

Surveillance of the 2009 flu pandemic in Belgium

by

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In 2003, the world was alarmed by the capacity of the highly pathogenic Influenza A/H5N1 virus to infect humans and health institutions started establishing plans to cope with the new threat. With the devastating impact of the 1918 Spanish flu still in mind, being unprepared is not an option.

Yet, the 2009 pandemic surprised the world. For one, the start of the pandemic in the Americas was not the most likely scenario, but it led to the early detection of the new virus. Scientists, decision makers and media could observe the development of the pandemic almost in “real time”. Further, the world has changed since the last 1968 pandemic. The earthlings have become highly mobile enhancing the world-wide spread. Although health in general is better, chronic conditions, such as morbid obesity or asthma, have become more prevalent. Those conditions were soon identified as risk factors for complications and death in infected persons.

The new Influenza A(H1N1)2009 virus did not cause diseases as severe as the deadly Influenza A/H5N1, but the information from the first affected countries was not reassuring. The disease seemed to attack preferably young persons and new risk factors were progressively added to the list, including pregnancy. Up to one third of the persons with complications had no known or only a light pre-existing condition.

In the first months of the pandemic, public health bodies were flooded by a large number of information inquiries. Nets were swiftly thrown to catch the first cases and data collection systems were quickly set up to monitor the pandemic. The pressure decreased only months after, when the experience from the Southern hemisphere indicated a moderate profile of the pandemic. However, as Influenza is a highly unpredictable disease, changes in virulence and/or resistance were still under close scrutiny.

In 11 articles, divided over two issues, we describe the actions taken for surveillance in Belgium in the course of the pandemic and present the preliminary results of the data collected up to 31 December 2009. Each component of the surveillance is reviewed. In the first issue, we publish articles on the general aspects of the surveillance of the pandemic and laboratory activities. The second issue will contain articles on surveillance of specific groups, such as children, and the monitoring of the indicators of impact.

The first article, ‘Influenza A(H1N1)2009 pandemic: chronology of the events in Belgium’ summarises the key events which marked the year 2009, and the second article, ‘Case find-

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ing of Influenza A(H1N1)2009 in Belgium in the early pandemic' describes the summer period of the pandemic, before the virus actively circulated in the population.

Articles three and four are dedicated to the role of two core systems for the surveillance of Influenza: the Sentinel Network of General Practitioners (SGPs) and the National Influenza Centre, our reference laboratory of virology. Both systems are highly experienced in the surveillance of Influenza, and build on a long history of collaboration with health professionals and experts in Belgium and Europe. During the pandemic, they provided high quality information, which permitted to monitor the pandemic with confidence.

Two articles about diagnosis capacity round off this issue. The first one describes the creation of a network of laboratories for typing and subtyping Influenza A(H1N1)2009. The latter discusses the weekly data collection by the sentinel network of laboratories, with special attention to non-Influenza respiratory viruses such as RSV.

In the next issue, we will describe the surveillance systems specially set up for the pandemic and the existing systems which were adapted to play a new role.

The monitoring of the hospitalised cases was one of the largest challenges. During the pandemic and compared to seasonal Influenza, more admissions among young persons were expected. It was thus of prime importance to monitor the profile of the persons being hospitalised. Yet, little was known about the expected burden of the disease on the functioning of the emergency services and only a limited set of information could be collected.

A sentinel network of paediatricians was set up to complement the SGPs network. During the former pandemics, the highest attack rate had indeed been measured in the children, and it was essential to closely monitor this specific population.

The persons aged 65 and more were less attacked by the new virus, but could present a higher rate of complication among the cases. An experimental surveillance was initiated in a limited number of nursing houses, which is described in one of the articles.

The weekly monitoring of absenteeism at work and in schools was initiated to monitor the impact of the disease in the society. In the working environment, existing systems could be adapted, new systems had to be initiated in the school environment.

And finally, a specific system was launched to register the vaccination done by hospitals and by general practitioners.

What did we learn from surveillance in the pandemic? First, it is important to collect the same information during pandemics as is already done during the seasonal epidemics: what we know better, works better. This permits us to reinforce the networks, to build confidence, but also to collect baseline information on what is the 'normal' and what is an 'exceptional' reaction of the system. Second, it is important to build the surveillance systems with data providers. When the pandemic started, the systems we needed were described on paper, but implementing them in real life and under pressure was another question. Unfortunately, only few opportunities were given to data providers to really participate in the setup of the system.

Last, the surveillance of Influenza requires the capacity to network in health settings as well as in society. This should also be prepared in 'time of peace'.

We take the opportunity of this special issue to thank all the persons in medical and paediatrician practices, in hospitals, in laboratories, in nursing homes, in schools, or in companies, for the efforts they made during this pandemic.