MEETING REPORT

Understanding the behavioural aspects and the role of health communication in mitigating the impact of seasonal influenza

Stockholm, 20–21 January 2011

Executive summary

Healthcare professionals are key players in the implementation of vaccination programmes in general and in advising and delivering influenza vaccination in particular. Various studies in European Union (EU) Member States indicate a low uptake of the influenza vaccine among healthcare professionals, as well as European citizens belonging to risk groups. At the same time, there is often a high confidence expressed in doctors' advice on influenza prevention. Concerns regarding the effectiveness and safety of the flu vaccine among healthcare professionals and lack of their clear recommendation to patients (to get immunised) are strong obstacles to higher vaccination coverage among healthcare professionals, patients and the general population.

The critical role of healthcare professionals in the implementation of vaccination programmes can be enhanced through evidence-based interventions using, among others, specific health education, information, and by setting concrete influenza vaccination goals. Individuals and healthcare workers should be able to access, appraise and effectively use health-related information. Health literacy is a major factor to consider when looking at what drives behaviour in relation to seasonal influenza vaccination and when planning health communication. Annual vaccination campaigns have the potential to build awareness, motivate the public and ultimately to achieve high vaccination coverage. Key drivers towards seasonal influenza vaccination are the physicians' recommendations and their perception of the disease, as well as vaccine acceptability and adequate funding.

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1 Introduction

Influenza is a disease that affects Europe annually. Most people are considered susceptible to human influenza virus infection. The disease can be anything from mild to very severe and there are various estimates of the number of people that are infected each year. All age groups are affected, though the proportions of the exact groups vary from year to year and according to the dominant viruses and the level of population immunity. Some years, it is mostly children who are affected, other years, other age groups. Though death is considerably more common in older people and those with underlying health conditions (such as heart disease and chronic lung disease), severe disease and some deaths occur each year in healthy young and middle-aged adults and children. We learned from the most recent flu pandemic that pregnant women and young children were especially affected by the pandemic virus, but the risk extended also to other entirely healthy people.

The burden from influenza is twofold. Firstly, there is the severe disease and deaths. Secondly, the large numbers of mild-to-moderate cases result in time off work and losses to production, as well as pressure and costs on the health and social care services. The burden varies from year to year, which makes it hard to estimate the annual number of deaths or economic impact.

Despite the well-recognised merits of seasonal flu vaccination, the actual vaccination coverage in Europe is low. Evidently, a stronger commitment of public health authorities and healthcare professionals in charge of vaccination campaigns would entail higher coverage rates. Some EU Member States have already high vaccination coverage whereas others report a low uptake of the influenza vaccine. Healthcare workers are often the first contacts and key (most trustworthy) informants to patients about flu in particular and on issues related to vaccination. The knowledge, beliefs, emotional factors and attitudes towards influenza vaccination among healthcare workers and the general population, as well as understanding reasons for its acceptance or non-acceptance, play an important role in reaching higher levels of immunisation coverage in the future.

One of the strategies to improve influenza vaccination coverage in Europe leads through clear, evidence-based information, coupled with pan-European education campaigns and events (e.g. European Influenza Awareness Day/Week) addressed to all groups concerned. Awareness campaigns within a communication strategy should involve healthcare professionals in order to promote public trust, minimise uncertainties and increase acceptance of the influenza vaccine in European countries.

Addressing the issue of behaviour and the role of health communication in changing behaviour and mitigating the impact of seasonal influenza, ECDC organised a workshop with participation of behavioural scientists, experts in communication and public health professionals to exchange countries' experiences and discuss recent research on behavioural aspects of the population response to preventive measures regarding influenza. The workshop *Understanding the behavioural aspects and the role of health communication in mitigating the impact of seasonal influenza* took place at ECDC (Stockholm) on 20–21 January 2011.

2 Meeting objectives

The workshop's main purpose was to bring together behavioural scientists, experts in communication and public health professionals in order to exchange countries' experiences and recent evidence-based research regarding the main behavioural aspects of the population's response to preventive measures regarding influenza. The cluster of expertise allowed for discussions on health communication strategies that could be undertaken to better promote influenza vaccination and thus mitigate the impacts of influenza in Europe.

A comprehensive approach was chosen, contemplating both a focus on building capacity in health communication and on the healthcare professionals' role for uptake and promotion of the influenza vaccination.

Focus on health communication

- Develop new approaches to effective communication.
- Provide evidence-based and conceptual approaches to specific behaviour change techniques applied to health communication.
- Recognise the importance of socio-cultural/socio-economic influences on health beliefs and models.
- Draw evidence on behaviour change determinants and interventions in the context of seasonal influenza.
- Understand different audiences and the disparities among countries in the context of seasonal influenza.
- Understand the main health communication needs in the area of mitigating the impact of influenza.
- Promote communication skills and competences among public health professionals in the context of seasonal influenza.

Focus on healthcare professionals

- Understand what determines the cognitive (e.g. knowledge, attitudes) and emotional (e.g. commitment, trust) responses of healthcare professionals in relation to influenza immunisation.
- Identify key drivers and vaccination barriers among healthcare workers and general public.
- Develop the capacity to analyse, anticipate and respond to changing behavioural patterns of healthcare professionals.

