), over a period of a few days, an attack rate of around 33% shows that person-to-person transmission of this virus is highly efficient in a fully susceptible community. Among the 682 affected students and staff of St Francis Preparatory School, however, no severe form of disease has been documented.

A laboratory in the State of New York has been confirmed by the CDC in Atlanta on 04/05/09 as a reference centre capable of carrying out confirmation testing. Following a period of apparent stability due to a decrease in testing during the week-end period (1st – 3 May), an increase in retrospectively and/or prospectively confirmed cases among residents of New York City and State is to be expected.

Other cases in NYC and elsewhere in NY State have links with this documented outbreak. At least two cases have been imported to European countries (in Denmark and in the United Kingdom) following travel to New York City, without any established link with the St Francis Preparatory School outbreak.

Several European countries such as the UK and Ireland have included New York (alongside Mexico) in their definition of suspect cases to be tested in case they present signs of influenza-like illness.

The virus is transmissible and the outbreak occurred in a secondary school. There are therefore reasons to believe that the new strain of A(H1N1) influenza is progressing in the

community despite the extensive efforts to document and control this outbreak in New York.

To date, there have been no severe form of infection due to this new A(H1N1) influenza strain in New York City of New York State.