STRATEGIES USED TO COMBAT SWINE FLU (H1N1) IN POLAND

A. Wojtyla MD PhD[1],[2], P. Bilinski MD PhD[1],[3], P. Kulpa[1], P. Holownia PhD[1]

[1]Chief Sanitary Inspectorate, Długa Str. 38/40, 00-283 Warsaw, Poland, (E-mail: inspektorat@gis.gov.pl) [2]Institute of Haematology and Transfusion Medicine, Warsaw, Poland; [3]Institute of Agricultural Medicine, Lublin, Poland,

PRESENTATION STRUCTURE (in summary)

- Background, organisational structure & planning.
- 1st Phase actions (identification & isolation).
- Reasons & conclusions (1st phase).
- 2nd Phase actions (containment).
- Outcomes

Polish plan of action against the future flu pandemics

Guidelines were prepared during 2001-2005 according to international recommendations; WHO, CDC, ECDC, European Commission, OIE, FAO and others.

- **Came into action Spring 2006 when H1N1 was first detected in wild birds & then in domestic birds Dec 2007.**

- **In 2005 a National Pandemic Committee established in Poland of top scientific experts in epidemiology, infectious disease aetiology, prevention & treatment. The lead role in management was played by the Chief & State Sanitary Inspectorates (SANEPID)**

.

CHIEF SANITARY INSPECTORATE (GIS); Mission

- **The Chief Sanitary Inspectorate is a central administration body, subordinate to the Minister of Health in Poland.**

- **Its mission is public health protection focused particularly on communicable disease control, food and nutrition safety, environmental hygiene, health promotion and other public health issues.**

- **The Chief Sanitary Inspectorate has been operating since 1 January 2000 when the Ordinance of the Minister of Health of 30 December 1999 on granting statutes to the Chief Sanitary Inspectorate (*Dz. U. of 1999, No 111, item 1315*) entered into force.**

- **The Chief Sanitary Inspectorate operates a Quality Management System that complies with the requirements of PN-EN ISO 9001:2001.**

SSI :NATIONAL STRUCTURE

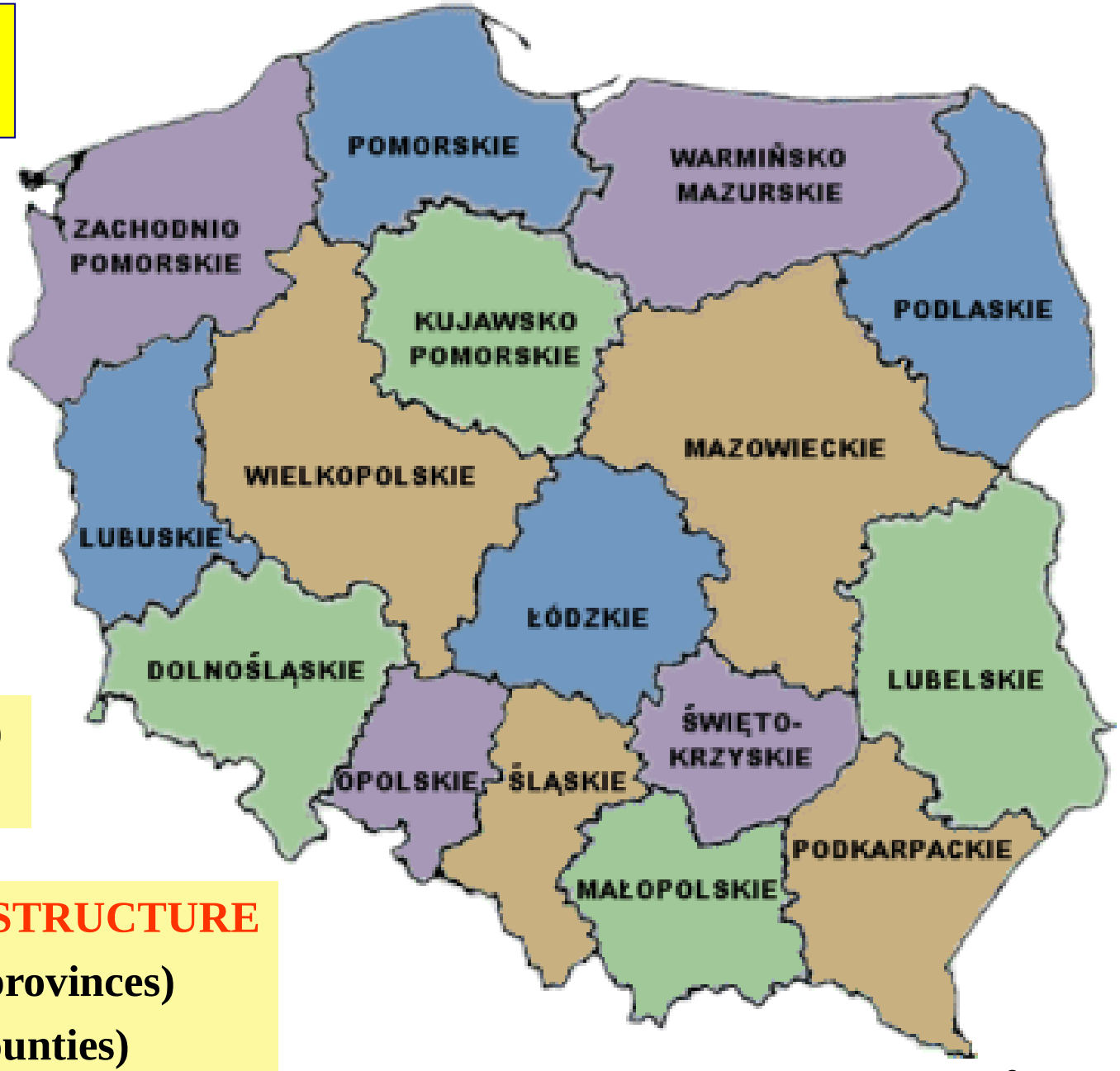
Central Unit of Government Administration is the Chief Sanitary Inspectorate (GIS)