Additional objectives

- Identify possible training needs at various levels.
- Increase the utilisation of EU-funded behavioural and health communication research.
- Determine how relevant a European Influenza Awareness Day/Week would be, as a framework to support health communication activities in the Member States.

3 Main discussion

3.1 Policies and practices

Despite the promotion of influenza immunisation in Europe (the scope and intensity of which vary among countries), the annual uptake of the vaccine among healthcare professionals and the general population remains low. During the meeting, experts from Poland[1], Estonia[2] and Norway[3] presented studies on influenza vaccination uptake among healthcare professionals and the general public. The results referred to self-reported reasons for rejecting or accepting vaccination. The three countries represent different levels of compliance with flu vaccination, from very low in Poland and Estonia to fairly high in Norway. In addition, these countries represent different models of organisation, financing, delivery of healthcare services and the role of the main actors in healthcare systems. The presentations identified some emerging issues on behaviours and attitudes towards influenza among healthcare professionals and the general population.

3.1.1 Countries' experience (presentations)

Poland: The country reports very low uptake of influenza vaccine among medical staff. Only 18% declared taking it in the season of 2009/2010. Moreover, 41.7% declared not receiving the vaccine within the last 10 years. Among reasons for rejecting vaccination, 25.2% declared lack of confidence in effectiveness and 15.1% feared the side effects of the vaccine. In addition, 43.7% did not accept vaccination even if vaccine was free of charge, and 51.1% of medical staff admitted convincing patients from risk groups to accept flu vaccination whereas only 16.5% declared convincing all patients.

Estonia: Figures from Estonia showed that 68% of country population declared no intention to get vaccinated in the season of 2010/2011 (only 3% accepted vaccination). Some of the strong arguments against vaccination declared by respondents were: disbelief in the effectiveness of the vaccine (42%), strong beliefs against vaccination (24%), or fear that the vaccine might be dangerous for health (20%). For 18% of respondents, the high cost of the vaccine is the major obstacle. For the vast majority of respondents, a physician remains the most reliable and trustworthy source of information about influenza and flu vaccination. However, most respondents get their information about influenza in print and online media, TV and radio.

Norway: During the influenza A(H1N1) 2009 pandemic and flu season, the National Institute of Public Health in Norway has been perceived as a major source of information on influenza vaccination. The Institute runs epidemiological surveillance, evaluates and informs about the epidemiological situation in the country. Information is provided to different levels of the healthcare system in the form of regular reports, press services and supporting materials for health clinics and GP surgeries. Services provided by the National Institute include regular communication with health personnel (via web, mail or telephone), web information for the public, posters on vaccines and hygiene advice, media activities and cooperation with patients' organisations. In response to vaccination criticism, experts of the Institute participated in a media debate with vaccination opponents explaining

[1] Presentation of the results of questionnaire 'Attitudes towards influenza vaccination among medical doctors in Poland' conducted by the National Institute of Public Health in Poland between December 2010 and January 2011. The group of respondents included 139 health professionals working in hospital wards, outpatient clinics, ambulance services, hospices and other places.

[2] Presentation of survey results conducted in September 2010 among 1 003 respondents (general population) of age between 16–65 years. Survey commissioned by the Estonian Health Board and conducted by the research company Klaster.

[3] Presentation 'Influenza vaccination in Norway – getting the message across', Norwegian Institute of Public Health, 2011.

safety and facts about flu vaccines. The expert from Norway presented information on vaccination uptake among persons below and above 65 years of age. In the group of people below 65 years and who are not chronically ill, 53% indicated the seriousness of disease as a major reason for vaccination. In the same group, only 22.7% indicated doctor's advice as a reason to accept vaccination and 38.2% indicated lack of doctor's recommendation as a main reason for not getting vaccinated. Among factors increasing likelihood of taking the influenza vaccine, 67.2% declared *"if recommended by a doctor"*. A large group declared willingness to take vaccine if they are provided with information on vaccine effectiveness, risk of adverse events and epidemiology of influenza.

3.1.2 Situation in EU Member States

Following the presentations from Poland, Estonia and Norway several participants confirmed the critical role of healthcare professionals in the implementation of vaccination programmes in their countries. In this context, mistrust of the effectiveness of the vaccine among healthcare personnel and lack of recommendations to patients may be one of main barriers for the general public to accept vaccination. Misunderstandings and lack of confidence in the effectiveness of the A(H1N1) pandemic vaccine among healthcare professionals resulted in a decline of public confidence in vaccination against seasonal influenza. In some countries, general practitioners and hospital doctors refuse to vaccinate their patients despite flu vaccines being free of charge. As there is still deficiency in science-based information on the effectiveness and risk of adverse effects of the flu vaccine, for many healthcare professionals the general news media remain the main source of 'scientific' knowledge.

