

# A FEW CONSIDERATIONS AT THE END OF THE A H1N1 INFLUENZA PANDEMIC IN IASI COUNTY

## *Câteva observații la finalul gripei pandemice H1N1 în județul Iași*

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### ABSTRACT

The purpose of this paper was to analyze the activity of the AH1N1 influenza virus and the specific prophylactic measures taken in Iasi County, at the end of the 2009-2010 flu season. An accurate estimate of the number of affected persons was difficult to achieve; 352 cases were etiologically confirmed, most of whom were adults (73.5%). The vaccination campaign had not a linear evolution, as it started slowly, among healthcare workers, and it peaked during the first weeks of January, when the vaccination centers in hospitals were under siege. A total of 75,959 people were inoculated, that is 9.2% of the population (11.4% of those over 16 years of age). The development of this vaccination campaign and people's reaction to it confirm the presence and importance of an epidemiology of collective emotions linked to the disease, which is different from that of the disease itself.

**Key words:** AH1N1 influenza virus, prophylactic measures

### REZUMAT

Scopul acestei lucrări a fost să analizeze activitatea virusului gripal AH1N1 și a măsurilor profilactice specifice luate în județul Iași în timpul sezonului gripal de la sfârșitul anului 2009-2010. A fost greu de obținut o estimare exactă a numărului persoanelor afectate; 352 de cazuri au fost confirmate etiologic, majoritatea dintre ele fiind adulți (73, 5%). Campania de vaccinare nu a avut o evoluție lineară, debutând lent printre asistenții medicali și a ajuns la un maxim în primele săptămâni din ianuarie, când centrele de vaccinare din spitale au fost asediate. Un total de 75959 de oameni au fost injectați, ceea ce înseamnă 9,2% din populație (11,4 dintre cei peste 16 ani). Dezvoltarea acestei campanii de vaccinare și reacția oamenilor la aceasta confirmă prezența și importanța unei epidemiologii de emoții colective legate de boală, ceea ce este diferit față de boala în sine.

**Cuvinte cheie:** virus gripal AH1N1, măsuri profilactice

On August the 10<sup>th</sup> this year, the WHO proclaimed the end of the AH1N1 influenza pandemic, the beginning of which may be traced back to the spring of 2009. It affected most of the countries worldwide and generated endless medical, economic and administrative debates.

An accurate estimate of the actual number of A H1N1 influenza cases is no easy target, since the official numbers tackle mainly the patients whose

infection was confirmed by laboratory tests. They therefore fail to include those who did not undergo etiological investigations, on financial administrative or logistic grounds, although they went to the hospital and had symptoms resembling those of H1N1 influenza. A possibly even higher number of patients with influenza-like symptoms decided not to see a doctor and preferred self-treatment, due to the lower severity of their disease or to their fears

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related to possible quarantine or restrictive measures taken against patients suspicious for H1N1 influenza, especially at the beginning of the pandemic. It was this population group that significantly contributed to the spreading of the infection within the population, as they were the least compliant to the doctors' orders.

According to the WHO's reports, on August 6 2010, there were 491.382 confirmed cases of A H1N1 influenza in the 214 countries where the disease occurred and a number of 18,449 deaths. These make up 77.6% of the whole number of influenza cases reported starting with April 2009. (1,6).

In Europe (5), 146.411 confirmed cases of A H1N1 influenza were reported starting with the 40<sup>th</sup> week of the year 2009 to date and 4.670 deaths from the beginning of the pandemic. Mortality rate estimates revealed an average number of deaths of

5.1/10<sup>6</sup> persons in Europe and 5.8/10<sup>6</sup> persons in Romania. (7) Considering that the actual number of cases was much higher, and that most of the severe, possibly death-causing cases underwent etiological investigations, infection mortality may be, in fact, significantly lower.

The Romanian Minister of Health responded promptly to the pandemic threat, in April 2009, as he notified the entire network of infectious disease and epidemiology specialists, as he drafted emergency response plans, prepared reserves of antiviral drugs and postponed scientific events. However, the first case of influenza in Romania was reported only on May 27, and so far as June in Iasi County.

