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<td>09:00-09:25</td>
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<td>Prof. Dr. A.D.M.E. Osterhaus, Head of the Viroscience Department, Erasmus MC Rotterdam, The Netherlands / ESWI Chair</td>
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<td>10:00-10:20</td>
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<td>Dr. M. Bahadir Sucklakli, Primary Health Care General Directorate, Ministry of Health, Turkey Represented by Dr. Meral Akçay Ciblak / National Influenza Reference Centre Istanbul University / ESWI-member / initiator Grip Platformu, Turkey</td>
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When it comes to flu and the influenza vaccine, barriers and misconceptions remain present. Not everyone agrees with the observation that vaccines are safe. Too many people who should get vaccinated don’t. How can we tackle this problem? How can things be turned around for the better? What can we do ourselves?

Every country has its own view on policy and employs it to filter out and process perception, in doing so extracting meaning. Imperfect data and information invite competing interpretations. Policy differences fuel dissonant visions and opposition. Vaccination recommendations remain very different.

Individuals are confronted with different opinions from different stakeholders. It is in this multitude of information that people need to be able to step away from erroneous views and track down the right information on the influenza issue. The daily information overload makes it no easy job to get the right message to the right person, even with all the technology available in today’s mediatised society.

The vaccine uptake in risk groups could be higher. Furthermore, surveys show large disparities in coverage for seasonal influenza vaccines in high-risk populations across the EU. Something has to change if we want to reach the WHO target of 75% coverage in risk groups.

As the cloud of evidence and data that surrounds flu grows, vaccination recommendations need to be updated. In the Strategic Advisory Group of Experts of WHO (SAGE-group), discussions are going on. Additional risk groups are being considered and new targets being set. The US is showing a path of novel thinking by choosing the pragmatic way towards universal vaccination.

People need to see that the story of influenza is a positive one, a constructive one. They have the right to know how this information is spread and by whom, in order to develop their own individual and objective decision making process when it comes to influenza vaccination.

Health care workers can play an important role. If they are not vaccinating themselves, they will not encourage their patients to get the vaccine. Health care workers need to be convinced of the value of flu vaccination. Therefore we need to have a better understanding of
the reasons put forward against vaccination, most importantly those against vaccination of the elderly, children and pregnant women. And once understood, we have to communicate the right kind of information in an authentic, honest, simple and more focused way.

We need a change of behaviour. Increasing the amount of messengers spreading the right information about influenza is important for raising influenza awareness amongst opinion leaders as well as those at risk and their families. Vaccination recommendations should be made broader, and influenza should be a priority in travel vaccination programmes.

We as scientists have realised we cannot tackle the influenza problem on our own. We need the umbrella network organisations in Europe. Joining forces is the best way to tackle influenza.

Close collaboration between influenza stakeholders, such as public health officials and health care providers, patient organisations and scientific institutions is of utmost importance. As a network and partnership organisation, ESWI has already built transparent networks in different European countries, which share their strategy to fight the burden of influenza.

Those networks strengthen and support the national public health activities of each specific country by spreading clear messages and in doing so helping to build dialogue between research institutes, government and general practitioners and other health care workers. ESWI helps to set up these national influenza networks by first inspiring the national organisations responsible to build such networks, then by supporting the networks in their activities. The first responsibility of the networks is to establish a national action plan to combat influenza.

ESWI’s aim is also to link experts across borders and to fuel the sharing of knowledge, experiences and novel thinking. On May 23rd 2012, the second European Influenza Summit brought together more than 95 representatives of organisations actively linked to influenza prevention, such as health care providers, senior citizens, at-risk patients and public health authorities. 13 lecturers including Mr. Helmut Walerius of the EC’s DG for Health and Consumers and Dr. Caroline Brown of WHO Europe, addressed the audience to elaborate on different aspects of the fight against influenza. They all underpinned the importance of sustained efforts to fight influenza. The Summit exemplifies ESWI’s body of work, facilitating interaction and the exchange of best practices by offering international platforms to discuss ways of making further progress in the fight against influenza.

This magazine provides a report on the lectures given and discussions held at the Summit. Feel free to copy the text and distribute it.

I wish you an inspiring read.

Thank you for having joined the fight.

PROF. DR. A.D.M.E. OSTERHAUS
Head of the Viroscience Department,
Erasmus MC Rotterdam,
The Netherlands ESWI Chair
ABOUT ESWI

The European Scientific Working group on Influenza (ESWI) is a partnership organisation of stakeholders with a clear mission: to reduce the number of influenza victims in Europe.

Partnership organisations like ESWI are established to meet specific objectives and to undertake projects to address problems that no partner could adequately tackle alone. A successful long-term partnership is built on common grounds. In the case of ESWI, this common ground is a social concern to improve public health in Europe.

If you require further information, please check the ESWI website at www.eswi.org or contact the ESWI manager, Mr. David De Pooter, at david.depooter@eswi.org or +32 479 45 74 46.

EVM has provided an unrestricted grant to support the ESWI Influenza Summit. An unrestricted grant implies that EVM financially supported the Summit, but has not been involved in the preparation of the Summit in any way.
There are three types of human influenza viruses: A, B and C.

Influenza A and B viruses are responsible for seasonal flu epidemics each year. Influenza C type infections cause mild respiratory illness or common cold and are not thought to cause epidemics.

Influenza A viruses are divided into subtypes depending on the genes that make up the surface proteins: the haemagglutinin (H) and the neuraminidase (N). Currently 17 different haemagglutinin subtypes and 9 different neuraminidase subtypes have been identified.

Influenza A viruses can be further broken down into different strains. The haemagglutinin and neuraminidase antigen are described in parentheses. Current subtypes of seasonal influenza A viruses found in people are influenza A (H1N1) and influenza A (H3N2) viruses.

Birds are a reservoir for all types of A viruses. Typically, these avian viruses cause little or no illness in wild birds. Therefore they are called low pathogenic avian influenza (LPAI) viruses.

When LPAI of the H5 or H7 subtypes are transmitted to domestic poultry and get into reproductive cycles, they may acquire mutations in the haemagglutinin that change them into so-called highly pathogenic avian influenza (HPAI) viruses. These can cause very severe disease outbreaks in domestic poultry, resulting in up to 100% mortality.

HPAI viruses do not easily transmit to humans, unless they evolve and acquire new mutations. Pigs are excellent mixing vessels for influenza viruses. They can be infected by both avian and human or mammalian influenza A viruses as well as by true porcine influenza viruses. The intermediary role of pigs readily seems to allow for an exchange of genome segments between both avian and human/mammalian influenza A viruses.

This transformation process may result in a completely new virus with pandemic potential. Pandemic influenza refers to the emergence of a major new subtype of influenza A virus against which the entire human population has little or no immunity. Pandemic viruses reappear as seasonal influenza viruses in the post-pandemic period replacing one of the existing seasonal influenza A viruses.

The influenza A (H1N1) virus that emerged in the spring of 2009 and caused the first flu pandemic in more than 40 years is a reassortant between different swine viruses, which eventually are all of avian origin. The virus has now replaced the old seasonal H1N1 virus that was previously circulating among humans.

Scientists used to assume that all human viruses had gone from birds through pigs first. That appeared not to be true, as in 1997 we showed that direct infection from chickens to humans is possible.
Initiatives like the ESWI Summit are exemplary of the cooperation needed to step up flu prevention efforts, and this coincides with the aim of the EU Council. The EU has put Flu on its political Agenda. Therefore, opening speaker Helmut Walerius of the Health Threats Unit, EC Directorate-General for Health and Consumers, was said to be very pleased to address the ESWI Flu Summit and present the EU Agenda on Flu.

PEER GROUP
The European Commission has put Flu on the political agenda. Influenza is surveyed on a continuous basis. "The EU considers vaccination in general as one of the most cost-effective measures in public health possible", said Helmut Walerius in front of an audience of very attentive listeners, explaining the goal of the Recommendation on Seasonal Influenza Vaccination, adopted by the Council in 2009. "The target set by the Recommendation is to achieve a 75% vaccination coverage rate in people above the age of 65 and to improve vaccination rates in other risk groups. Also, health care professionals are targeted, as they are considered a peer group for promoting seasonal vaccination in the overall population", said Walerius.