Table 1 Barriers against vaccination

Healthcare professionals	General public
• Report missing scientific information on effectiveness and safety of vaccine. • Lack of confidence in the safety of influenza vaccine. • Small number of doctors recommending vaccination.	• Underestimate the problem of influenza. • Claim high knowledge about methods of influenza prevention (other than vaccination). • Manifest strong intention of not having vaccination. • Question the safety of flu vaccination. • High confidence in doctor's advice. • Get their information from the media.

3.2 Research

Several European studies confirm a low uptake of the influenza vaccine among European citizens (including risk groups), limitations in collecting and sharing information on national immunisation programmes, and high confidence in doctor's advice on flu vaccination among the general population.

The Analytical Report (Eurobarometer) on influenza A(H1N1) provided results of a survey about the vaccination campaign in 2009/2010. It indicates that among survey respondents, 65% (18 200) had no intention to take the vaccine against seasonal influenza – the highest rates of those who said 'no' to vaccine were in Latvia (82%), Slovenia (78%), Poland (75%), Bulgaria (74%) and Austria (75%). Among respondents, 98% were aware of the pandemic influenza, however more than half (57%) did not perceive it as a serious risk[4].

According to the survey, the most trusted source of information for European citizens are health professionals (32% declared complete trust and 49% mostly trust them). National and European health authorities were ranked as the second and third most trusted sources of information on pandemic influenza. Sixty-five percent of respondents were satisfied with the way authorities in their country tried to prevent the spread of the pandemic virus. At the same time, the media (TV, radio, newspapers) were less trusted by EU citizens, and the internet was the least trusted source of information. Personal hygiene (washing hands) was recognised by the majority as the key measure against the spread of pandemic influenza.

Results of the VENICE Influenza Survey[5] indicate that although WHO and EU targets for influenza vaccination coverage in all risk groups remain high[6], the actual vaccination coverage in these groups in EU countries remains

[4] European Commission Analytical Report (Eurobarometer), Influenza H1N1. Embracing results of survey run among the group of 28 000 randomly selected citizens in 27 EU countries and Norway, Switzerland, and Iceland. Results presented by representative of Health & Consumers Directorate General, SANCO C3 Health Threats.

[5] Survey carried out under VENICE Project that aims at improving vaccination programmes in the European Union and EEA/EFTA countries. It facilitates and enables collecting and sharing information on national immunisation programmes and impact of the newly introduced vaccination through a network of experts in vaccinology in 27 EU and 2 EEA Member States. Data is collected though web-based surveys. Description of activities, management of the project, data collection and results are presented at http://venice.cineca.org.

[6] In 2003, WHO recommended targets for influenza coverage for the elderly population on the level of 50% in 2003 and 75% by 2010. In 2009, the European Council recommended vaccination coverage goal for all risk groups on the level of 75% by the winter season of 2014/2015.

below target. This survey was conducted in 2009 and aimed at collecting information on seasonal influenza vaccine policy and immunisation programmes, changes in seasonal influenza vaccination policy and information on vaccination coverage. Information provided in the conclusions indicates that recommendations for influenza vaccination exist in most countries for the main clinical and occupational risk groups, in addition to the elderly. However, discrepancies between recommendations and real vaccination coverage exist for clinical risk groups and healthcare professionals. Vaccination coverage for the elderly, with few exceptions (Netherlands, United Kingdom), is lagging and for clinical risk groups and healthcare professionals it remains substantially low. Although the VENICE Survey is a tool that facilitates collecting and sharing information on national immunisation programmes it has several limitations, e.g. difficulties in comparison of vaccination coverage, as countries use different methodologies to estimate uptake. Other limitations concern denominator data for clinical risk groups, as countries often lack standardised methodologies and information systems (disease registers) and use different methods to collect data. For the survey carried out in 2009, only one third of countries provided data.

Other studies confirm the important role of healthcare professionals as key players in the implementation of the vaccination programme and in advising flu vaccination to patients. The results of the study Who advises people on influenza vaccination[7] indicate that recommendations from the doctor/nurse are the most important factors encouraging vaccination against influenza (55% in the age group 18+ and 58% in the group 50+)[8]. The perception of risk posed by influenza and the importance of doctor's advice for vaccination varies between those who were and were not vaccinated. Respondents who accept vaccination recognise influenza as a serious disease. In the same age group and among those who refuse flu vaccination, a majority do not recognise influenza as a serious disease.

Key drivers towards seasonal influenza vaccination are: physician's recommendations, perception of the disease, trust in the vaccine and vaccine acceptability, as well as adequate funding.

3.3 The role of social sciences in mitigating influenza: behaviour change and health literacy

Building a comprehensive communication strategy in relation to influenza has to necessarily address behaviours. The first lines of defence during the A(H1N1) pandemic were behavioural[9], whether it was attendance to a clinic to get vaccinated, vaccination offer, hygiene measures or keeping social distance in public settings. Knowledge and context will also influence behaviour in what concerns the audience's perceived risk, self-effectiveness, health beliefs or social norms.

According to the examples presented during the workshop, attitudes and beliefs of individuals are often at the core of existing barriers towards vaccination uptake in EU Member States. In Estonia, although children immunisation is a social norm, there is still a very low coverage of influenza vaccination in the adult population[10]. The fear of side effects and the scepticism about the effectiveness of the vaccine account for 40.3% of the reasons why Polish people do not intend to vaccinate themselves or their children[11]. A survey[12] involving 11 countries indicates that if the family doctor or nurse recommended vaccination, more than half of the people would do it.