7,008 confirmed cases were reported nationally by the end of the pandemic, of which 128 deaths (1.8% fatality rate). The last case was confirmed in April 2010. (3)

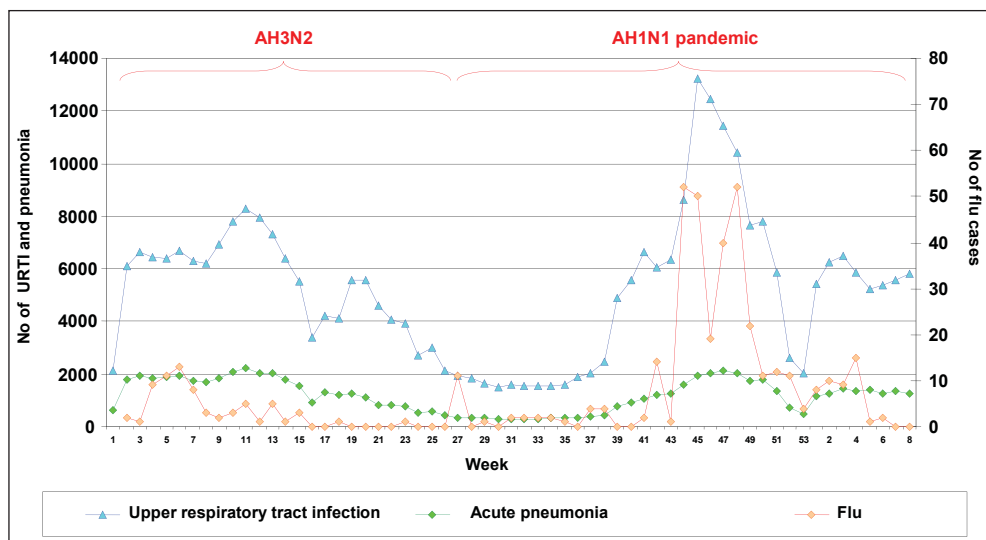


FIGURE 1. Weekly evolution of upper respiratory tract infection, acute pneumonia and flu cases in Iasi County, between October 1, 2009 and February 28, 2010

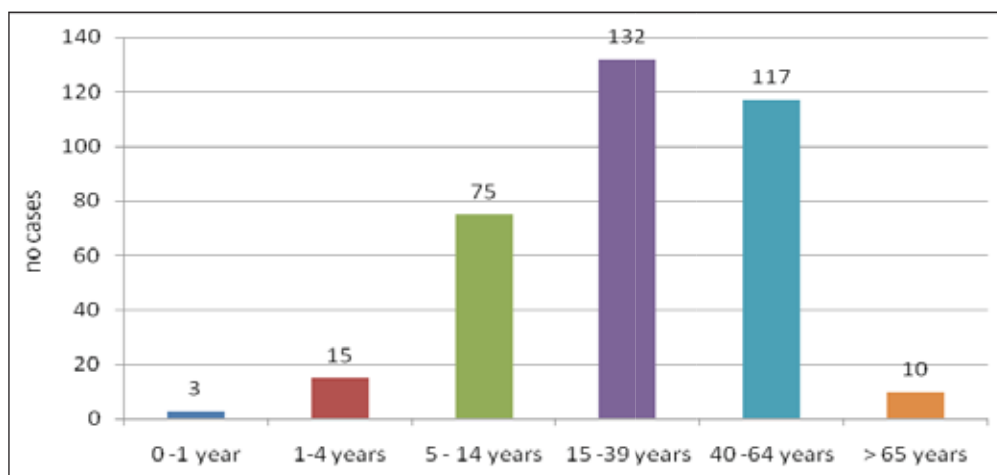


FIGURE 2. Distribution on age groups of AH1N1 influenza cases reported in Iasi County, between June 2009 and February 2010

352 confirmed cases of A H1N1 influenza were reported in Iasi County, between June 2009 and March 2010.

Last year's spring-summer season saw a relatively low number of flu cases, the (H3N2) seasonal subtype being mainly reported, and attention was drawn especially to imported influenza pandemic cases, as special quarantine, diagnosis and surveillance measures were applied to patients suspicious for H1N1 influenza.

Most of the patients were adults (73.5%), especially those in the 15-39 years age group (37.5% of the whole number).

Just as there are infection spreading patterns, it seems that there are emotional equivalents, a so-called emotion epidemiology linked to the disease. At the beginning of 2009, there were rumors of a mysterious virus coming from a third world country and spreading inevitably towards the civilized world. These rumors, together with the mass-media's efforts of always digging up sensational topics, caught the public's attention and fueled their fears more than other diseases. When the specter of a dramatic disease penetrates society, the public psyche is quickly fascinated. A flood of fears occurs, even when the disease is much less likely to cause death than, let us say, a car accident.

Despite the quarantine, the disease spreads throughout the country as it is transmitted from man to man, and the imported cases become a minority. The authorities' and population's concerns increase by the day. This situation and the fear of the unknown determined patients to consider it an absolute must to be vaccinated with a vaccine that was still hypothetical at the time.