LOOKING FOR COOPERATION
In the follow-up of the Council’s recommendation on Seasonal Influenza Vaccination, the Directorate-General for Health and Consumers is working together with the European Centre for Disease Prevention and Control (ECDC) and national expert institutions. "We develop training programmes for professionals and targeted communication tools aimed at promoting vaccination in the general population. We are also looking for further cooperation with interested partners and associations, to help us reach the goals set. We also support 31 research projects exclusively targeted at influenza and 21 more projects with a broader scope but also connected with flu", said Walerius, also confirming that ‘infectious diseases’ and ‘prevention’ are planned to remain a topic in the forthcoming EU Framework Programme for Research.

CROSS-BORDER HEALTH THREATS
When it comes to pandemic preparedness in the EU, a communications and technical guidance document has been in place since 2005. "These documents have continuously been updated and further developed ever since. Also the lessons learned from the past pandemic are taken into account", Walerius said. The lessons learned from the H1N1 Pandemic have also been instrumental in producing a new legislative proposal on the means to address serious cross-border health threats. "It was already adopted by the European Commission in December 2011. The new proposal is now being discussed in the European Parliament. I expect the proposal to be adopted rather soon", announced Walerius.

NEW FRAMEWORK
The aim of the new legal framework is to better protect European citizens from a wide range of serious cross-border health threats. These can be biological, chemical or environmental in nature. "It will help national governments interested to purchase vaccines jointly, increase preparedness levels and coordinate responses to
"The EU considers vaccination in general as one of the most cost-effective measures in public health possible."

public health threats such as disease outbreaks and environmental disasters”, Walerius said. Therefore existing rules on preparing for and managing health emergencies will be strengthened and the Health Security Committee will be given a stronger mandate to react in a crisis. Walerius: “The improved early cooperation between Member States and a strengthened basis for common measures will make national governments better prepared to respond to cross-border health threats in the EU. Each country depends on the others’ level of preparedness and response, and good coordination will better protect the public.”

NEW EU MEASURES TO TACKLE CROSS-BORDER PUBLIC HEALTH THREATS

In today’s globalised society, people and goods move across borders and illnesses can spread around Europe – and the globe - within hours. In December 2011, the European Commission adopted a legislative proposal on the means to address serious cross-border health threats. The new legal framework builds on existing structures and further strengthens them.

The main measures proposed include:
- to extend the existing coordination mechanism for communicable diseases to all health threats caused by biological, chemical or environmental elements;
- to reinforce the mandate of the Health Security Committee;
- to strengthen preparedness for crises, e.g. by enabling joint voluntary purchasing of vaccines and other medical countermeasures for the Member States interested;
- to provide the means to recognise a European ‘health emergency situation’ for the purpose of making medicines available faster;
- to agree on European-wide emergency cross-border measures when a crisis results in large scale mortality and national measures fail to stop the disease from spreading.

LESSONS LEARNED

1. The European Commission has put flu on the political agenda.
2. The EU considers vaccination in general as one of the most cost-effective measures in public health possible.
3. Health care professionals are considered a peer group for promoting seasonal flu vaccination in the overall population.
4. ‘Infectious diseases’ and ‘prevention’ is planned to remain a topic in the forthcoming 8th EU Framework Programme for Research.
5. The European Commission has adopted a legislative proposal on the means to address serious cross-border health threats. The new legal framework builds on existing structures and further strengthens them.

“The new cross-border health threat’s framework will provide a platform for joint procurement of vaccines by Member States interested.”
The World Health Organization (WHO) has updated its seasonal influenza vaccination recommendations, using evidence obtained since the previous recommendations were published in 2005, including from the 2009 pandemic. This includes emphasizing the importance of the vaccination of pregnant women. With this update, WHO responds to the results of the 2011 Venice survey revealing national policy focal points and specific vaccination recommendations in WHO member states, explained Dr. Caroline Brown, Head of Respiratory Pathogens Programme of WHO’s Europe office in Copenhagen (DK).

**REGIONAL SURVEY**

Influenza vaccines were first introduced in the 1940s. Today, vaccination is the primary means of preventing influenza, revealing an excellent safety record and a high efficacy in healthy adults, but lower in the elderly.

In 2011, WHO-Europe in partnership with the European Centre for Disease Prevention and Control and the VENICE collaboration conducted a survey in its 53 member states. The objectives of the survey were to assess progress towards the WHO goal of 75% influenza vaccine coverage in the elderly by 2010, identify country-specific vaccine recommendations, describe seasonal influenza vaccine coverage in 2008-2009 and 2009-2010 season, and also provide a baseline from which to measure future improvements in seasonal influenza vaccine uptake. 48 out of 53 countries responded.

**DIFFERENT POLICIES**

"Most countries in the Region have access to seasonal influenza vaccines. The vast majority of countries have a policy for influenza vaccination. A few do not”, said Caroline Brown commenting on the study results. "Recommendations for ‘traditional’ risk groups are quite similar. All countries are recognising the fact that the clinical risk groups should get vaccinated, and the vast majority also recommend vaccination for the elderly and health care workers.”

More importantly, policies regarding pregnant women and children are very different. Some countries recommend vaccination for all pregnant women, some recommend for some, some recommend against and in some countries there is no recommendation at all. In the case of children, the majority of countries don’t recommend vaccination or do so only for some children. A quarter of all countries responding recommend vaccination for all children from the age of 6 months and older.

The study also revealed low vaccination coverage in many countries, in particular in low-middle-income countries. Coverage results show high disparities for vaccination uptake in the elderly. Only one country, the Netherlands, reached the WHO 2010 coverage target of 75%.

The UK coverage rate is more than 70%. Spain, Italy, France, and Ireland follow behind with approximately 60%. Coverage in other groups seems quite hard to determine. "Only six countries could present results for clinical risk groups. Other countries have no monitoring system, which makes it difficult to monitor progress and impact”, Brown said.

**UPDATED RECOMMENDATIONS**

In April 2012, WHO published updated recommendations on seasonal influenza vaccination. The recommendations continue to recommend annual vaccination of the elderly,
persons with chronic medical conditions, and residents of long term care institutions, but now emphasise the vaccination of pregnant women as the most important risk group in countries considering initiating or expanding vaccination programs for influenza. "New evidence gathered since the previous recommendations were published in 2005 underline that pregnant women are a very important target group for seasonal influenza", emphasised Brown, also stressing the fact that "pregnant women are no new risk group." Since vaccination of pregnant women remains a potentially sensitive topic, “implementation of adverse event surveillance is important.”

The updated WHO guidance also recommends vaccination for health care workers, children between 6 and 59 months, the elderly and those with high-risk conditions, without suggesting any order of priority. "Countries with existing influenza programmes targeting any of these groups should continue to do so and incorporate immunisation of pregnant women into such programmes”, said Brown. "The identification of risk groups nationally should be based on burden of disease, cost-effectiveness, feasibility and other appropriate considerations.”

Traditionally, children are no target group for influenza vaccination in WHO-Europe member states, “notwithstanding the strong evidence of burden. Compared to non-elderly adults, child rates of hospitalisations and deaths are higher”. Regarding the elderly, policies should address the loss of confidence in vaccination programmes induced by low vaccine efficacy and little evidence of effect on mortality. "Vaccination programmes must be maintained, meanwhile investment in improving vaccine efficacy must continue”, said Brown.

“Only very few countries are able to monitor vaccine uptake in target groups aside from the elderly.”

LESSONS LEARNED

1. The World Health Organization (WHO) has updated its seasonal influenza vaccination recommendations, using evidence obtained since the previous recommendations were published in 2005, including from the 2009 pandemic.