Practical understanding and insights into the factors that drive human behaviour are needed to effectively set up policies and interventions that change behaviour. According to the experts at the workshop, designing interventions without this knowledge could fail to achieve desired outcomes. A strategic approach based on behaviour change communication and on proven theories and models of behaviour change can better support the development of a practical health communication framework.

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[7] Presentation provided by the representative of the University of Zurich, Institute of Social and Preventive Medicine, 'Who advises people on influenza vaccination? A review of studies and surveys on attitudes and predictors'.

[8] Study carried out by the University of Zurich, Institute of Social and Preventive Medicine, in 11 countries in 2007/2008.

[9] 'The Behaviour Change Wheel: a system for designing effective interventions', presentation provided by Susan Michie, professor at the University College London.

[10] Presentation of survey results conducted in September 2010 among 1 003 respondents (general population) of age between 16–65 years. Survey commissioned by the Estonian Health Board and conducted by the research company Klaster.

[11] Presentation of the results of questionnaire 'Attitudes towards influenza vaccination among medical doctors in Poland' conducted by the National Institute of Public Health in Poland between December 2010 and January 2011. The group of respondents included 139 health professionals working in hospital wards, outpatient clinics, ambulance services, hospices and other places.

[12] Blank et al. Vaccination coverage rates in eleven European countries during two consecutive influenza seasons. J Infect 2009 Jun;58(6):446-58.

Such a framework should be data-driven and be based on consistent qualitative and quantitative research. There is an increased availability of tools for acquiring this type of information (such as surveys, statistics, systematic literature reviews and experimental studies).

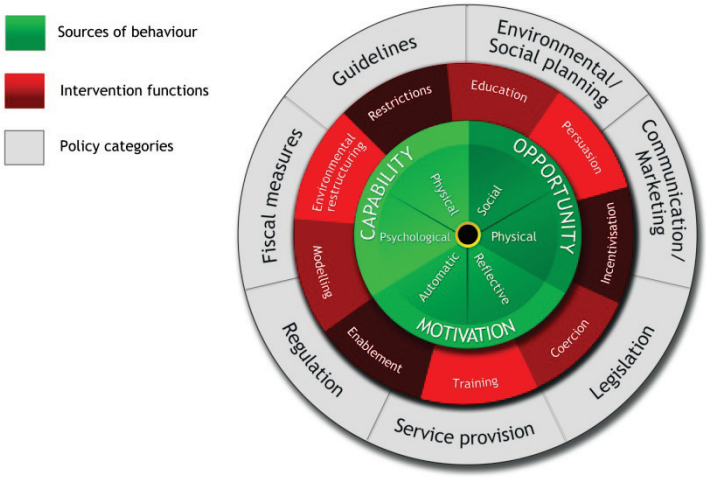
In the communication design stage, understanding how specific audiences construct and structure their meaning should take place after primary research has been conducted. While dependent on external factors, such as government engagement and partnerships between communicators and researchers, the collection of this data should be an ongoing process, as it forms the stepping stone of an effective communication strategy with an embedded behavioural theory.

3.3.1 The Behaviour Change Wheel

Health communication to change behaviour often relied on the Health Education model. However, recent research and practice has made evident that education alone is not always enough to get individuals and communities to adopt good health practices. Often, what drives behaviour is automatic processes (e.g. emotions, habits) rather than, or as well as, more reflective processes (e.g. systematic decision-making). Providing information may succeed in increasing drivers of behaviour such as improving knowledge and increasing worry, but other influences on behaviour, such as skills, confidence, mental models and context, should be taken into account to attain long-term, sustainable behaviour change.

One of the frameworks presented during the workshop was a systematic approach to thinking about behaviour change and interventions. The Behaviour Change Wheel[13] proposes a system for designing effective interventions with a communication strategy aimed at changing behaviour. The starting point involves an analysis of the target behaviour (who needs to do what, when, how; is it a single or multiple behaviour; why the desired behaviour is not happening). With the use of models of behaviour change and psychological and behavioural theories, different types of behaviours have been identified, emerging from interactions between three necessary conditions: capability (physical and psychological), motivation (automatic and reflective) and opportunity (physical and social). This behavioural model is represented as the hub of the Behaviour Change Wheel. Around this, nine intervention functions (education, persuasion, incentivisation, coercion, training, restriction, environmental restructuring, modelling, enablement) and seven policy categories are placed (communication/marketing, guidelines, fiscal, regulation, legislation, environmental/social planning, service provision).

Figure 1 The Behaviour Change Wheel



A behaviour such as getting vaccinated against influenza poses a challenge, as its profile (in terms of capability, motivation and opportunity) is different across the different contexts of the European countries. Identifying the barriers in terms of this profile is the starting point for public health communicators in order to decide where to intervene. Examples were put forward on how healthcare workers could act as enablers (enablement), the potential knock-on effect of doctors providing public models of behaviour for their community (modelling) and also how changing physical barriers could affect vaccination uptake (environmental restructuring).