Each of the 16 voivodships has one Voivodship Sanitary and Epidemiological Station (WSSE)

318 Powiat Sanitary and Epidemiological Stations report to the State Sanitary Inspection

15 Border Sanitary and Epidemiological Stations also report to the State Sanitary Inspection

P O L A N D



AREA

312 685 km²

POPULATION (2009)

38.5 mln citiziens

ADMINISTRATIVE STRUCTURE

16 voivodships (provinces)

315 powiats (counties)

STATE SANITARY INSPECTORATE (System operation)

- **Almost 18,000 employees throughout Poland**
- **Each province has an integrated & accredited laboratory in the system**
- **Possesses an integrated system for information gathering, health monitoring, rapid response to health threats , linked to the GIS**
- **The information system is linked and with experts from the foremost scientific institutes of scientific and medical in order to undersake rapid health risk assessment to any health threats arising nationally**
- **The SANEPID works within various early warning rapid alert systems in Europe integrated to the EU and WHO**

Preparation for flu pandemic in Poland

- **Reserve stocks made beginning of 2006 of anti-virus drugs (Oseltamiwirem) and basic resources for flu protection under the Ministry of Health & GIS control at various locations ready for use then onwards.**

- **Worldwide epidemiological situation monitored/updated by GIS, keeping in contact with international counterparts. In 2009 this especially included the swine-flu events in Mexico, USA, Canada & other countries.**

Plan of action for dealing with H1N1 infection

- **The National Committee adopted its plan, (27.04.2009), with the outbreak of swine flu on the american continent.**

- **GIS notified an extension to the 1st phase of the Pandemic plan (ie. identification & isolation) to the end of August to account for the large influx of schoolchildren and families returning to school from their holidays (1st Sept) -this being likely the greatest moment of risking the spread.**

- **Intended identification of all suspected cases bringing the virus especially from areas of high infection; Mexico, USA & Canada. Included air passengers returning from both N & S America, as well as the UK and other countries where outbreaks have occurred.**

Actions taken in 1st phase (identification & isolation);

- **State of alert implemented at all airports from 27.04.09 for rescue services, SANEPID and border control; aim to identify all persons returning from N&S America with flu-like symptoms by qualified personnel.**

- **Suspected cases were referred to isolation wards at the airport for medical examination. Cases confirmed by doctors as medically suspect transferred to the nearest hospital's infectious disease dept; isolated transport arranged in special vehicles.**