2. Pregnant women are at high risk of severe disease and death from influenza and should be included in national influenza vaccination programmes.

3. Vaccination for health care workers, children between 6 and 59 months old, the elderly, residents of long term care facilities, and people with high-risk conditions is highly recommended, without any order of priority.

4. A large proportion of countries in Europe do not have recommendations for vaccination of pregnant women.

5. Only one country is reaching the WHO 2010 elderly coverage target of 75%: the Netherlands.
INFLUENZA A H5N1

WILL THE NEXT PANDEMIC HIT HARD?

We should all be well prepared to tackle the next pandemic. Prof. Dr. Ab Osterhaus, Head of the Viroscience Department, Erasmus MC Rotterdam (The Netherlands) and ESWI Chair, is concerned about the unprecedented spread of the H5N1 virus. “If this H5N1 virus or another avian influenza virus gains the ability to spread efficiently from human to human, it will end up being very dangerous.”

LET’S NOT FORGET THE PANDEMIC FLU
Virologists never sleep. Prof. Dr. Ab Osterhaus keeps a close watch on possible pandemic triggers. He worries about the H5N1 virus. “We fear it might cause the next pandemic. The virus has spread all over Asia and to the Middle East, Africa and Europe numerous times. It has been infecting birds, poultry and mammalian species as well. We found out that migrating birds and especially ducks spread the virus.” Osterhaus has been proclaiming these concerns since the late 90s. But people say: ‘The virus has been out there for more than 10-15 years, and relatively little has happened since. So why should we worry?’ Their conclusion is that the virus is unable to cause a pandemic. I think we had better add the words ‘fortunately so far’ and say we were just lucky.”

BAD ENOUGH
Only the slightest risk of occurrence suffices to remain vigilant. Meanwhile Osterhaus found out that all kinds of animals, such as poultry, but also in mammals harbour the H5N1 virus. “This means that if the virus could mutate into a form that would be efficiently transmissible from mammal to mammal, it could possibly also spread among humans. In Indonesia, 178 H5N1 patients have been identified. The fatality rate in hospitals proved to be 70-80%. In the Middle East, the fatality rate approaches 30%. On average it is about 60%. Of course we have to be careful with these figures. It may also happen that people get infected and don’t even develop serious disease or have to go to hospital (because they feel quite well). During the recent Mexican flu pandemic approximately 0.01% of infected people died. When the H5N1 virus spreads, it will be for certain a far more difficult virus to contain. Even if 1-2% die, it will be bad enough.”

TRICKY CAPABILITIES
The crucial question is why this H5N1 virus and other viruses like H7N7 have not become transmissible from human to human yet. People may develop severe disease or even die when they get the infection directly from birds. The virus itself however does not seem to spread from human to human. In the Netherlands one fatal case has been reported so far: a veterinarian got infected with H7N7 influenza virus during a chicken flu outbreak. “Unfortunately, the man died”, Osterhaus said. “When we examined his respiratory tract, the virus was only present in his lungs and not in his upper respiratory tract. That largely explains why the virus was not spreading. It also means that if the virus were to gain the capability to efficiently replicate in the upper respiratory tract, it would transfer quite easily from human to human.”

MUTATING INTO A KILLER
Ron Fouchier in Osterhaus’ lab asked himself how many mutations that move would require. The answer is quite disturbing. “Only a handful”, Osterhaus said, “and all those mutations have already been found in poultry in Asia. Sometimes, there is even a combination of mutations. We have looked not only at the mutations as such, but also at the function of each mutation. We know the hot spots. A handful of...
mutations is very little. So health authorities in affected countries should get alerted and be informed about the mutations.”

THEY WILL BE BACK
For the moment, the team at Erasmus MC Rotterdam have been prohibited from sharing further details regarding their findings. “Authorities fear bioterrorists might use the data to fabricate a killer virus. We obviously don’t agree and hope our data will be published in due time. Keep in mind that nature is the real bioterrorist.” “It is important to release these data and to examine certain mutations that may have an impact on transmissibility. If this H5N1 virus or another type of avian virus were to gain the ability to spread efficiently from human to human, it would end up being very dangerous”, Osterhaus continues. "We have to be prepared for the next pandemic. There is no reason why the next pandemic should be a mild one. Pandemics have been around all the time. They will come back.”

There exist three representations of flu in humans. Seasonal influenza, avian influenza and pandemic influenza.

Seasonal influenza or ‘winter flu’ outbreaks occur in humans in the moderate climate zones every winter period. They are currently caused by one of the two subtypes of influenza A viruses, H1N1 or H3N2, or by one or two influenza B viruses.

Avian influenza or ‘bird flu’ is a disease in humans caused by an avian influenza A virus that normally infects only birds. As most of these viruses are low pathogenic avian influenza (LPAI) viruses, they cause little if any signs of disease in birds. Things become more dangerous when LPAI viruses of the H5 and H7 subtypes are transmitted to domestic poultry like chickens and turkeys. By few mutations in their haemagglutinin they may develop into highly pathogenic avian influenza (HPAI) viruses that can cause severe disease and up to 100% mortality in poultry.

Avian influenza virus infections in humans are usually limited to one or a few individuals and do not spread in the human population. However, if these avian influenza viruses require the capability to spread efficiently from human to human, an influenza pandemic could be imminent.

LESSONS LEARNED
1. WHO and the EU-Commission take flu very seriously. But countries are not prepared enough.
2. It is important to keep a close watch on the occurrence of mutations that have an impact on human to human transmissibility of avian flu viruses.
3. We have to be careful with abstract figures: a fatality rate of 1-2% is bad enough and exceeds that of the Spanish flu of 1918.
4. There is no reason why the next pandemic should be a mild one.
5. Pandemics have been around all the time. They will come back.

“The H5N1 virus has strong pandemic potential, and so have many other flu viruses.”
Prof. Dr. Peter Openshaw, Imperial College London, UK, ESWI Vice-Chair

Most people infected with pH1N1/09 influenza had mild or unapparent disease, but some adults and children suffered badly. Whilst normal seasonal flu tends to kill elderly and debilitated people, the pandemic flu strain tended killed many young adults. Prof. Dr. Peter Openshaw of Imperial College London, UK (ESWI’s Vice-Chair), speculates about why this might be.

How the Influenza A/H1N1 Pandemic Affected the UK

The First Two Waves

Focussing on the UK outbreak, Openshaw described the evolution of the 2009-10 influenza pandemic and the phased UK Pandemic Plan. The novel influenza strain spread in three very distinct waves, the first two being during the WHO-declared pandemic period. The first wave was seen in May-June 2009, at which time there was great uncertainty about the case fatality and very little information about how many mild community cases there were. The second wave hit in October 2009 and lasted until January 2010. During these two waves, a total of more than 30,000 flu cases were reported in the UK, of which 5,000 patients were admitted to hospital. The UK’s department of health reported 457 deaths, but this is certainly an underestimate of the total mortality.

“The first wave coincided with the end of the spring holiday, when children went back to school”, Openshaw said. “There were at least 17 genetically distinct introductions of flu into the UK, and the rate of spread diminished very considerably when schools were closed for summer holiday. The second wave happened when children went back to school in the autumn, and peaked when some severe winter weather hit the UK in the run-up to Christmas. Tragic cases of devastating disease or even deaths in children and the apparent importance of school-aged children in spreading the disease fuelled calls for widespread vaccination of children, who are not normally vaccinated in the UK.”

A-Typical

Dealing with pandemics means dealing with great uncertainty; preparing for the worst and hoping for the best. The A/H1N1 pandemic proved to be quite different from seasonal flu, which causes death mainly in the elderly and in those with other diseases like heart and lung problems. This new flu strain killed mainly children and young adults. “The biggest increase in deaths was in the 17-39 year age group”, Openshaw said. “It led to a 37-fold increase in bed-days due to influenza in this age-group.” Openshaw quoted Sir Liam Donaldson, England’s chief medical officer during the pandemic, who spoke of ‘a mostly mild infection that sometimes killed’. “That sums up things really well”, Openshaw said. “Many people got infected but were fine; however the very unlucky few suffered really badly. We still don’t know why, but we are trying to find out.”

