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Contents

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Dr. Massimiliano Di Renzi

It is with great sorrow that EPI-Insight informs its readers of the death of our great friend and colleague, Dr. Massimiliano (Max) Di Renzi.

Max was tragically killed in a road accident in southern Turkey, on Friday 9 June 2006. He was working with the World Health Organisation (WHO) on a project "Strengthening Communicable Disease Surveillance in Turkey". Two other WHO colleagues travelling with him at the time were also killed in the same accident.

Max was 37. He qualified as a medical doctor in Rome. He undertook postgraduate clinical training followed by training in Public Health Medicine in Italy. He did a masters degree in epidemiology at the London School of Tropical Medicine and Hygiene. In 2003, he joined the European Programme for Intervention Epidemiology Training (EPIET) two-year fellowship programme (cohort 9) and chose to come to Dublin.

In November 2003, Max entered into the lives of everyone in the Health Protection Surveillance Centre and was a known and familiar friend and colleague to many health protection colleagues around the country. During his two years in Ireland Max established a firm hold in the hearts of all who knew him.

Max participated in numerous public health studies in Ireland and internationally including a national campylobacter case control study, influenza vaccine uptake among GPs, establishing surveillance for heat related mortality, Italy 2005, a VTEC outbreak in a football club, a national Irish mumps outbreak, salmonella outbreak in the west of Ireland, a community wide hepatitis A outbreak in southern Italy, 2004, a cluster of myocarditis in Sri Lanka in the aftermath of the South East Asian tsunami, 2005.

Max enriched the lives of all around him. Although quiet in manner his presence was striking. His smile could be seen across a large, crowded hall. His kindness, patience, sincerity, modesty, warmth and good humour never failed to strike those who met him.

A very effective communicator, both on the personal as well as professional level, he was a frequent contributor to journals and conferences. As a team member his presence was always welcomed and sought. He brought with him commitment, motivation, strong epidemiological skills, and capable IT input, as well as an enthusiasm, intellectual rigour and real sense of fun. He remained a dedicated practitioner of public health, with his focus firmly fixed on making peoples' lives better.

Max's contribution to HPSC and to public health in Ireland will never be forgotten. His passing leaves a gap in all our lives but at the same time we feel honoured to have known and worked with him as a close friend and wonderful colleague. He was and will continue to be an inspiration to all of us.

We in the Health Protection Surveillance Centre wish to extend our heartfelt sympathies to the Di Renzi family in Italy, and Max's many friends and colleagues around the world. Our condolences are also extended to the families of his other WHO colleagues who lost their lives in the same accident.

Dona loro l'eterno riposo.

Epidemiology of Influenza in Ireland, 2005/2006 Season

Introduction

The 2005/2006 influenza season was the sixth year of influenza surveillance using sentinel general practices in Ireland. The Health Protection Surveillance Centre (HPSC) is working in collaboration with the National Virus Reference Laboratory (NVRL) and the Irish College of General Practitioners (ICGP) on this project.

Influenza activity was moderate in Ireland for most of the 2005/2006 season, with the peak of activity occurring later than usually observed, during week 10 2006. Influenza A (H3) and B co-circulated this season. Influenza activity mainly affected 5 to 14 year olds.

Materials and Methods

Clinical data

Forty-six general practices (located in all HSE areas and representing 4.1% of the national population) were recruited to report electronically, on a weekly basis, the number of patients who consulted with influenza-like illness (ILI). ILI is defined as the sudden onset of symptoms with a temperature of 38°C or higher, with two or more of the following: headache, sore throat, dry cough and myalgia. Cases were those attending for the first time with these symptoms.

Virological data

Sentinel GPs were requested to send a combined nasal and throat swab on at least one ILI patient per week to the NVRL. Swabs were tested for influenza using immunofluorescence and PCR techniques and results were reported to HPSC. The NVRL also tested respiratory specimens, referred mainly from hospitals.

Other indicators of influenza activity

The Departments of Public Health reported an influenza activity index every week to HPSC. The activity index is analogous to that used by the WHO global influenza surveillance system and the European Influenza Surveillance Scheme (EISS).[1,2] Each Department of Public Health also established one sentinel hospital in each HSE area, reporting total, accident and emergency, and respiratory admissions data on a weekly basis. Sentinel primary and secondary schools were also located in each HSE area in close proximity to the sentinel GPs, reporting weekly absenteeism data.