- **Diagnostic testing then performed and patients undergo appropriate flu treatment by doctors. When H1N1 confirmed then all previous contacts are followed up and investigated epidemiologically.**

Identification of persons suspected with AH1N1v flu and epidemiological supervision

- **Based on suspect airline passengers suspects being interviewed by SANEPID staff and checking passenger lists for all persons in the same plane in contact with the suspect. Epidemiological monitoring was performed by keeping in touch with the contact persons for seven days to check health/symptoms.**

- **This procedure performed up to end of June but then limited to epidemiological monitoring of passengers in the immediate vicinity of confirmed cases due to a large increase in the new virus cases. At the end of August this procedures extended to those returning through seaports or by land due to a great influx of people returning from summer holidays.**

Actions undertaken to inform and educate passengers;

From 3.05.2009 these were targeted at those returning from the high risk areas/countries (Mexico, USA and later others) by;

- **Loudspeaker information relayed on symptoms, risks and how to proceed/deal with symptoms if manifest up to 7 days after returing ie. should contact with medical /SANEPID services. GPs should make home visits in such cases.**
- **Distributing leaflets with the same information. Together with advice on personal hygiene ie. coughing, handwashing, sneezing & other human contacts.**
- **In addition display of posters at airports warning of person to person contact risks.**
- **Assuring (via media, broadcasting), the public everything is under control to limit any panic.**
- **At the end of August actions extended to sea and land connections.**

Preparation actions for Phase 1;

- **98 wards with 3000 hospital beds made ready for patient treatment & isolation for suspected/confirmed cases in infectious disease departments.**
- **1st week of May; information relayed on how to identify and treat H1N1 cases sent to these places. Doctors free to decide on best treatment although recommendations to treat only the medium-worse cases with anti-viral drugs.**
- **On 27.04.2010 the National Flu laboratory relayed instructions to healthcare services on the taking and sending of samples for testing.**
- **This lab was the only one performing RT-PCR testing. By the end of November, 12 such labs offering RT-PCR testing had been established within the laboratory testing structure of GIS.**
- **The Oseltamiwirem anti-viral was only supplied to hospitals, treating and isolating suspect cases, from reserve stocks (28th April-3rd May). This drug was withdrawn from chemists to prevent viral immunity occurring thus ensuring the efficacy of this drug for the future as well as limiting any side-effects and in preserving stocks; 1st week of May)**

Reasons for this course of action (1)

- **It was considered that the existing network of provincial, district and border SANEPID stations together with their qualified experts are sufficient to identify cases of infection arriving from abroad and performing the epidemiological investigations.**

- **The period to the end of August was vital to relaying guidelines and instructions to hospital staff in infectious disease departments to identify cases of the virus, perform diagnostic virology and treatment.**

- **Some departments required more staff as the numbers of resident doctors have decreased during the last 20 years due to falls in infectious disease. Time was also required to enable more labs to establish & perform the RT-PCR testing.**

Reasons for this course of action (2)

- **It was considered that this time would allow suspected/confirmed cases to be precisely observed regarding the illness severity to enable appropriate treatment.**
- **The time also gained, was invaluable in preparing and distributing information and instructions to staff from hospital wards and intensive care whenever severe cases of the flu arose.**
- **Furthermore, the numbers of beds available in wards & intensive care could checked if enough to cope with the increased numbers of cases being hospitalised with the flu infection.**
- **The performance of medical/SANEPID services in other countries could be observed (Mexico, USA, Canada and other EU countries) in order learn and adopt their experiences to Poland.**
- **It was considered that the flu would break out quite late in Poland due to a lower tendency for Polish citizens to travel and that really the only place where there is large international air traffic is Warsaw.**

Actions undertaken during the identification and isolation phase (1)

- **Up to the end of August there were no instances of the virus spreading in Poland. All cases came from abroad.**
- **On the advice of GIS, Phase 1 was extended from August to the end of September when students start their academic year and the majority return from abroad.**
- **Throughout this time, medical services were prepared for the next phase of action ie. containing the spread of flu in the population by;**
  - **> training GPs and sending instructions to primary healthcare centres concerning recognising and treating the flu as well when to refer cases to hospitals.**
  - **> Sending instructions, (electronically/paper versions) on how to manage the diagnostics and treatment of the flu.**
  - **> Receiving precise instructions on how infectious disease wards and intensive care units should cope with increased patient loads.**