Looking at Risk Factors

Two large studies were carried out in the UK, based on studying hospital patients. The Department of Health funded the flu clinical information network, Flu-CIN. This was an audit project that aimed to collect clinical information fast. It focused on providing real-time data and looked at risk factors for hospitalisation. The major study was the Mechanisms of Severe Influenza Consortium (MOSAIC), involved patients admitted to 11 UK hospitals, linked to a network of UK Laboratories and focused on discovering the mechanisms of the disease. A remarkable cascade of data continues to accumulate from these linked investigations.

The Flu-CIN hospital study found that asthma was the most common underlying condition in hospital cases. Even mild asthma increased the risk, and patients were not necessarily on steroids. Second came heart disease, followed by diabetes, COPD and sickle cell disease. “An analysis of first wave victims revealed 60% of people admitted were from non-white ethnic backgrounds”, Openshaw said. “Pregnant women and children under the age of 5 were extremely vulnerable. Almost 20% of patients who enrolled in the MOSAIC study were pregnant. 13% ended up in intensive care, of which one third died. This really shows just how devastating the disease could be. And
although there are risk factors, it is important to stress that 55% had no underlying risk factor and were previously thought to be healthy. That’s very different from what we see with seasonal flu.”

The Flu-CIN study also revealed 30 cases of hospital-acquired infections out of a total of 1520. “Most of them had serious underlying illnesses”, Openshaw said. “53% needed intensive care. 27% of patients died. Again, a strong reminder that all staff and at-risk patients should be vaccinated.”

THE THIRD WAVE
After the first and second waves subsided, the pandemic was declared over. But in December 2010, the UK was struck by an unexpected third wave. It would prove to be the most severe of the three, with at least 535 confirmed influenza deaths. “It was a very destructive wave. Again pregnant women were at risk”, Openshaw said: “One of the reasons it was so bad was perhaps the change in policy with regards to antivirals and vaccination. We went back to the old seasonal recommendations. The many doctors, the press and the public had become complacent. We were partly to blame for this: the message that we gave out was that flu was over and it really was not as bad as we feared it might have been.”

WORK IN PROGRESS
“To paraphrase Donald Rumsfeld, there are known factors that explain the variations in severity but also there are many known unknowns and even unknown unknowns still to discover. But we all agree we have to maintain our state of preparedness for another pandemic”, Openshaw said. “The MOSAIC study is unique in providing all the available information to give an integrated picture of the causes of severe influenza. We have gathered 8000 samples and are still analysing. So far, we have identified one gene defect (on a gene called IFITM3), which is present in 1 out of 400 of the general population and but 1 in 20 of our hospitalised cases. That means it is a remarkably important high-risk factor. But we are sure there are many discoveries waiting to be made.”

LESSONS LEARNED
1. During the A/H1N1 pandemic, asthma was the most common underlying condition resulting in hospital intake.
2. School-aged children can suffer very badly in flu outbreaks and are major spreaders of disease.
3. Pregnant women and children under the age of 5 were extremely vulnerable.
4. Six out of 10 of people admitted to UK hospitals in the first wave were from non-white ethnic backgrounds.
5. A defect in a gene called IFITM3, present in 1 in 400 of the general population, puts people at risk of severe disease.

“Many people had minor diseases, however the very unlucky suffered badly. We still don’t know what determined the enormously variable outcome.”
21st century health care needs 21st century thinking. Reaching vaccination targets demands a new approach to the act of vaccination itself. The administration of vaccines at pharmacies has the potential to further increase vaccine uptake by the public. "When pharmacists also administer vaccines, everybody benefits", said Pamela Logan, Director of Pharmacy Services, Irish Pharmacy Union in Ireland.

FREQUENT CONTACT
"We are not going to reach the 75% vaccination targets if we act like we have always done", said Pamela Logan. "Pharmacists can play an important role when it comes to bringing vaccination to more people. They can act as vaccination ambassadors, communicating on the importance of getting vaccinated. And most importantly, they are visited by people of all ages and from all social groups. Of all health care professionals, pharmacists generally have the most frequent contact with patients. They are ideally placed to provide all these people with an easy-to-access vaccination service."

HIGH PATIENT SATISFACTION
Observational studies demonstrate that the novel approach certainly works. Enabling pharmacists to vaccinate increases the population reach. In Portugal, nearly a quarter of all influenza vaccines dispensed between October 2008 and March 2009 were administered in pharmacies. "The reported rates of patient satisfaction were high", said Logan, "and the increased convenience of pharmacies providing vaccination services is very much appreciated: 98% would get vaccinated in a pharmacy again and recommend pharmacy vaccination to others. It was also reported that 13% of people vaccinated in pharmacies had never been vaccinated, demonstrating the role of pharmacies in increasing vaccine uptake."

Pharmacy Vaccination Services are already available in Ireland, Portugal, the UK, the US, Canada, New Zealand and Australia. The service systems are different from country to country. Seasonal flu vaccination is the service most frequently provided.

21ST CENTURY THINKING
"21st century health care needs 21st century
thinking”, said Logan. The system not only improves vaccine uptake, it also benefits both pharmacists and general practitioners. “Pharmacists stepping in make life easier for general practitioners, helping them to deal with their workload”, said Logan. “People are free to make their own choices. An influenza vaccination poster seen at the pharmacy could eventually inspire people to visit the general practitioner.”

**REGULATORY FRAMEWORK**
Safety is certainly a concern. Doctors know the patient’s history. Logan admits experiencing resistance from general practitioners on this point, stressing the need for more collaboration. Logan said that guaranteeing safety is simply a matter of appropriate training, clinical measures and a quality-monitoring framework. Pharmacy vaccination legislation in Ireland requires pharmacists for example to complete a specific accredited training programme on vaccination as well as management of anaphylaxis, resuscitation and recognising adverse reactions. Pharmacists are also required to notify the health service and the general practitioner within 7 days of a person being vaccinated. Records of people vaccinated must be kept in the pharmacy. In the case of a recall, these records provide all the information needed. The patient also has to remain in the pharmacy consultation zone for 15 minutes after vaccination, just in case adverse reactions occur.

People are also willing to pay a pharmacist for a vaccine, even in a social system where a visit to a general practitioner would make this vaccine free of charge. “The perception that people are not willing to pay for a vaccine is not true, despite what other research shows”, said Logan, “because they are not obliged to make an appointment with a general practitioner and they can save time.”

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**Pharmacy records**
Pharmacists in Ireland must keep records of people vaccinated. These records must include:

- name of vaccine, batch number, expiry date, dosage
- name of pharmacist
- date of administration
- patient name, address, age/date of birth
- patient’s general practitioner (if known)
- medical card entitlement or national insurance number
- medical conditions
- allergies
- confirmation of information supplied
- signed patient consent

**LESSONS LEARNED**
1. Pharmacists are ready and willing to help reach 75% influenza vaccination targets.
2. Pharmacies are frequently visited by people of all ages and social groups and thus are ideally placed to provide all people with easy access to vaccination.
3. Observational studies demonstrate that enabling pharmacists to vaccinate increases the population’s vaccine uptake.
4. Patients appreciate the increased convenience of pharmacies providing vaccination services.
5. Ensuring safety is a matter of building an appropriate regulatory and professional framework and requires specific staff training programmes.
UNIVERSAL RECOMMENDATION MAKES THINGS SIMPLE

The US policy to provide routine influenza vaccination to all people from the age of 6 months emphasises the importance of preventing influenza across the population spectrum. A universal recommendation reduces barriers to get more people protected.

**PRAGMATIC APPROACH**
In February 2010, the US Advisory Committee on Immunisation Practices (ACIP) expanded the recommendation for annual influenza vaccination to include all people from the age of 6 months for whom the vaccine is not contraindicated. It is also recommended that vaccination efforts should begin as soon as the seasonal influenza vaccine is available and continue through the influenza season.