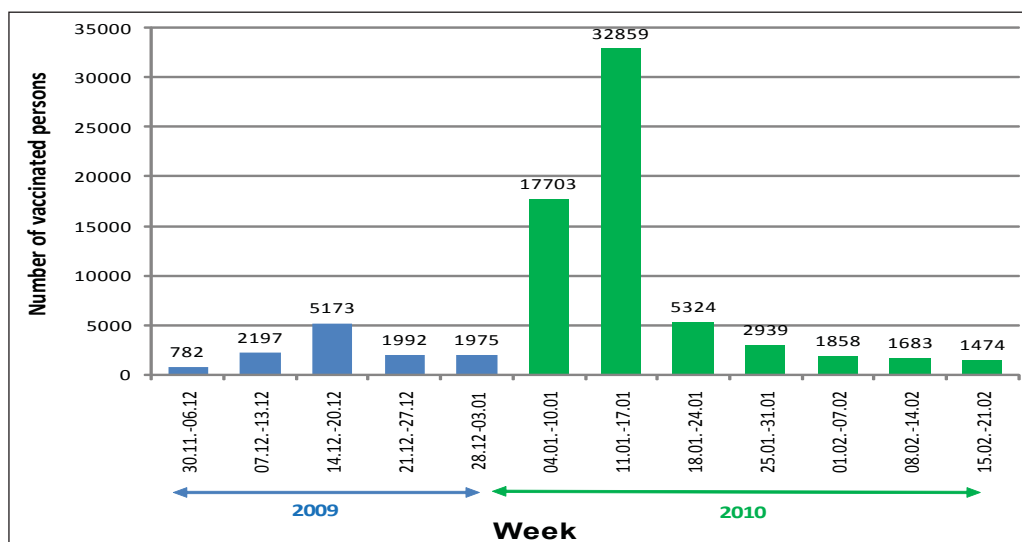
Like many of our colleagues, we were confronted with an invasion of patients suffering from more or less objective symptoms and willing to know whether they were not by any chance infected with the famous "novel" or "swine" flu virus. We noticed that some of them were somewhat disappointed when they were told that they did not match the case definition and that they probably had a mere cold.

We were often faced with difficult situations, as we had to deal with patients urging us to see them before the others, to sample exudates for PCR testing or vaccination (with a product that did not exist or was not available at the time). Our diplomatic skills were undoubtedly improved throughout those months.

After a relatively quiet summer and month of September, when the weekly number of confirmed cases was below 5, the international experts' forecasts came true and a second wave of pandemic influenza hit Iasi County. The weekly number of confirmed cases suddenly increased to over 50 in the 43<sup>rd</sup> week (October 19-25), while the higher number of people examined and the crowds invading our hospital led to an additional number of doctors on call.

After several successive delays, the Cantacuzino Institute finally began to market the much longed-for influenza vaccine, developed for people older than 16 years of age. The vaccination campaign started on November 27 and enjoyed a wide support from the national and local mass-media.

The first vaccination stage was restricted to healthcare workers, who were particularly exposed to the disease, but the results were modest, as many of them refused vaccination.



**FIGURE 3.** Achievements of the Cantgrip vaccination campaign in Iasi County, between November 30, 2009 and February 21, 2010

How could such a radical change of point of view on vaccination in only a few months be accounted for? It did most certainly not rely on logic or facts, since no new significant medical discoveries were made during this period. It seems that the reason is a contagious psychological dissemination of myths and suspicions. As the disease was spreading in society, a certain degree of emotional tolerance to the disease occurred. The fact that the epidemic did not disappear during the summer, that experts seemed to hesitate on the influenza control methods and prophylactic measures, created an unpleasant void. As they did not know whether to panic or be indifferent to it, patients became suspicious.

The fact that the success of the vaccination campaign in the medical world was only a modest one, in spite of the various attempts of imposing it by veiled threats and pseudo-memos from the ministry, fueled the population's suspicions. Despite the 20 years' experience of the Cantacuzino Institute in influenza vaccine preparation and the fact that the actual production process of the pandemic vaccine was not significantly different from the one employed for the preparation of the seasonal flu vaccine, the population's fears could not be allayed.

At the same time, an anti-vaccination campaign was organized through unofficial channels, on the internet or by other means, which evoked the lack of any reliable studies on its safety, possible serious side effects, toxicity of certain adjuvants, evil interests from certain pharmaceuticals companies.