Actions undertaken during the identification and isolation phase (2)

- **A system was prepared to monitor the consumption of anti-cold drugs and antibiotics in chemists as well as anti-viral drugs at infectious disease departments in hospitals.**

- **In the last week of October the Chief Sanitary Inspector appealed for inhabitants living on the country's borders with the Ukraine and Belorus to try not to visit gravesides on the other side of the border (*1st November being a highly observed holy feast day for paying respects to the dead in this region*) .**

- **This action bore fruit in that the border traffic dropped by a half. This was enacted following the panic that set in the Ukraine, for the last 2 weeks of October, when the cases of flu and mortality had risen in that country.**

Conclusions drawn from the identification and isolation phase against H1N1 flu (1)

- **The course of the H1N1 disease was relatively mild where only about 10% suffering required Oseltamiwirem. In cases where the flu was suspected then this figure was also similar.**
- **Polish society complies relatively well with instructions from the medical and SANEPID services.**
- **Panic was avoided. Public opinion survey in September 2009 showed 78% were not alarmed by the flu.**
- **The SANEPID services at borders, airports, seaports and inside the country coped with identifying suspected/ill cases and with the epidemiological investigations.**
- **Medical staff from infectious disease departments correctly assessed the severity of the disease and the implementation of appropriate diagnostics and treatment.**
- **The capacity of infectious disease departments was sufficient for patient hospitalisation and treatment.**

Conclusions drawn from the identification and isolation phase against H1N1 flu (2)

- **Laboratories correctly identified the virus and their capacity was sufficient. After the mobilisation of 12 laboratories the number of tests performed could have been done several times more.**
- **Increased samples taken by GPs, within the SENTINEL system, allowed the numbers of flu H1N1 cases to be assessed relative to seasonal flu. The capacity of hospital wards and intensive care units was assessed to treat severe flu infection including treating respiratory failure. In some cases hospital wards received vital equipment to cope with any increased number of patients.**
- **The proportion of vaccinations in Western countries (USA, Canada, UK, Germany), showed that this figure could nowhere near be achieved in Poland to gain population resistance (ie. around 60-70%). The recent trends against vaccination in Poland are, in the opinion of our experts, stronger than anywhere else; This observation bore an important influence on not purchasing vaccines in Poland.**

Containment phase of H1N1 in Poland (1)

- **This was declared on 3.11.2009 where;**
- **A public information campaign was launched, (having been earlier prepared), in education slots on the radio, central and local TV concerning ways to limit the spread of the virus by;observing correct hygiene when coughing, sneezing, handwashing, airing of premises and safe contact with other persons.**
- **Leaflets, posters and notices were distributed to the internet, the press, (national & local), likewise concerning the aforementioned correct hygiene emphasising the airing of school/student premises and ofworkplaces during the winter and Christmas holiday period.**
- **Keeping track of how many hospital beds are occupied in infectious disease departments, wards and intensive care units.**
- **Weekly monitoring of drugs bought against colds at chemists.**
- **Close monitoring of anti-viral drugs used in hospitals.**
- **Weekly monitoring of all school/nursery school absenteeism.**

Flu monitoring in Poland

- **Performed in accordance with the relevant national legislation (*Act of 5th December 2008 on preventing and fighting infection and infectious disease*…) stating various required actions by the medical services on suspected cases and the mandatory obligation to inform SANEPID.**
- **The National Health Service Fund pays for the treatment of infectious disease which includes flu after checking that flu cases or suspected ones have been properly notified.**
- **Suspected/confirmed flu cases were notified through mandatory weekly reports during the flu season and at other times every 2 weeks to the National Public Health Institute in accordance with regulations for compiling health statistics. (ie. doctors/GPs notify the district SANEPID, which notifies the provincial SANEPID which relays them all to GIS and the National Public Health Institute)**
- **During the 2009-2010 flu season an additional system for monitoring absenteeism in schoolchildren was implemented.**