Influenza not only causes severe illness in any age group, resulting in a high number of hospitalisations and deaths, it also confronts the US economy with a significant cost burden of 8.7 billion USD annually. The novel universal recommendation must make it easier to get more people vaccinated. Previously in the US, seasonal flu vaccination was recommended for all children between 6 months and 18 years and for all adults over 50. People between 19 and 49 were recommended for vaccination when they could be linked to a list of high-risk groups or were health care workers, residents of nursing homes or other long-term facilities, or part of a household of high-risk individuals. This detailed segmentation for 19 to 49 year olds made things too complex.

**REDUCING BARRIERS**
Vaccination policies should be very clear and easy to apply. "Vaccination is a cornerstone of influenza prevention and provides a potential benefit for people in all age groups", said Litjen Tan of the American Medical Association. "Morbidity and mortality occur in all age groups, including people between 19 and 49. It also appears that many people who have influenza complications have no previously identified risk factors or they do have risk factors but are unaware that they should be vaccinated. Others might be at risk due to newly identified risk factors, such as morbid obesity or ethnicity."

"A universal recommendation eliminates the need to determine whether the person has an indication for a vaccination. It is a very pragmatic approach. If the person has a pulse and is over the age of 6 months, then vaccinate."

**COVERAGE RATES**
The universal recommendation is certainly paying off, as figures indicate. Coverage estimates...
from a US national flu survey show a rise in influenza vaccination for all age groups. Compared to the 32.8% in November 2010, the vaccination coverage percentage rose to 36.3% in November 2011. The estimates for health care workers indicate a rise from 55.5 to 63.4%.

The existence of a universal recommendation does not in itself guarantee success. People should be aware of the recommendation, and efforts directed at populations that need to be vaccinated remain critical. “A universal recommendation does not guarantee we are reaching those who really need to be vaccinated”, Litjen Tan said. “But we notice that groups that need to get vaccinated follow along, just because we say everybody needs to get vaccinated.”

People should also have access to vaccine products. “If the US does not develop an infrastructure to deliver influenza vaccines to its entire population, it remains vulnerable during times of crisis when the ability to reach 250 million adults with vaccines is crucial. The failure to successfully immunise adults in healthy times predicts our failure to immunise them in times of crisis”, Litjen Tan said, who is also convinced that “recommendations drive infrastructure development, and not the other way around.”

MOVING FORWARD
Policy-makers have to consider many things. Furthermore, since the landscape of influenza vaccine development is rapidly evolving, policy-makers also need to be flexible. Tan recognises that all change is difficult: “Policy change may be difficult to accomplish in the absence of an external threat. Fear is a strong disincentive, but in the US, evidence now shows that manufacturers are able to produce adequate vaccines. Also, public health policy must always be conducted in an environment where you have less data than you would like. You always need more data. But absolute clarity is not achievable. At some point, you just have to move forward”, Tan concludes.

“The reason for switching to a universal vaccination is that everybody would benefit.”

LESSONS LEARNED
1. The failure to successfully immunise adults in healthy times predicts failure to immunise them in times of crisis.
2. A universal recommendation eliminates the need to determine whether a person has an indication for a vaccination.
3. A universal recommendation does not mean we don’t have to make sure we reach those who really need to be vaccinated.
4. Health care employers play a key role when it comes to preventing and containing flu. They have to undertake personal initiatives to vaccinate their personnel.
5. The best way to prevent transmission of influenza to patients is to mandate vaccination of health care workers.
The best way to prevent transmission of influenza to patients is through the vaccination of health care workers. Health care workers should set the example. They are the key element when it comes to convincing people to get immunised.

KEY ROLE
Every profession has its responsibility. That certainly is the case for health care personnel in the broadest sense of the word. “Health care personnel should set an example. They should get vaccinated themselves. Not only because of the evident patient safety issue and to protect their family, but also to illustrate the importance of influenza vaccination. And I also include laundry staff, cleaning staff, administrative workers, etc. When it comes to the responsibility to prevent flu, everybody working in a health care institution is to be considered a health care worker.”

Two randomised controlled trials in nursing homes evaluated the impact of health care personnel influenza vaccination on residents. They indicate a 40% decline in overall mortality among residents in the case of high employee vaccination levels, regardless of patient vaccination levels. Another randomised controlled trial showed that 26% of the non-vaccinated medical personnel had suffered from an influenza infection, while 42% could not recall having any respiratory infection. Health care workers have an ethical obligation to be vaccinated, but also need to consider personal reasons”, said Litjen Tan. “The health care worker’s recommendation is the main reason people decide to get vaccinated.”

Health care employers play a crucial role here. They have to undertake personal initiatives to vaccinate their personnel. Given the unmistakable benefits, and in order to avoid grey areas, influenza immunisation should become a condition for employment. “When vaccination is mandatory, there is 90% coverage. But mandates also require strong leadership and a partnership with all health care personnel, alongside a consistent focus on patient safety and welfare, in line with the ethics of the health care professions”, Litjen Tan said.

RECOMMENDATIONS FOR HEALTH CARE EMPLOYERS
In February 2012, faced with the lack of results in achieving the 90% influenza vaccination coverage for health care personnel using voluntary methods, the US National Vaccine Advisory Committee (NVAC) issued four recommendations.

The first states that all health care employers and facilities should establish comprehensive influenza infection prevention programmes, including education of health care personnel as a key component. The second recommends influenza vaccination programmes to be integrated into existing infection prevention programmes or occupational health programmes. Thirdly, efforts should be made to standardise the methodology used to measure influenza vaccination rates across health care settings. If the above measures do not result in achieving the 90% goal for influenza vaccination coverage of health care personnel in an efficient manner, the NVAC recommends that health care employers include influenza immunisation in the list of requirements for work.

“NVAC recommends strong consideration of influenza immunization as a condition of employment when its first three recommendations have been implemented without success, NVAC does not recommend directly a mandate. It is important that the NVAC does not stipulate the scope and content of the employers’ requirements”, Litjen Tan states. Facilities retain a certain degree of freedom: they may or may not include exemptions, other than medical exemptions, and they may or may not define consequences for non-compliance.”
Stockpiling Risks

Vaccination coverage in nursing homes needs to be improved, alongside a more professional prevention strategy and outbreak control, said Gaëtan Gavazzi of the Clinique Universitaire de Médecine Gériatrique in Grenoble (F). Also, reluctance factors need to be better understood.

rise in elderly population raises concerns

Collective Risk Factories

Mortality and morbidity rates related to flu rise increasingly with age. The morbidity rate of people aged 65 and older is 50 to 80%. Therefore, protecting older people is very important. “That we know”, said Dr. Gaëtan Gavazzi. “But we tend to forget that a large portion of flu-infected elderly people die from respiratory or cardiovascular complications, fever and strokes. It has also been proven that flu has a significant impact on the functional and nutritional status of the elderly, causing an additional death risk.”

The ageing population in the more developed countries also means that a larger part of the population will be at risk. This causes additional specific threats. “We must be aware of the implications of increasing longevity. The ageing population will be especially vulnerable to flu. The overall rise in life expectancy means the number of people ending up in nursing homes will increase. Nursing homes cumulate individual high-risk flu profiles. Community transmission further transforms nursing homes into collective risk factories. People who live or work in crowded nursing homes are all at risk”, said Gavazzi.

Typically, attack rates in nursing homes accompanying a winter peak flu outbreak reach 60%, with death rates of 10% observed. However, the incidence of an outbreak also dramatically decreases when vaccination coverage is as high as 80%, said Gavazzi.

Vaccination is effective

Data surrounding flu vaccination often invites competing interpretations. This is particularly the case with regard to the effectiveness of influenza vaccination for the elderly. “We need to be aware of the 30 to 50% reduced vaccine efficacy for older people. Immune function declines with age, making elderly people less responsive to vaccination. Also, the duration of efficacy is quite controversial, but seems to be decreased.”