Nonetheless, the number of vaccinated people increased progressively until just before Christmas,

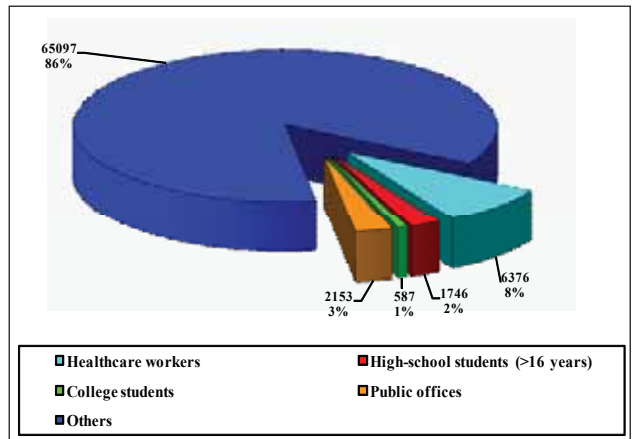


FIGURE 4. Percentages of various risk categories in Iasi County vaccinated with Cantgrip between November 30, 2009 and February 21, 2010

reaching about 10,000 people in Iasi County, and then dropped dramatically (more than 2 times) over the following two weeks and steadied around 2,000. Despite the appeals to the population made by the Ministry employees and local experts, despite the large number of influenza cases and deaths caused by the A H1N1 virus that held the front page of the newspapers, the population still did not seem convinced by the necessity of vaccination. The fact that the great majority of cases were light forms of disease, and the deaths occurred in patients with significant comorbidity, did not urge people to get vaccinated.

The event that broke the psychological barrier and filled the vaccination centers was the announcement of the death caused by influenza of a young and apparently healthy popular comedian on January 5, 2010. The number of vaccinations boomed both in the country and in Iasi County,

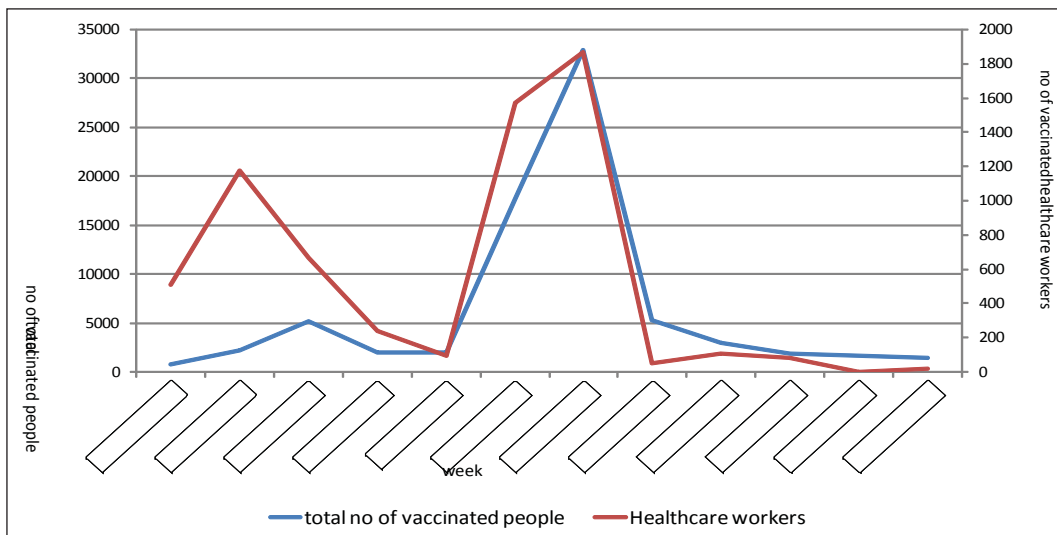


FIGURE 5. Temporal distribution of the number of vaccinated healthcare workers and other population groups

increasing by over 8 times as compared to the previous weeks, which made it necessary to open new vaccination centers, to use additional healthcare workers and rely heavily on vaccine reserves.

After two weeks of collective pro-vaccination “emotion”, the population’s interest decreased abruptly beginning with the last week of January, just as suddenly as it had increased.

A total of 75,959 people were vaccinated during the vaccination campaign in Iasi County, making up 9.2% of the county population (11.4% of the people older than 16).

Pupils and students made up only 3% of the whole number of vaccinated people, and the healthcare workers 8%.

Although we may assume that healthcare professionals would be less susceptible to emotional stimuli and the psychological pressure of mass-media, according to our information, except for a slightly favorable initial response, the great majority of vaccinations occurred at the same time as those of the general population. (Figure 5)

There should be no doubts as to the efficiency of the influenza vaccination campaign. Last years’ experience showed us that the number of seasonal influenza cases dropped dramatically with the increase of the number of administered vaccine doses.