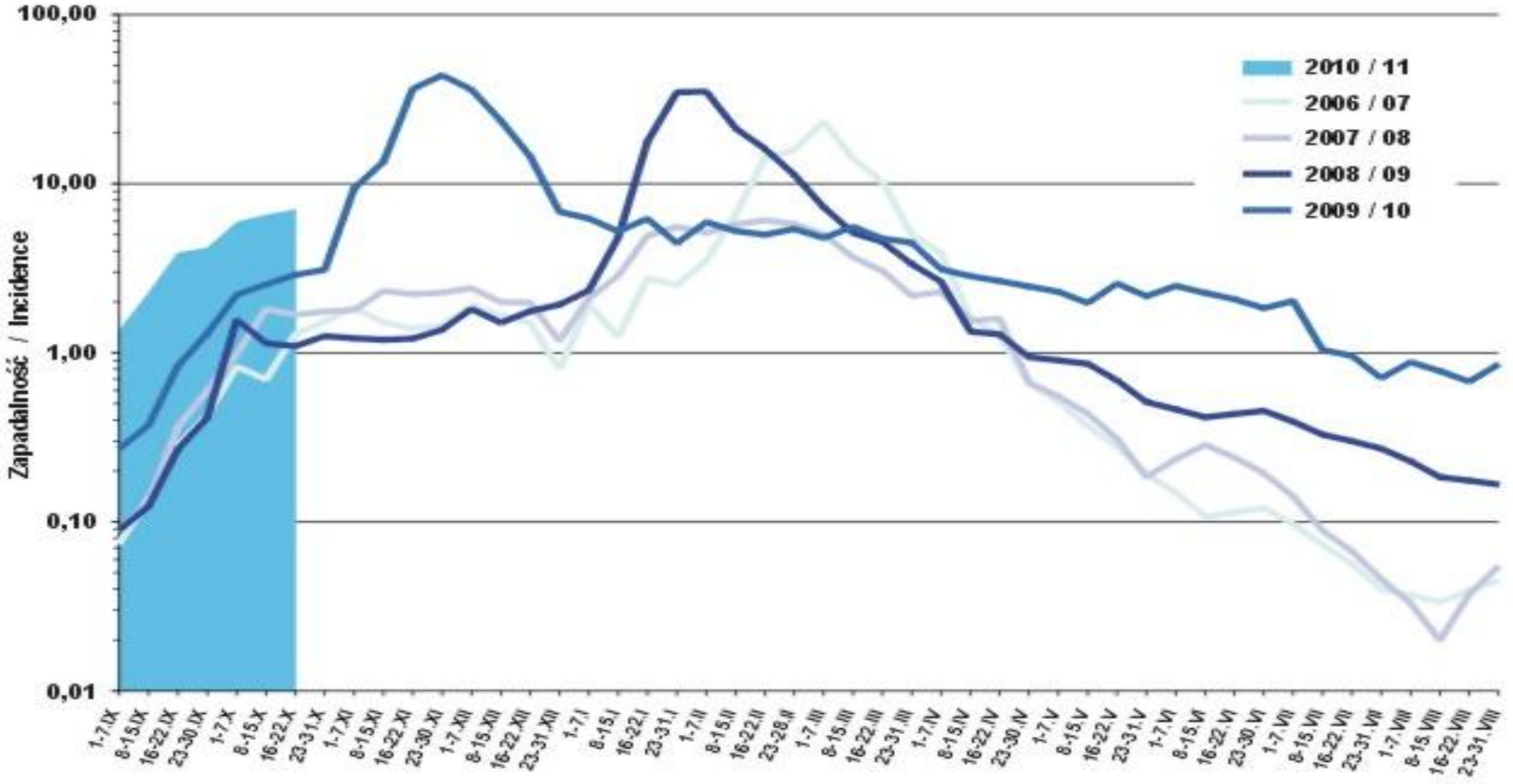
Notifying suspected/confirmed flu cases to the SENTINEL system

- **The SENTINEL system was designed to integrate GP healthcare with epidemiological surveillance throughout Poland.**

- **Samples are taken in suspected flu cases and sent to the provincial SANEPID stations via the district ones for preliminary virological screening testing.**

- **Samples confirmed as suspect are then sent to the National Public Health Institute for further confirmation to identify the actual type of flu virus.**