Both have a negative effect on the reputation of flu vaccines. “Some say it is not appropriate to vaccinate elderly people, unless in long-term care facilities and nursing homes”, stresses Gavazzi. “Vaccination is quite efficient, decreasing morbidity, hospitalisations, and mortality by 35 to 65%”, Gavazzi adds, referring to the high risk of nutritional and functional deterioration that coincides with flu and should be avoided.

All these considerations highlight the need for an adequate prevention strategy in nursing homes. At
the heart of this strategy lies
the vaccination of residents
and health care workers.
Alongside this, outbreak
control is key, combining
eyearly diagnosis, hygiene,
treatments and measures in
order to prevent diseases
and health problems.
"Especially in nursing homes,
antivirals should be readily
available", said Gavazzi.

UNDERSTANDING
BARRIERS
Today, vaccination rates of
the elderly in nursing homes
and long-term care facilities
are very variable: 85% in
France with little variability;
80% in Canada with wide
variability. On average,
coverage rates of 50 to 90%
are observed, explaining the
existence of flu outbreaks.

"Next to an adequate
prevention strategy and
outbreak control, vaccination
coverage in nursing homes
needs to be improved", said
Gavazzi. Programmes most
certainly have to include
free of charge vaccinations,
imunisation tracking
programmes and specific
information campaigns.
"We will be confronted
with exactly the same
barriers that put limits
on similar programmes:
misperceptions leading to
a 5 to 20% refusal, lack of
facility leadership and a high
staff turnover or inadequate
staffing", Gavazzi said.

Vaccine coverage of health
care workers in nursing
homes varies between 10%
and 50% in Europe and
is 40% in the US. "When
health care workers don’t
want to get vaccinated, they
will not request it for the
residents either. Therefore,
it is imperative that factors
leading to acceptance or
reluctance of vaccination
should be better understood.
Health care workers should
be convinced of the added
value of vaccination", Gavazzi
said. "Vaccination promotion
and vaccine coverage should be
qualified as a quality
indicator for public health",
he concludes.

"Flu has a significant impact on
the functional and nutritional
status of the elderly, causing an
additional death risk."

LESSONS LEARNED
1. The rise in life expectancy also means the
number of people ending up in nursing homes
will increase.
2. Nursing homes cumulate individual high-risk
flu profiles. People who live or work in nursing
homes are all at risk.
3. The incidence of an outbreak dramatically
decreases when vaccination coverage is as high
as 80%. Today coverage rates in nursing homes
vary from 50 to 90%.
4. Vaccination rates in nursing homes need to be
improved, in combination with an adequate
prevention strategy.
5. In order to be successful, it is imperative that
factors leading to acceptance of or reluctance to
vaccination should be better understood.

Determinants for acceptance of vaccination
- presence of chronic illness
- working in health care for more than 15 years
- perceived high personal risk
- perceived reduction of personal risk
- awareness of the existence of a guideline
- agreement with the existing guideline
- social influence of people close to the health care
  worker
- influence of media attention on avian influenza
- all health care workers should get vaccinated
- health care workers should get vaccinated because
  of their duty not to harm
- information received through an information
  meeting
- information received from a nursing home physician

Determinants for reluctance to vaccination
- fear of adverse effects
- beliefs in vaccine ineffectiveness
- lack of information
- organisational issues
- alternative procedure to protect
- bad reputation of flu vaccine
- bad image among elderly population
PROF. DR. ANNE MALFROOT, Paediatric Pulmonology Clinic, UZ Brussels, Belgium / Board member Belgian Cystic Fibrosis Association

THE NEED FOR PERSONALISED COMMUNICATION

More personalised information efforts are needed to prevent chronic disease subjects escaping from influenza vaccination. Patient organisations can play a major role in the roll-out of this more focused communication approach. “Patient information should be simple, correct and complete”, said Anne Malfroot, Paediatric Pulmonology Clinic, UZ Brussels (B).

CHRONIC DISEASES

“Many societal factors threaten to undermine the realisation of the public health gains that immunisation can achieve in the coming decade. Understanding these factors is imperative”, said Anne Malfroot.

Young chronically-ill children for example run a high risk of incomplete or delayed immunisation. “The disease itself can establish a false contra-indication. Chronically-ill children have a tendency to miss out on immunisation opportunities, due to school absenteeism, hospital admissions, etc., or the immunisation is lost in complex multidisciplinary care”, Malfroot said. However, other chronically-ill subjects also risk missing out on vaccination, and influenza can have a strong negative impact on chronic illnesses, such as cystic fibrosis, making patients oxygen-dependent.

TARGETED CONTENT

This rather confusing context demonstrates the need for special vaccination recommendations aimed at the different groups of the chronically ill and, in the case of chronically-ill children, also the parents. “It all comes down to a more personalised communication approach, building on relevant and easy-to-access patient information”, said Malfroot. “Patient information should be simple, correct and complete. In certain cases, this also means we should be honest about the reduced effectiveness of vaccines.”

“Patient organisations can help fine-tune and distribute information to their specific target group of chronically-ill people”, Malfroot said. For example, the Cystic Fibrosis Foundation publishes information on its website, specifically aimed at CF patients. These webpages explain how to keep themselves and their families as healthy as possible in times of flu. They also provide information on possible side effects and provide answers to frequently asked questions such as ‘What should I do if I think I have, or my child with CF has, the flu?’ , ‘Is the flu vaccine one shot or two?’ and ‘Can a person with CF get a nasal spray version of the flu vaccine?’ The Belgian

PATIENT ORGANISATIONS CAN HELP

PROF. DR. ANNE MALFROOT, Paediatric Pulmonology Clinic, UZ Brussels, Belgium / Board member Belgian Cystic Fibrosis Association

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Cystic Fibrosis Association [BVSM-ABLM] publishes a reminder about the importance and practical aspects of the flu vaccination in their late summer and autumn newsletters.

MORE DATA
Complementary measures should include improving the information provided to general practitioners and other experts about the differences between seasonal flu and pandemic flu and the relevance of vaccination. Information gaps and lack of evidence are giving rise to competing interpretations. "There is a strong need for data that can help patients and patient organisations, by convincing general practitioners of the relevance of vaccination. At the same time, accessibility to information needs to be improved", Malfroot said.

Malfroot also draws attention to the fact that adults are becoming more susceptible to vaccine-preventable diseases like measles, varicella, bacterial infections – pertussis, etc. "The public need to regain confidence in immunisation and the organisations responsible for the research, development and implementation of vaccines. People should also be made more aware of the importance of healthy hygiene and protective measures", Malfroot said.

Flu protection can actually be carried out very easily, for example: getting the flu vaccine, cleaning your hands with soap and water often and using alcohol-based hand gel, staying away from others when you are ill, covering your nose and mouth with a tissue when coughing and sneezing, throwing the tissue away and then cleaning your hands, and avoiding touching your eyes, nose and mouth. Germs spread this way.

LESSONS LEARNED
1. Chronically-ill patients risk missing out on vaccination.
2. More personalised communication efforts are needed.
3. Patient information should be simple, correct and complete.
4. Patient organisations can help fine-tune and distribute information to their specific target group of chronically-ill people.
5. There is a strong need for complementary data to help chronically-ill patients and patient organisations, and it is very important to convince general practitioners of the relevance of vaccination.

“Patient organisations can help fine-tune and distribute information to their specific target group of chronically-ill people.”
JOINING FORCES IN TURKEY

THE POWER OF A STAKEHOLDER NETWORK

LIMITED AWARENESS AND INTEL
Turkey covers an area of 775000 km². Despite numerous communication and awareness-raising efforts, vaccine uptake in its population of 72.5 million is low, even among risk groups. “The estimated number of people in risk groups is at least 22 million. We have 428000 health care workers in public institutions. Despite these figures, the total number of vaccines sold in 2010 was only 2.3 million, though this represents a slight increase in sales. However, sales don’t indicate that risk groups get vaccinated. In addition, ‘sold’ does not necessarily mean ‘used’”, Dr. Meral Akçay Ciblak said.