[13] Michie S, van Stralen MM and West R. The Behaviour Change Wheel: a new method for characterising and designing behaviour change interventions. Implementation Science 2011, 6:42 (23 April 2011).

Within the Behaviour Change Wheel framework, intervention functions are made up of many behaviour change techniques that are 'observable, replicable and irreducible'[14]. Several taxonomies of behaviour change techniques have been developed[15] and can be used to evaluate interventions and to support the design of the communication strategy, thus contributing to its feasibility, acceptability and cost effectiveness.

3.3.2 Can health literacy drive change in influenza communication?

Low health literacy has been associated with non-adherence to treatment plans, poorer management of chronic diseases and higher healthcare costs. As a competence that allows individuals to access, understand and effectively use health-related information, health literacy is a major factor to consider when looking into what drives behaviour in seasonal influenza vaccination. Nevertheless, it has been repeatedly under-recognised as communication campaigns often fail to consider literacy levels in their messages.

Increasing knowledge and understanding in order to change health-related behaviour should be a comprehensive process that aims to empower, enable and motivate people. The facilitators of this process should acknowledge that health literacy is content and context specific, which means that a pregnant woman, an obese person or a cancer patient tend to develop different health literacy skills. The awareness and mindset of what an individual can do about health is constantly shifting with his own experiences.

In the 'Google age', building health literacy is a new challenge. The wider use of technology allows a faster and unrestricted delivery of information. European well-educated audiences feel they are provided with good information about influenza, but the question remains on how people are not complying with vaccination as a protective measure. One of the hypotheses presented was of a missing link between the world of facts, figures and evidence (researchers) and the world of feelings and stories (individuals)[16]. People are assessing health information and evidence with their own patterns of feelings and experiences. As a consequence, the response to sources of information that interact with people at this level, like the media and vaccination critics, is higher. Negative stories survive by way of new connections on the web, or 'Google Juice' (the more a story is linked to by different websites, the higher the possibility of it appearing on the top of a Google search). Communicators and policymakers have to match this level of engagement while communicating public health information, at the risk of not engaging or not build trust with the public. Flu and communication experts should provide messages in a language that the public can engage with, without losing its anchorage to evidence-based information or compromising their scientific standards.

The health literacy approach to address this gap proposes the design of a strategic delivery of information to support the decision-making process. The theory was applied to seasonal influenza vaccination through a comparison with the values of the fast-growing Google brand[17]:

Keep it simple – Make it simple for people to vaccinate. Take vaccination to settings outside doctors' clinics where people will not be confronted with illnesses: supermarkets, amusement parks, workplaces.

Elegant organisation – Have less bureaucracy. Provide simpler messages and eliminate technical jargon.

Empowering and enabling – Make it possible for people to choose and present alternatives. People want options and to feel that they are making a decision based on their own needs.

Engaging – People want to connect and engage. Official websites should not have concerns about establishing online interactive features: people develop trust by learning about real life stories. Virtual communities[18] are gaining influence as people's belief in authorities and authoritative messages is decreasing.

Many of the assumptions of health literacy should be used to assist a communication strategy that could drive behaviour change regarding influenza vaccination. Policymakers and communicators should be prepared to engage in a dialogue among equals rather than a vertical, one-size-fits-all approach. Moreover, public health experts should be taking the place of knowledge brokers in transforming messages and translating information into

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[14] Abraham C and Michie S. A taxonomy of behaviour change techniques used in interventions. Health Psychol 2008 May;27(3):379-87.

[15] Michie S et al. Psychology & Health 2011; Michie et al, Annals Behavioral Medicine, 2010; Michie et al, Applied Psychology, An International Review 2008.

[16] 'Health literacy – driving change in flu communication', presentation provided by Kristine Sørensen, researcher at Maastricht University.

[17] The topics were taken from 'What Would Google Do', a book by Jeff Jarvis, author, consultant and professor of interactive journalism. The book showcases Google's philosophy and strategies and explains the value of applying the same business logic for individuals and businesses wanting to fit in a customised, collaborative, user-generated world.

[18] PatientsLikeMe (patientslikeme.com) is a health social networking site that allows patients to share experiences, treatment and symptom information, and it acts as a platform for collecting and sharing real-life patient data. It was founded in 2004 and had gathered, according to Wikipedia, a community of 45 000 registered patients in October 2009.

knowledge. While they may be experts in flu or in communication, they have to recognise the strength of the resources people now have to make their own decisions. The best available information can only qualify the decisions people are making – the true challenge for public health professionals is to become architects of this choice.