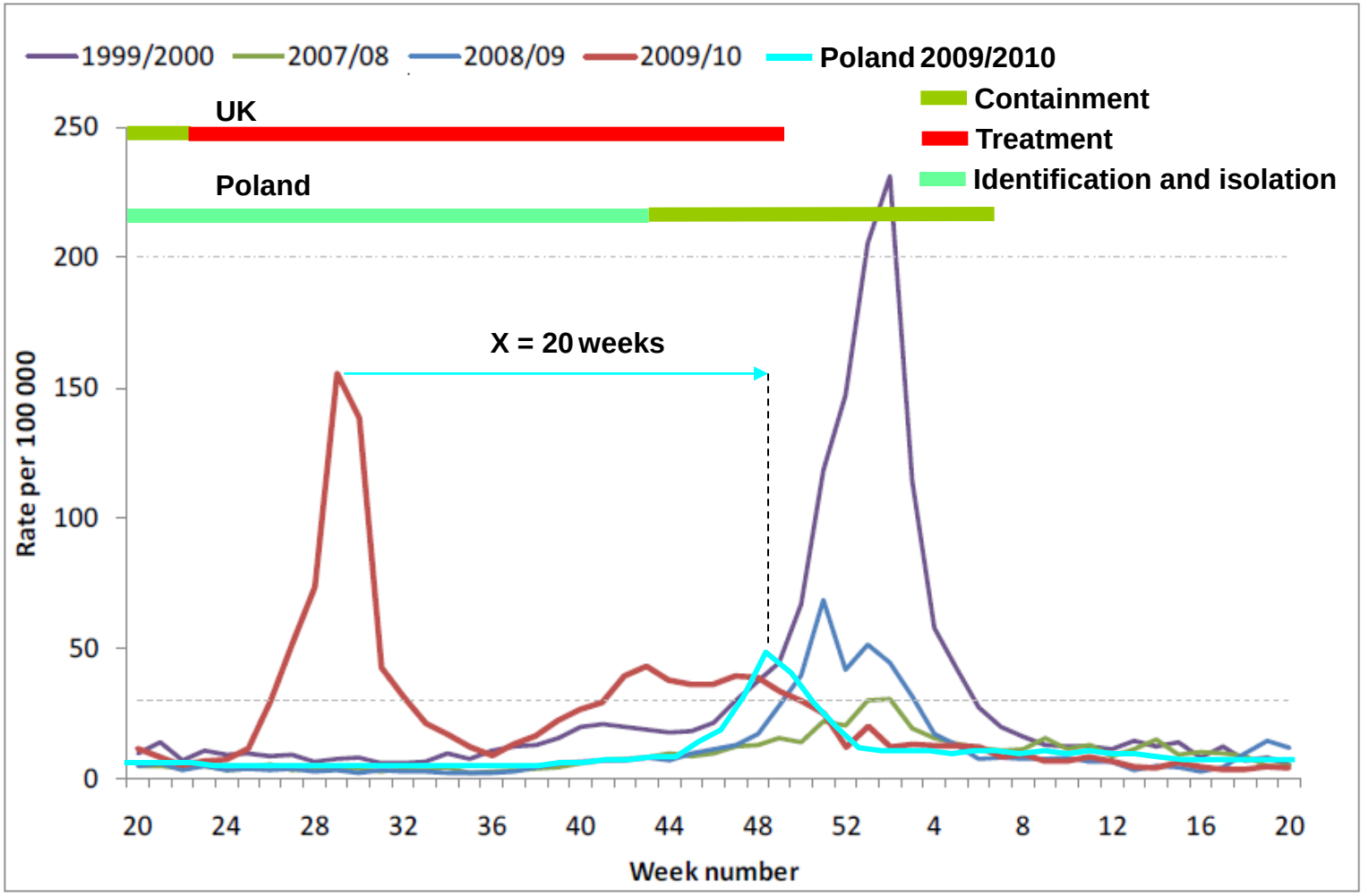
Polish physicians weekly ILI rate per 100,000, 2006/07 – 2010/11



Observations on the course of the H1N1 flu in Poland 2009-2010

- **Initial findings during phase 1, (identification & isolation), demonstrated that the course of H1N1 infection is mild and the majority of cases did not require anti-viral treatments.**
- **Use of Oseltamiwirem was limited to prevent the acquisition of viral immunity and decreasing any side effects.**
- **Persons suffering from the flu were mainly below ages of 50 years and children showing that older people may be immune to this virus type (after experiencing the 1968 Hong Kong and 1977 Russian flu epidemics in Poland).**
- **The H1N1 virus was confirmed in only half the suspected cases of illness.**
- **The numbers of hospitalisations and complications requiring intensive care were within the average for seasonal flu.**