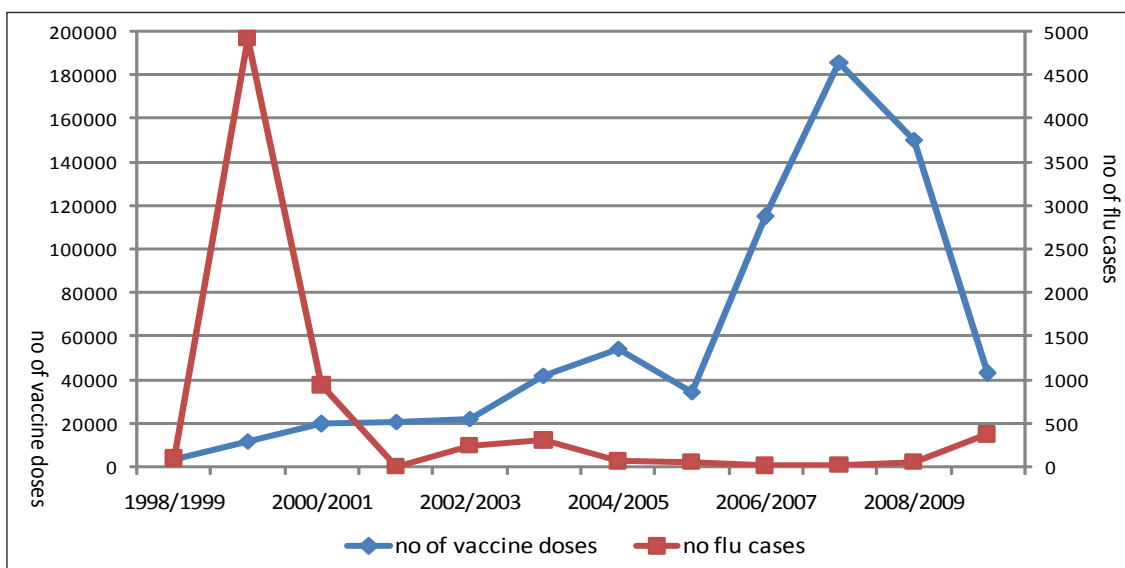
In Iasi County, the number of cases have decreased significantly since the 2000/2001 season, with the vaccination of over 20,000 people, and continued to drop in the seasons where the number of administered vaccine doses exceeded 100.000 (2006/2007, 2007/2008, 2008/2009).

What was new in the 2009/2010 season? The activity of the new influenza virus monopolized the authorities’, population’s and vaccine producers’ attention, while the seasonal regional virus made its presence known, with 376 cases confirmed in Iasi County and less than 45,000 vaccinations.

The WHO is rather reserved when it comes to reporting pandemic virus infection mortality numbers, as specialists consider that should they only include the laboratory confirmed cases this would mean underestimating mortality rates (1.4 deaths in 100,000 people in California (2)). The general specialist opinion is that this pandemic had a moderate impact on public health, as its mortality rates resembled seasonal influenza.

The dramatic change in the general point of view on vaccination during this pandemic is at the same time fascinating and frustrating. We may undoubtedly distinguish between an emotional epidemiology and the actual epidemiology of the real disease. We cannot fight the AH1N1 influenza efficiently only with sufficient reserves of vaccine and antiviral drugs. The medical profession should also get deeply involved in the control of the emotion epidemiology linked to the A H1N1 influenza virus. (4)

The ECDC, based on the forecasts of influenza experts, on the results of several serological studies, on the events of previous pandemics and mathematical models, predicted that the European countries may not experience a new wave of H1N1 pandemic influenza in 2010; however, the virus will most likely continue to travel and be the dominant strain in the region in the following flu



**FIGURE 6.** Number of seasonal influenza cases and vaccine doses delivered in Iasi County over the last 10 years

season. German experts think that up to 29% to 38% of the population should be immunized in order to prevent pandemic influenza transmission. Therefore, the ECDC experts recommend that the European Union population continue to be vaccinated against the new A H1N1 influenza virus.

The vaccination campaign had not a linear evolution in Iasi County, as it started slowly, among healthcare workers, and it peaked during the first weeks of January, when the vaccination centers in hospitals were under siege. Although we were far from reaching the percentages needed to stop the virus from traveling, suggested by German

researchers (that is 29-38% of the population), new cases are not reported, which may be the consequence of the natural evolution of the pandemic. Since experts warn us that the A H1N1 influenza virus may be the dominant strain in the following influenza seasons, the effort put into developing a vaccine for children, into vaccine production and population immunization, should not be discontinued. Special attention should be paid to the collective psyche and emotion epidemiology generated by the disease, in order to prevent any possible obstacles to population protection.

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