4 Opportunities and challenges

Opportunities	Challenges
• **Political endorsement** set by the Council of the EU through the adoption of a Recommendation for seasonal influenza vaccination to reach the target of 75% vaccination coverage of the risk groups by 2014–2015. Member States are also encouraged to improve vaccination coverage among healthcare professionals (December 2009). • **Need for an international body or bodies in European countries to take on the role of producer of authoritative scientific messages** to help debunk scepticism about public health warnings. • The increase of vaccine use in the EU would result in an important **reduction of the influenza burden** in terms of premature deaths and hospital admissions. • Good examples from European countries (UK, Norway) confirm that **consistency of messages and a constant dialogue with the media can contribute to increased trust and vaccination uptake.** • Consensus that **communication has to go alongside additional policies and public health measures.** • Growing understanding that practically orientated **social science can improve health communication** and health-related outcomes **by taking an evidence-based approach.** • **Availability of social networks and social media**, which can be used to raise awareness of the role of the community. Messages should not be directed only to those at higher risk. • **Health economics can strengthen the case for** seasonal influenza vaccination in times of financial crisis. • **Positive examples coming out of other vaccination campaigns.**	• **Declining credibility and trust in official sources of health information** due to concerns of lack of transparency following the A(H1N1) pandemic in 2009, as well as suspicions of scaremongering. • **Lack of trust in vaccine safety and effectiveness.** • Actively engaged **anti-vaccination groups** which often make a selective use of facts and figures. • **Media, social media and virtual communities taking over a leading role in steering health-related information** and influencing public opinion rather than established authorities. • **Low risk perception and poor knowledge of the seriousness of the seasonal influenza** in most of the Member States. • **Emotion and not rational information are driving behaviour.** • **High acceptance of childhood immunisation but not of the seasonal influenza vaccine.** • Need to involve healthcare professionals in the process of communication, both as potential recipients of vaccination and advocates/deliverers of vaccination. • Need to identify from where healthcare professionals get their information on vaccination. • **Communicating with healthcare workers** within the healthcare system is often a highly complex task. • **Lack of training and education of information providers** that could increase knowledge and/or change attitudes. • **Healthcare workers not proactive at identifying at-risk population.** • **Underinvestment in health communication**, which can hinder research, collection of data and development of effective evidence-based communication campaigns. • **Lack of funding**, which correlates with lower vaccination rates. • **Difficulties in collecting information to monitor vaccination coverage**, especially among at-risk population (VENICE project). • **Language barrier**, not only among European countries but also within several Member States.

5 Conclusions

Participants acknowledged the need for a stronger commitment of public health authorities and healthcare workers who are responsible for vaccination campaigns. Communication strategies should be consolidated by an evidence-based background that includes behavioural science, economic modelling and health literacy.

5.1 Need for a credible source of scientific-based information

ECDC is perceived as one of the key players in Europe in building knowledge and strengthening countries' capacity by providing scientific information on influenza epidemiology and technical guidance on influenza prevention among different groups. Healthcare workers need a standard credible source of information so as to provide different audiences with unbiased and accurate information about the effectiveness of the vaccine, risk of adverse effects and epidemiology of influenza. ECDC should stay at the leading edge of health knowledge and collect best practices on strategies of prevention of seasonal influenza. Evidence-based information on vaccination needs more visibility and should be addressed to different levels of the healthcare system, including the Chief Medical Officer, in each country.

5.2 Building trust

Health messages need to be evidence-based, motivating and achievable, aimed at building confidence and showing concrete health benefits. It is essential to build trust, and this should be achieved by appealing to and involving trusted sources of information in topics related to influenza prevention and vaccination, such as stakeholder organisations, patients associations, community leaders or social networks relevant for a certain audience. Participants also urged for transparency in the involvement of pharmaceutical companies in the seasonal influenza vaccination development and marketing.

5.3 Health economics

Using economic modelling and a cost effectiveness approach should be encouraged, particularly when addressing messages on flu and flu vaccination to the private sector. In times of economic crisis, arguments regarding 'cost-benefit' and 'cost-effectiveness' of vaccines (e.g. using the argument of absenteeism of staff if not vaccinated) could increase the impact of communication. Private-public partnerships may help to strengthen the communication process.

5.4 Health education

Educating the general public and healthcare professionals is an ongoing need. Several participants of the workshop stressed the need for continuous education on preventive methods other than vaccination, especially during flu season (as this became particularly relevant for people who did not vaccinate in due time). A considerable number of people believe that influenza is not a serious disease; therefore, raising awareness is essential, underlining the seriousness of influenza, as one element in a communication strategy to increase risk perception. Messages should take alternative approaches towards influenza prevention (e.g. highlighting vaccination among risk groups and hygiene measures among others). Communication should empower and allow people to feel accountable for decisions regarding their health.

5.5 Target population

Having defined target groups in EU Member States, as well as a scenario of a comprehensive communication strategy, although challenging, could assist in mitigating some of the obstacles. Communication should be targeted and reach all levels concerned (holistic approach), from general public to GPs and healthcare professionals, not only to risk groups. Specific groups could be addressed through other groups (e.g. address elderly through their grandchildren).

5.6 Combine efforts

An EU-wide programme that aligns scientific data and a communication strategy could lead to favourable circumstances for a change of mindset about seasonal influenza vaccination. A pan-European framework could raise awareness, support, coordinate and provide guidance to Member States in what concerns the mitigation of

seasonal influenza. It will also help European countries to cut costs related to influenza prevention and increase the effectiveness of campaigns at national level. Advantage should be taken of a pre-defined 'flu calendar' to plan communication, using local events to spread messages about flu prevention. The project could be developed as a European Influenza Awareness Day/Week.