In Turkey, national flu surveillance started in 2005. “Before that, we did not know when the season started and ended. Since then, we have learned that the virus circulating in Turkey is different from the virus in Europe. This is quite important when it comes to matching vaccines to the circulating virus. We at the Grip Platformu were aware of that, as was the Turkish Ministry of Health (MoH). But this information was only shared with a limited amount of partners.”

In 2005, a new reimbursement policy also came into force. “Risk groups currently pay 20% of their vaccine. Risk groups of retired people pay only 10%. But a lot of people don’t know they belong to a risk group. Health care workers get the vaccine free of charge. However, the late arrival of vaccines resulted in low vaccination rates in this target group. Furthermore, their usage is not monitored.”

STAKEHOLDERS COME TO SIT TOGETHER
Confronted with limited flu awareness and incomplete data gathering, the MoH looked for novel ways that would strengthen and support the national health activities. In February 2011, the MoH met with ESWI representatives to discuss possible strategies to raise flu awareness in the country. It soon became clear that the already proven ESWI strategy of linking stakeholders by building strong national influenza stakeholder networks would make it possible to both rapidly increase the number of messengers of the influenza issue and streamline communication efforts.

No time was wasted. On June 13th 2011, the Turkish stakeholder network Grip Platformu was established. “The stakeholder network facilitates the flow of information”, Akçay Ciblak said. “We now have 20 people on board representing different organisations, and we are open to expansion.”

NEW PROJECTS
From the start, new goals were set and a strategy was developed. Akçay Ciblak: “Our newsletter, the ‘Influenza Bulletin’, is distributed electronically to all members of the network. All our members are contributing to the Grip Platformu website ... We have rolled out our ‘Protect Yourself, Protect
your Patient’ project. We determined the knowledge level and behaviour of the physicians and are currently investigating the needs to be met to get physicians to be actively involved. We know they know about influenza. But they are not administering vaccinations to themselves and they are not vaccinating their patients.”

The Grip Platformu is also developing projects to produce segmented and local information “on the influenza rate in local hospitals, the economic impact of flu on banks, etc. When local officials request local data, it is better to give them local data”, Akçay Ciblak said.

**FIRST RESULTS**

“Results are already there. Not only is surveillance information distributed to a larger amount of people, the network also succeeded in convincing the Social Security Institution to make vaccines free of charge. Close communication with the MoH resulted in the timely arrival of vaccines to health care workers. Furthermore, communication with physicians resulted in an increase in vaccine uptake, from 2.5 million doses to 2.7 million doses. But most importantly, non-active organisations have become active in influenza. And all organisations are trying to see what they can do.”

**LESSONS LEARNED**

1. Accurate and complete data gathering is important for determining action goals.
2. Sales don’t indicate that risk groups get vaccinated. In addition, ‘sold’ does not necessarily mean ‘used’.
3. It is important to be able to deliver segmented and regional data and information.
4. Strong stakeholder networks make it possible to both rapidly increase the number of messengers and streamline communication efforts.
5. Fighting against influenza is a responsibility shared by all stakeholders.

“When local officials request local data, it is better to give them local data.”
Viruses have a quickening effect on the majority of asthma aggravations. Vaccination could help. But is vaccination effective and safe in asthmatic patients? Yes, it is. "What’s more, increased efforts are needed to improve vaccination levels among asthmatics, particularly in the 18 to 49 year age group”, said Dr. Chrysanthi Skevaki of the University of Athens Allergy Unit (GR), also representing the European Academy of Allergy & Clinical Immunology (EAACI).

"The vast majority of asthma exacerbations are precipitated by a respiratory infection.”
“Increased efforts are needed to improve flu vaccination levels among asthmatics particularly in the 18 to 49 age group.”

 may be more likely to attend primary care and therefore are more likely to become vaccinated. So these studies are subject to considerable bias.”

“A trial with patients randomly receiving a placebo or a high-dose or low-dose TIV-vaccine demonstrated that protective antibody titer and serologic response were similar between groups with different steroid intake. However, a further analysis showed an attenuated response to the influenza B antigen among the high-dose inhaled corticosteroid (ICS) medicated group versus the patients who were not receiving steroids at all.”

**INCREASED EFFORTS**

“We know that the vast majority of asthma exacerbations are precipitated by a respiratory infection, with rates of up to 95% among preschool children, 85% among school children and 80% among adults”, Skevaki said. “We also know health care utilisation that is attributable to influenza is high among asthmatic children and indeed higher than among healthy children. Moreover, vaccines are safe and effective, and the risk of acute asthma exacerbations immediately after vaccination is negligible. Therefore, increased efforts are needed to improve vaccination levels among asthmatics, particularly in the 18 to 49 year age group. Education on vaccine efficacy and safety should be one of the priority health measures taken.”

**LESIONS LEARNED**

1. Viruses have a quickening effect on the majority of asthma aggravations.
2. Flu-attributable health care utilisation is high among asthmatic children and adults.
3. Vaccines are safe and effective. Moreover, the risk of acute asthma exacerbations immediately after vaccination is negligible.
4. Increased efforts are needed to improve vaccination levels, particularly among patients younger than 50.
5. Education on vaccine efficacy and safety should be one of the priority health measures taken.
NURSES IN THE UK

AT THE FOREFRONT OF THE FIGHT AGAINST INFLUENZA

"Nurses working in primary care or treating patients with long-term illnesses are ideally placed to offer flu education”, said Education for Health trainer Erica Haines. Education for Health is a UK-based charity organisation providing education to enable practice nurses to extend their roles.

FLU CHAMPION
The UK Public Health Hospital Practice Guide requires health care centres to appoint a 'Flu Champion'. Often this will be a nurse. "A 'flu champion' is responsible for meeting flu targets and coordinating the flu prevention programme: looking at registers, managing stocks, keeping records, inviting patients to come in or arrange home visits, checking that these people do come and, if they don’t, reminding them by giving them a telephone call... although it is not unusual to text patients now", said Erica Haines. Education for Health promotes the role of practice nursing and provides high quality education to enable practice nurses to extend their roles. The organisation is providing training courses and programmes in over 47 countries.

MULTIDISCIPLINARY ROLE
Haines also draws attention to the multidisciplinary role of nurses. Nurses work in secondary care and outpatient departments, nursing a huge influx of patients. Nurses are also present in other social care settings, such as walk-in centres at train stations and football grounds, schools, occupational health services and NHS Direct, which is a telephone service offering advice to patients.

PRIMARY CARE
It is also the UK’s government policy to shift care from hospitals to the community. The policy of moving care from physicians to nurses led to a huge influx of nurses into primary care clinics and nurses setting up clinics. The UK has witnessed a formidable growth of primary care practice nurses. In 1995-2005, their number rose by 41.5% to 13800 and has grown ever since.

CONTACT POINT
Nurses in primary care look after patients with all kinds of diseases. "Nurses do all sorts of things", said Haines, "they open clinics, they offer various health promotion services like obesity management, quitting smoking, cardiovascular prevention control, etc., they nurse patients with asthma, COPD, diabetes and other long-term illnesses. Nurses are in daily contact with chronically-ill patients. They are ideally placed to offer health education and to talk with these patients about flu vaccination."

"A ‘flu champion’ is responsible for meeting flu targets and coordinating the flu prevention programme.”

"Nurses are in contact with chronically-ill patients on a daily basis. They are ideally placed to talk with these patients about flu vaccination.”
Quality and Outcomes Framework

The UK policy of relating a general practitioner’s income to achieving health care quality standards dates from 2004. The standards to meet are defined in a Quality and Outcomes Framework (QOF). General practitioners are paid according to points gained for improving health management of their patients. QOF’s quality regulations have resulted in much more attention paid to patient risk profiling; patients are asked to fill out questionnaires so that they can be assessed and managed correctly and in time. The quality and result-driven framework aims to improve the health care processes. And since payment depends on health targets met, health promotion is also receiving increasingly more attention.