The Departments of Public Health also reported all notified cases of influenza outbreaks and all influenza/ILI outbreaks to HPSC each week. An enhanced dataset on all hospitalised influenza cases aged between 0 and 14 years of age was also reported to HPSC. From January 2005, HPSC was notified of all registered deaths on a weekly basis from the General Registrars Office (GRO).

Results

It should be noted that hospital admissions, enhanced surveillance and mortality data for the 2005/2006 season are provisional.

Clinical data

Influenza activity in Ireland peaked later in the 2005/2006 season compared to the previous season. Activity was moderate for most of the 2005/2006 influenza season, with a peak during week 10 2006 at 82.5 per 100,000 population (figure 1). During the peak of activity, the majority of ILI cases reported were between 5 and 14 years of age.

Virological data

The NVRL tested 378 sentinel specimens for influenza virus during the 2005/2006 season. One hundred and thirty-two (34.9%) sentinel specimens were positive for influenza: 64 influenza A (61 A H3 and 3 A unsubtyped) and 68 influenza B. The majority of positive influenza sentinel cases were aged between 15 and 64 years (78.5%).

The NVRL also tested 1,783 non-sentinel respiratory specimens, 24 (1.3%) of which were positive for influenza A, 12 (0.7%) for influenza B, and 376 (21.1%) were positive for RSV. The majority (90.2%) of influenza and RSV positive specimens were aged between 0 and 4 years of age.

Vaccination status and antigenic characterisation

Of the 132 positive influenza virus detections from sentinel specimens, 109 (82.6%) were unvaccinated, 10 (7.7%) were vaccinated and vaccination status was unknown in 13 (9.8%) cases. Of the 10 cases that were vaccinated, influenza A (H3) was detected in five cases and influenza B in five cases.

Two influenza specimens were sequenced at the NVRL and antigenic characterisation was undertaken at the WHO laboratory (Mill Hill) in London. One influenza A (H3) isolate was antigenically characterised as A/Hong Kong/4443/05 and one influenza B isolate was characterised as being closely related to B/Hong Kong/45/05.

Regional influenza activity

Regional influenza activity peaked during week 10 2006, with HSE, Eastern Region, Midland Area, Mid-Western Area, South Eastern Area and Southern Area all reporting localised influenza activity. Overall, influenza activity was most intense in HSE ER, NEA, and MWA during the 2005/2006 season. The highest ILI consultation rates were observed in HSE MWA, peaking during week 10 2006.