Royal College of GPs weekly influenza-like illness rate per 100,000, May 1999 – May 2010 compared to polish physicians weekly ILI rate per 100,000, May 2009 – May 2010

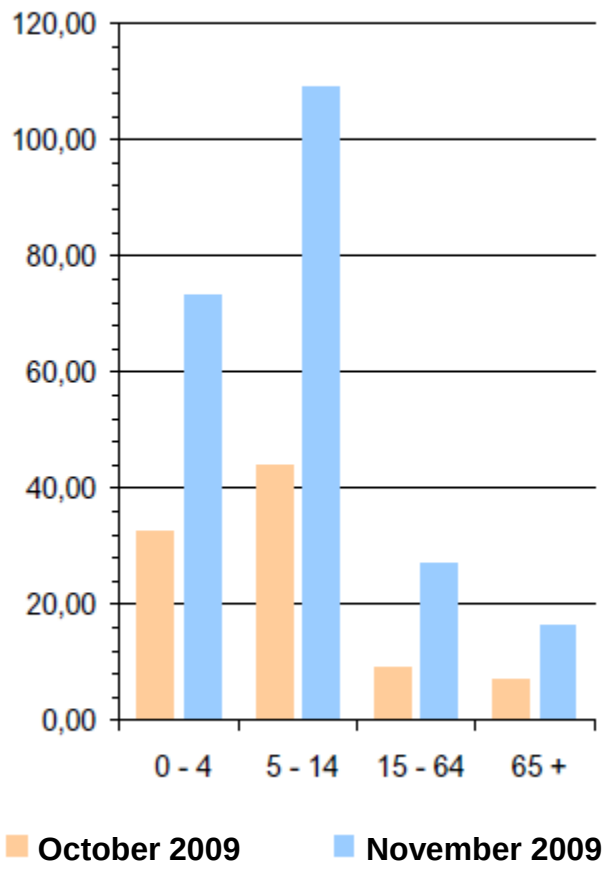


Course of The H1N1 flu pandemic in Poland during 2009-2010; Comparison with the UK

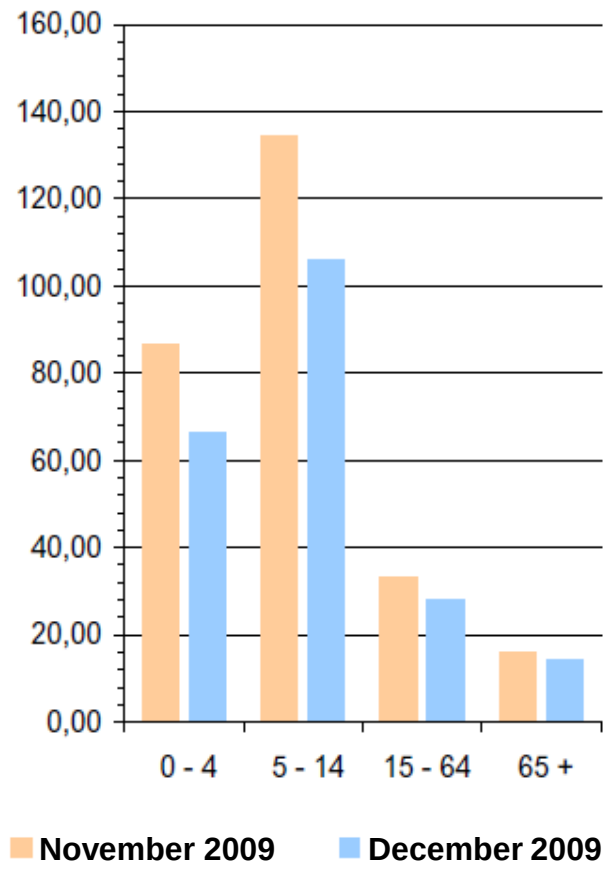
- **Through extending the identification-isolation phase, the virulence of the virus could be confirmed to be mild as seen previously on the American continent.**
- **In other countries like the UK this phase was by-passed.**
- **The peak ILI rate occurred 20 weeks after the UK one.**
- **Poles are one of the least willing of nations to be vaccinated against influenza. In 2009-2010 vaccination was 6.5% (as previously) and the SANEPID authorities concluded that it was not possible to achieve 60-70% rates in order to guarantee immunity for the population.**