LESSONS LEARNED

1. Health care centres in the UK are obliged to appoint a flu champion who is responsible for meeting flu targets and coordinating the flu prevention programme.
2. The flu vaccination target for patients over 65 years is 75% in each practice. The same goes for patients belonging to a clinical risk group.
3. In the UK, general practitioners are paid according to points gained for improving health management of their patients.
4. The use of imposed quality regulations and a result-driven reward system is a driver for the improvement of the health care processes.
5. Nurses are in contact with patients on a daily basis and are ideally placed to talk about flu vaccination and health education.
Each and every year, flu places a substantial burden on the wellbeing of children and their families. Kids tend to get the flu more often than adults, and end up in hospital more frequently because of flu-related illness and complications. An overall immunisation of young children would decrease the burden of disease in them, their families and society, said Dr. Maria N. Tsolia, Department of Paediatrics, University of Athens (Greece), to her ESWI audience.

**HIGH ATTACK RATE**
Compared to adults, children tend to be more vulnerable to flu infection. Young children commonly also need medical care because of influenza. In 2006, Dr. Maria N. Tsolia published a report examining the impact of influenza on outpatient visits in Greece. In 2003-2004, influenza accounted for 13.5% of all child outpatient visits and for 39% of all child outpatient visits for febrile respiratory infection. 58% of the children were under the age of 5. In 40% of the child influenza cases, antibiotics were administered.

“This high attack rate on children can be explained by their lack of previous exposure and the crowding in schools and day care centres”, Tsolia said. The element of close interaction creates the ideal environment for a virus to spread. Over the course of a flu season, attack rates of 20-30% to 50% in day care centres are no exception. Tsolia’s research data demonstrate that the number of children under the age of 5 hospitalised each year because of influenza infections is high. The younger the child, the higher the risk of ending up in hospital; especially those under the age of 1. For young children suffering from a health condition like asthma, diabetes or a heart disease, the number of influenza-associated hospitalisations is even more staggering. Influenza-inflicted complications can be respiratory - croup, bronchiolitis, pneumonia, and asthma exacerbation - or non-respiratory - febrile seizures, encephalitis, encephalopathy, acute myositis, myocarditis, pericarditis and Guillain-Barré syndrome.

**CALL FOR ACTION**
“Seasonal flu vaccination is the best method to protect children against flu and its potentially severe complications”, Maria N. Tsolia said. “In addition, it would also counter the excess use of antibiotics and absenteeism at school. Not to mention the loss of parental workdays and the transmission of influenza.” Maria N. Tsolia can think of no reason why influenza immunisation of healthy
The immunisation of young children will decrease the burden of disease in them, their families and society, and counter the excess use of antibiotics and absenteeism at school.”

Children should not be recommended. “Both the Trivalent Inactivated Vaccines and the Live Attenuated Influenza Vaccine – that can be administered by a nasal spray - are safe and provide substantial protection for children”, she said, also stressing the need for new vaccines that will be able to elicit stronger, broader and longer lasting immune responses. The safety of new influenza vaccines should be examined by paediatric studies. Post monitor surveillance studies should monitor the safety of old and new vaccines.

Just as the burden of influenza differs from one flu season and one country to another, the number of deaths among young children also varies. In the US, where all lab-confirmed influenza deaths are reported, the number of recorded child deaths from the 2009-2010 pH1N1 is 300. But some estimates put that death toll higher, at up to 1000 children.

LESSONS LEARNED

1. Accurate and complete data gathering is 1. The number of children under the age of 5 hospitalised because of influenza infections easily outnumbers adults.
2. A flu vaccine is the best method to protect children against seasonal flu and its potentially severe complications.
3. In addition, it would also counter absenteeism at school and the excess use of antibiotics.
4. Both the Trivalent Inactivated Vaccines and the Live Attenuated Influenza Vaccine are safe and provide substantial protection for children.
5. There is a need for new vaccines that elicit a stronger, broader and longer lasting immune response.
Patients visit a doctor to receive treatment, not to get sick. The mission of ensuring patient safety in each healthcare setting should include influenza vaccination of all personnel. But a mandatory vaccination of all health care practitioners remains a difficult topic. "Making something mandatory is always poorly accepted", said Vincenzo Costigliola, President of the European Medical Association.

THE VITAL ROLE OF HEALTH CARE PRACTITIONERS

AT RISK
Medical personnel are constantly interacting with patients and their families. "And in the case of influenza, we have a problem", Vincenzo Costigliola said. "Because of their contact with patients or infective material from patients, many health care workers are at risk of exposure to and possible transmission of vaccine-preventable diseases. Physicians, nurses, emergency medical personnel, dental professionals, medical and nursing students, laboratory technicians, hospital volunteers and administrative staff: all these people are exposed to the risk of infection."

"Medical personnel should shield themselves from influenza, not only to keep themselves safe but also to limit the potential spreading of an influenza outbreak.

For this reason, the mission of ensuring patient safety in each healthcare setting should include influenza vaccination of all personnel", Costigliola said.

RECOMMENDED OR MANDATORY?
Immunisation is recommended by all international organisations, including the European Medical Association (EMA). The EMA is founded by doctors for doctors. Its goal is to better inform doctors, because 'better informed doctors make for better-treated patients'.

In Costigliola’s view, the general practitioner should set a clear example when it comes to vaccination. "The role of the general practitioner in fighting flu is clearly crucial", Costigliola said. "The first patient is the doctor. Every day, his/her key responsibility is to be protected and to protect patients. We encourage doctors to get vaccinated before the influenza period starts."

But a mandatory vaccination of all health care practitioners remains a difficult topic. "Vaccination is strongly recommended. Making something mandatory is always poorly accepted", Vincenzo Costigliola said.

Also, prevention habits are crucial to avoiding contamination. "Much can still be done. In Japan people wear mouth masks on the street. It is a very common sight. But even in our hospitals and consultation rooms, mouth masks are not so common." Wearing masks, disinfecting offices and patient rooms, reducing all risk factors in the work environment... "we should also develop these important habits. Patients’ needs must come first", said Costigliola.

PREDICTIVE DIAGNOSIS AND PREVENTION
People can pass on the influenza virus without ever knowing it. It is also possible for a healthy person to unknowingly spread the virus to high-risk patients.

“We need to spend more time thinking about personalised medicine, including in the case of influenza.”
For that reason, Costigliola calls for a change in treatment approaches. "Right now, we start therapy once the first signs appear. But the fact is that healthy adults can pass the influenza virus to someone else one day before symptoms appear, and they can continue to infect others up to five days after getting ill.

"Therefore we need to move to predictive diagnosis and prevention. We need to spend more time thinking about personalised preventive medicine, including in the case of influenza", Costigliola said. This preventive, more personalised medicine is highly relevant if travelling in known flu hot zones such as South-East Asia. People receiving travel-related vaccination should be checked for significant individual health aspects that could pose serious health risks when infected with the flu virus whilst in foreign countries. This personalised risk assessment has to become a natural reflex of general practitioners and all other health practitioners offering travel immunisation services. Flu vaccination also needs to be included in all standard travel vaccination tick boxes.

LES SONS LEARNED

1. General practitioners should reduce all risks that could harm themselves and their patients.
2. The mission of ensuring patient safety in each health care setting should include influenza vaccination of all personnel.
3. Medical personnel should get vaccinated before the influenza period starts.
4. Prevention habits are very important for avoiding contamination.
5. Healthy adults can pass the influenza virus to someone else one day before symptoms appear, making predictive diagnosis and prevention necessary.
Partner Organisations

The European Scientific Working group on Influenza is a network of partner organizations that share the same goal: to reduce the burden of influenza in Europe.

Following partners support the ESWI Flu Summit:

- epha
- International Diabetes Federation
- EAACI
- World Health Organization
- ELF
- EMA
- ERS
- euregha
- National Influenza Vaccine Summit
- PGEU GPUE
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