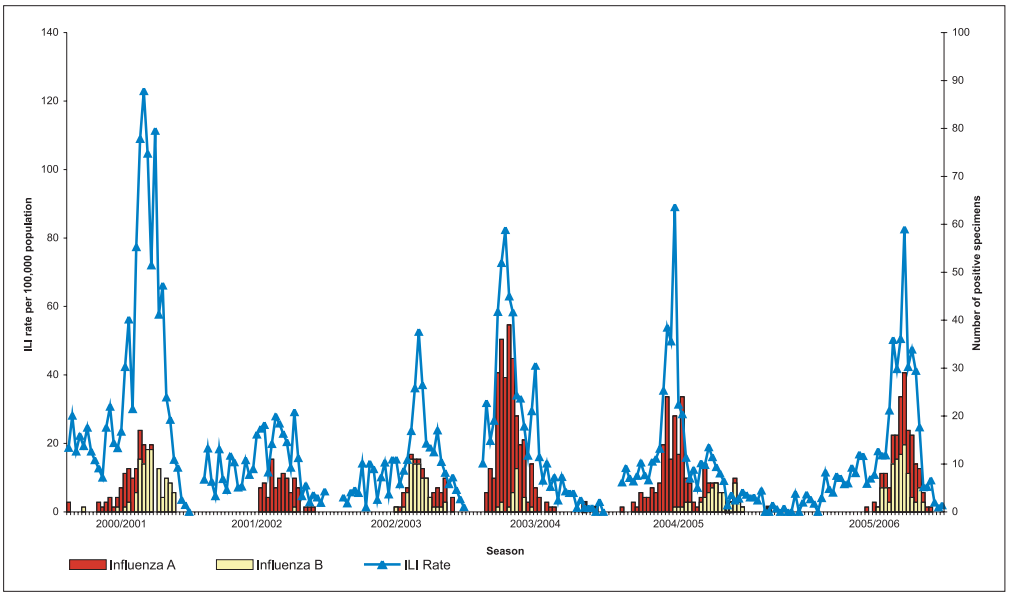

Figure 1. ILI rate per 100,000 population and the number of positive influenza specimens detected by the NVRL during the 2000/2001, 2001/2002, 2002/2003, 2003/2004 & 2004/2005 seasons, summer 2005 and the 2005/2006 season.

Outbreaks

During the 2005/2006 season, four ILI/influenza outbreaks were reported to HPSC. One outbreak occurred during week 4 2006 in a nursing home in HSE NEA. All residents had received the 2005/2006 influenza vaccine. HPSC also received notification of an outbreak in a primary school in HSE ER during week 9 2006. A further two outbreaks occurred in HSE MA during week 10 2006, one occurred in a primary school, and the other in a secondary school (influenza B).

Sentinel hospitals & sentinel schools

Hospital respiratory admissions (as a proportion of total hospital admissions) in sentinel hospitals peaked during week 52 2005 (figure 2), following the seasonal peak in RSV. A second smaller peak in hospital respiratory admissions was observed in week 12 2006, two weeks following the peak in sentinel GP ILI

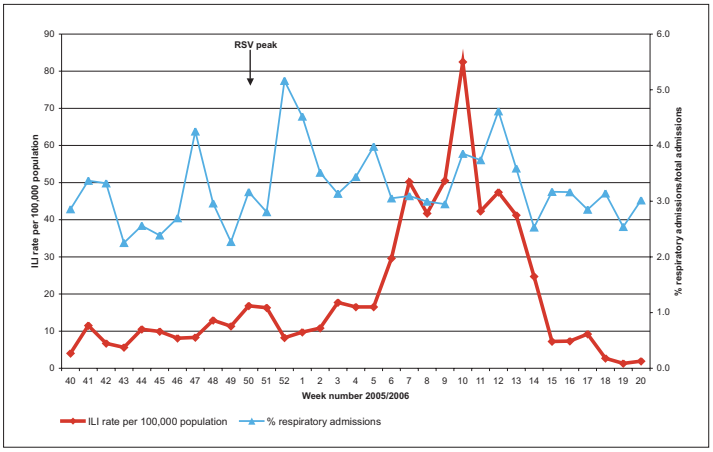

Figure 2. Respiratory admissions as a percentage of total hospital admissions in seven sentinel hospitals and ILI rates per 100,000 population by week for the 2005/2006 influenza season.

consultation rates. Absenteeism in several sentinel schools was also at elevated levels during the peak in ILI consultation rates.

Enhanced influenza surveillance (for hospitalised 0-14 year olds)
A total of ten influenza cases were reported through the enhanced surveillance system during the 2005/2006 season. These cases were hospitalised between February and April 2006. All cases were in the 0-4 year age group; seven were under 1 year of age. All ten cases were notified from HSE ER. This compares to 13 hospitalised influenza cases in 0-14 year olds reported during the 2004/2005 season (also from HSE ER). ILI GP consultation rates were at elevated levels during February and March 2006 in HSE ER. Nine cases were positive for influenza A and one was positive for influenza B. Complications included bronchitis, bronchiolitis, acute otitis media, secondary bacterial pneumonia, primary viral pneumonia and other respiratory complications. The mean number of days in hospital was 6.7 (ranging from 3-14). Four cases were in at risk categories for influenza, three of which were not vaccinated. Nine cases recovered and one case was lost to follow up.