- **Several thousand cases of infection were recorded to ILI in Poland (n=2851) up to 31st March 2010 with 180 confirmed deaths.**

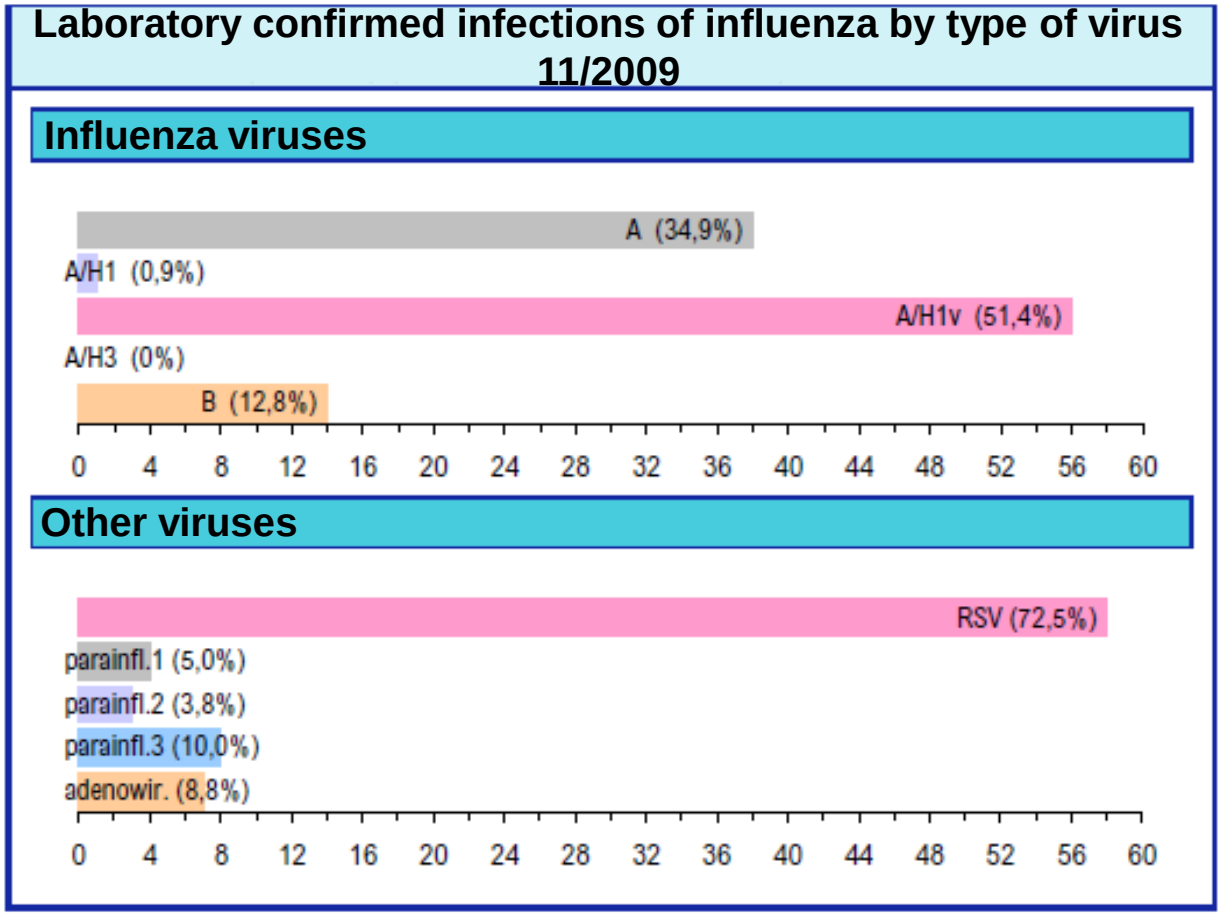
ILI rate by age group



ILI rate by age group



Laboratory confirmed infections of influenza by type of virus 11/2009



Laboratory confirmed infections of influenza by type of virus 12/2009