5.7 Evaluation of health communication campaigns

There is strong evidence that public health communication campaigns can influence public health by affecting health-related behaviours. Nevertheless, policymakers need to have a clear understanding of how health communication and campaigns have the potential to improve the public's quality of life and reduce the total burden of illness. With limited public health spending, the allocation of financial resources needs to be sufficiently warranted, especially with mass media campaigns, which are usually linked to high costs. The evaluation of these campaigns is also crucial for the understanding of critical factors for success. Research methodologies in the field of health communication can be further developed with the application of social marketing techniques: a greater reliance on mixed methods, more creative audience segmentation and improved evaluation studies.

6 Next steps

Following the workshop, a previously established steering committee consisting of a panel of selected scientists and experts on health communication and interrelated disciplines was asked to provide guidance on how to meet the key challenges of communication towards influenza mitigation. The panel provided directions for further actions and their views on available evidence concerning what influences healthcare workers' knowledge, attitudes and behaviour towards influenza vaccination.

The joint conclusions of the workshop and of the steering committee are the groundwork for a set of action points for ECDC. These foresee the development of specific strategies, techniques and tools to influence the behaviour of healthcare professionals regarding influenza vaccination.

6.1 Communication toolkit on seasonal influenza

ECDC will update the scientific information of the existing communication toolkit on influenza and adapt communication materials in accordance to suggestions raised during the ECDC's behavioural workshop and input from the Steering Committee. The toolkit will be accessible on ECDC's website before the beginning of the influenza season 2011/2012.

6.2 Sharing best practices

ECDC will work on providing the means for sharing best practices on influenza communication campaigns in the EU and EEA/EFTA countries. The resulting online library will contemplate video, audio, print, online and other available formats and present information regarding target audiences, campaign settings, health communication techniques used, etc.

6.3 Capacity building in health communication

The design of effective influenza communication strategies should have an evidence-based foundation and draw on specific behaviour change techniques. ECDC will develop a training module on Public Health Evidence-Based Communication in order to support communication activities in the Member States. The aim of this course is to promote communication skills and competences among public health professionals in the context of seasonal influenza.

Annex 1: Background documents

On 26 October 2005 and 14 June 2006, the European Parliament adopted resolutions entitled 'Strategy against an influenza pandemic'[19] and 'Pandemic influenza preparedness and response planning in the European Community'[20], respectively, calling on the Member States to increase influenza vaccination in line with WHO recommendations (WHA Resolution 56.19)[21]. Those resolutions also urged Member States to increase vaccination coverage during the inter-pandemic period in accordance with WHO recommendations[22].

The Council of the EU has adopted the Recommendation of 22 December 2009 on seasonal influenza vaccination[23]. The purpose of this Recommendation is to reach the target of 75% vaccination coverage of the risk groups as early as possible and preferably by the 2014/2015 winter season. Member States are also encouraged to improve vaccination coverage among healthcare workers. The Council Recommendation on seasonal influenza vaccination proposes a set of specific measures to be implemented by the Member States, including: analysing the reasons why some people do not wish to receive vaccinations; fostering education, training and information exchange on seasonal influenza and vaccination by organising information action for healthcare workers; organising information action for risk groups and their families regarding the risks associated with, and the prevention of, influenza; and organising effective information action to remove obstacles to vaccination uptake.

[19] European Parliament. Strategy against an influenza pandemic. European Parliament resolution P6_TA(2005)0406. 26 October 2005.

[20] European Parliament. Pandemic influenza preparedness and response planning in the European Community. European Parliament resolution P6_TA(2006)0259. 14 June 2006.

[21] World Health Assembly. Prevention and control of influenza pandemics and annual epidemics. Fifty-sixth World Health Assembly; Resolution WHA56.19. 28 May 2003. The WHO recommendation was adopted in 2003 and seven years were given to countries worldwide to reach the 75% coverage objective. This objective has not been reached in the EU so far and the increase of coverage remains modest. Based on this recommendation a similar time-frame has to be envisioned to meet a similar target, however, taking into account the specificity of the EU in terms of both demography and economic development.

[22] Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions on Pandemic Influenza Preparedness and Response Planning in the European Community, COM(2005) 607. Available at: http://eurlex.europa.eu/LexUriServ/site/en/com/2005/com2005_0607en01.pdf.

[23] Council Recommendation of 22 December 2009 on seasonal influenza vaccination. Official Journal L 348, 29/12/2009 P. 0071-0072.