Mortality data
There were 17,807 deaths from all causes and 3,567 pneumonia and influenza deaths registered with GRO during the 2005/2006 season. One death was attributed to influenza. Influenza was the secondary cause of death and not the primary cause in this case

Influenza activity worldwide
The United Kingdom experienced the sixth consecutive year of low levels of influenza activity during the 2005/2006 season, peaking late in the season, with B/Hong Kong/330/2001-like virus identified as the dominant circulating strain. Seven hundred and seven school outbreaks of ILI were reported from across England and Wales, 70 of these outbreaks were associated with influenza B.[3] Influenza activity was moderate in the majority of European countries this season, with influenza B virus identified as the dominant virus circulating.[1] In Canada and the US, influenza activity also started late, with influenza A (H3N2) predominating (the majority of strains were identified as A/California/7/2004(H3N2)-like). [4,5]

Discussion

Influenza activity was moderate and peaked late in Ireland during the 2005/2006 influenza season, with influenza A (H3) and B viruses co-circulating. Influenza activity also started later in most of Europe, Canada and the US, with low to moderate levels of activity reported.[1, 3, 4, 5]

Surveillance of hospital admissions and school absenteeism data plays a significant role in the early detection of influenza epidemics.[6] This was demonstrated during the 2005/2006 season in Ireland, with elevated levels of respiratory admissions in sentinel hospitals detected following the peak in influenza activity. The value of collating school absenteeism data as an indicator of influenza activity was also highlighted with the detection of ILI/influenza outbreaks in two sentinel schools.
The small number of influenza-attributed deaths reported to HPSC for the last few seasons is not unexpected. Excess deaths due to influenza are often not registered as influenza deaths. Monitoring all cause deaths, and influenza and pneumonia deaths is one method of identifying these influenza-non-attributed deaths and from this, estimating the mortality burden caused by influenza each season.[7] A pilot project to monitor total deaths and deaths due to pneumonia and influenza weekly in Ireland has been completed at HPSC. A system that monitors influenza deaths in Ireland could prove to be a significant early warning tool and would be invaluable for health system response planning in the event of an influenza pandemic.

Avian influenza A (H5N1) outbreaks have posed a significant threat to human health since 2003. Of greatest concern is the risk that continuing transmission of the virus to humans will give avian and influenza viruses an opportunity to reassort their genes, thereby acquiring the ability to transmit easily from human to human and thus triggering a pandemic.[8, 9] As of July 7th 2006, Spain became the 14th EU Member State to report a case of highly pathogenic avian influenza A (H5N1) in wild birds. Avian influenza H5N1 have been confirmed in poultry in five EU Member States.[10] No cases of avian influenza (H5N1) have been reported in Ireland to date in poultry or wild birds. Avian influenza A (H5N1) remains predominantly a disease of birds. A small number of human cases have been reported in South East Asia, Africa and Eastern Europe, all of which have been associated with close contact with dead or dying poultry. In all human cases to date there has been no evidence of efficient human-to-human transmission. Human infections remain a rare event.[8]

However, with the threat of a pandemic posed by influenza A (H5N1), EU Member States are strengthening their preparedness for a potential human influenza pandemic.[11] A number of additional measures have been put in place in Ireland to improve surveillance of ILI/influenza. Work is in progress to increase the number of sentinel GPs, thereby improving geographical and population representation. Sentinel GPs are also currently monitoring ILI on a year round basis. In addition, influenza and all infectious disease outbreaks became notifiable in Ireland on 1 January 2004. Reporting of such events is critical to early detection of influenza activity. An enhanced influenza surveillance system was set up to detect all hospitalised influenza cases aged between 0 and 14 years of age. Other activities that are being implemented to improve the surveillance of influenza include weekly surveillance of influenza and pneumonia registered deaths, monthly surveillance of influenza vaccine uptake data in those aged 65 years and older, and the construction of baseline and epidemic threshold levels for influenza activity in Ireland. An evaluation of sentinel hospital admissions and school absenteeism data has been completed and recommendations are currently being implemented. Contact and attendance data are also currently being collated from GP co-operatives, to act as a crude indicator of influenza activity. Work is ongoing in several other areas including: case and contact based reporting of avian influenza, surveillance of unexplained deaths/increased deaths due to respiratory tract infections in healthcare facilities, surveillance of ICU bed occupancy by influenza and pneumonia cases and surveillance of respiratory illness in healthcare workers. This information will in turn inform continuing national progress on pandemic preparedness and will be vital in the event of an influenza pandemic for planning and control measures.