Annex 2: Meeting programme

Understanding the behavioural aspects and the role of health communication in mitigating the impact of seasonal influenza

20–21 January 2011

VENUE: ECDC – Anders Gustav Auditorium

Thursday – 20 January 2011

Morning	Arrival of participants	
12:00 – 13:00	Buffet lunch at ECDC	
13:00 – 13:15	Introduction	**Karl Ekdahl**, Head of Country Cooperation and Communication Unit, ECDC Professor **Angus Nicoll**, Influenza Coordinator, ECDC
13:15 – 13:25	Health Communication Activities in ECDC	**Ülla-Karin Nurm**, Senior Expert, Acting Head of Knowledge and Resource Centre, Communication and Country Cooperation Unit, ECDC
13:25 – 13:45	National Influenza Vaccination Policies – Practices and Coverage Across European Countries – Results of the VENICE Survey	**J. Todd Weber**, CDC Liason at ECDC
13:45 – 14:20	Country Presentations: • Poland – Attitudes towards influenza vaccination among medical doctors in Poland • Estonia – Why Estonians lack interest in receiving flu immunisation • Norway – Communicating about flu vaccination in Norway	 **Justyna Car**, Public Health Specialist, National Institute of Public Health – Poland **Marje Oona**, Senior Lecturer and Researcher, University of Tartu **Gunhild Wøien**, Communications Director, Norwegian Institute of Public Health
14:20 – 14:35	Delegate introductions	
14:35 – 14:45	Group photo	
14:45 – 15:15	Coffee break	
15:15 – 15:35	Eurobarometer on influenza	**Silvia Villanueva**, Policy Officer, European Commission, DG Sanco C3
15:35 – 16:20	Using research to inform communication strategies	**Susan Michie**, University College London, Division of Psychology and Language Sciences
16:25 – 17:50	Working group discussions – Differences in policies and practices across EU countries	Rooms: 335, 435 and Auditorium

Friday – 21 January 2011

09:00 – 09:40	Reporting back from Working groups	
09:45 – 10:15	Who advises people on influenza vaccination – a review of studies and surveys on attitudes and predictors	**Patricia Blank** – MSc, Institute of Social and Preventive Medicine – University of Zurich
10:15 – 10:45	The Behaviour Change Wheel: a system for designing effective interventions	**Susan Michie**, University College London, Divison of Psychology and Language Sciences
10:45 – 11:15	Coffee break	
11:15 – 11:45	European Health Literacy Survey	**Kristine Sørensen**, Researcher/ Project Coordinator, Maastricht University
11:45 – 12:45	Discussion session/panel & meeting close	
13:00 – 14:00	Buffet lunch at ECDC	
14:00	Departures	

Annex 3: List of participants

First name	Last name	Country	Organisation
Maria Jose	Alvarez Pasquin	Spain	CSU Santa Hortensia
Susana	Barragan		ECDC
Coen	Berends	Netherlands	National Institute for Public Health and the Environment (RIVM), Centre for Population Screening
Patricia	Blank	Switzerland	University of Zurich
Marthese	Buttigieg	Malta	Mater Dei Hospital
Saulius	Caplinskas	Lithuania	Centre for Communicable Diseases and Aids
Justyna	Car	Poland	National Institute of Public Health
Paolo	Casolari	Italy	Ministry of Health
Lawrence	Cuvelier	Belgium	General practitioner
Fortunato	D'Ancona	Italy	Istituto Superiore di Sanità
Niklas	Danielsson		ECDC
Christian	Desaintes		European Commission, DG Research, Health Infectious Diseases
Dragana	Dimitrijevic	Serbia	Institute of Public Health of Serbia
Irina	Dinca		ECDC
Sarah	Earnshaw		ECDC
Karl	Ekdahl		ECDC
Irina	Filippova	Estonia	Health Board
Deborah	Gaspoz	Switzerland	Federal Office of Public Health
Maria da Graça	Gregório de Freitas	Portugal	Directorate General of Health
Prinz	Gyula	Hungary	Szent László Hospital
Cristina	Isar	Romania	National Centre for Studies in Family Science
Angel	Kunchev	Bulgaria	Ministry of Health
Jan	Kyncl	Czech Republic	National Institute of Public Health
Aurora	Limia	Spain	CCAES
Indra	Linina	Latvia	State Emergency Medical Service
Giovanni	Mancarella		ECDC
Pille	Märtin	Estonia	West Tallinn Central Hospital
Susan	Michie	United Kingdom	University College London
Emese	Molnárné Kozma	Hungary	Epidemiologist
Wendy Lee	Morotti	Italy	World Food Programme
Angus	Nicoll		ECDC
Raina	Nikiforova	Latvia	Infectology Centre of Latvia
Ülla-Karin	Nurm		ECDC
Marje	Oona	Estonia	University of Tartu
Egita	Pole	Latvia	Ministry of Health of the Republic of Latvia
Maria Grazia	Pompa	Italy	Ministry of Health
Johan Ludvig	Reventlow	Denmark	Lægerne Reventlow, Wolfhagen og Bendtsen Clinic
Peter	Scott-Bowden	Italy	World Food Programme
Chloe	Sellwood	United Kingdom	NHS London
Kristine	Sørensen	Netherlands	Maastricht University
Jeanette	Stålcrantz	Norway	Norwegian Institute of Public Health
Ines	Steffens		ECDC
Silvia	Villanueva		European Commission, DG for Health and Consumers
J. Todd	Webber		ECDC
Sabine	Wicker	Germany	University Hospital Frankfurt
Gunhild	Wøien	Norway	Norwegian Institute of Public Health
Piotr	Wysocki		ECDC