Further information on influenza is available on the HPSC website at
http://www.ndsc.ie/DiseaseTopicsA-Z/InfluenzaFlu/

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References on request

Crimean-Congo Haemorrhagic Fever in Turkey

Turkey is currently experiencing an increase in Crimean-Congo haemorrhagic fever (CCHF) activity. Between 1 January and 30 June 2006, 323 individuals were investigated for CCHF. Of the 150 cases which were laboratory-confirmed, 11 have died. The majority of those investigated were infected through tick bites. The northeastern provinces are the most affected.[1] CCHF was first documented in Turkey in 2002-2003. There were 249 cases and 13 deaths in 2004, and 266 cases and 13 deaths in 2005. The Ministry of Health in Turkey and WHO are closely monitoring the situation. Enhanced surveillance, control measures and a public awareness campaign have been put in place.

Crimean-Congo haemorrhagic fever

The virus which causes CCHF is a *Nairovirus* and is widely distributed in Asia, Africa, the Middle East, and Eastern Europe.[2]

Clinical features

CCHF is a severe haemorrhagic fever. The onset of symptoms is sudden with fever, headache, malaise, anorexia and a petechial rash. Bleeding from the gums, nose, lungs, intestine and other mucosal surfaces may occur. In severe cases hepatorenal failure may develop. The case fatality rate ranges from 2% to 50%. The incubation period is 1-3 days, with a range of 1-12 days.[2]

Transmission

CCHF is transmitted by ticks. Immature stages feed on hares, hedgehogs, and ground-feeding birds, whereas adult ticks are parasites of large domestic and wild animals.[3]

Humans become infected by direct contact with blood or other tissues from infected animals or from the bite of infected ticks. The majority of cases have occurred in those involved with the livestock industry such as agricultural workers, slaughterhouse workers and vets. There have been several serious hospital outbreaks following exposure of healthcare workers to blood and body fluids from infected patients.

Diagnosis

The virus is readily isolated from the blood using cell culture or suckling mice. PCR can also be used. Antigen detection by ELISA is useful in diagnosis.[2]

Treatment

Treatment is supportive. The antiviral agent ribavirin has been shown to have some effect in the treatment of CCHF.[2]

Prevention and advice for travellers

- No safe and effective vaccine is widely available for humans.
- Persons living in endemic areas and travellers to these areas should avoid tick-infested areas particularly when the ticks are most active (spring to autumn). Where this is not feasible the use of personal protective measures such as repellent, and inspection of skin and cloths for ticks, will help minimise exposure.
- Remove ticks by using gentle, steady, upward traction with forceps/tweezers applied close to the skin being careful to avoid leaving mouthparts in the skin. Do not twist or jerk the tick. Use gloves while doing this and wash the attachment site with antiseptic after removal of the ticks.
- Persons who work with livestock or other animals in endemic areas should use repellent on exposed skin and on clothes. Gloves and protective clothing should be worn to prevent skin contact with infected tissue or blood.
- Suspected or confirmed cases of CCHF should be isolated and cared for using barrier nursing. Universal precautions should be used when handling blood or tissue specimens from such patients.[2]

More information on Crimean-Congo haemorrhagic fever is available at www.hpsc.ie/A-Z/Vectorborne/ViralHaemorrhagicFever/ and www.who.int/mediacentre/factsheets/fs208/en/

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Imported Case of Lassa Fever, Germany

Belgium and Germany have issued an alert to public health authorities across Europe following confirmation of a case of Lassa fever in a man who had travelled from Sierre Leone via Abijian (Ivory Coast) to Brussels (Belgium) on 10 July 2006 (same plane all the way). He then changed plane for a connecting flight to Frankfurt on 11 July 2006. The risk to passengers on these flights is low. Nevertheless, the health authorities in Belgium and Germany are in the process of tracing passengers on these flights to inform them of the risk and advise them to contact their public health authorities if they develop fever up until 2 August 2006.[1]

Information on the management of Lassa fever is available at www.hpsc.ie/A-Z/Vectorborne/ViralHaemorrhagicFever/ and a factsheet at www.who.int/mediacentre/factsheets/fs179/en/

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