EXCELLENCE IN PEDIATRICS INSTITUTE

Improving Child Health Globally

MEETING REPORT

WORKING TOWARDS THE ACCEPTANCE OF A LIFECOURSE IMMUNISATION APPROACH

Policy Focus Group Meeting on Lifecourse Immunization

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Initiative History, Purpose and Work Within the EU Coalition on Vaccination

Since 2015 the Excellence in Pediatrics Institute (EIP) has worked with European and global partners to help overcome the many remaining barriers to vaccination uptake. By connecting and working with colleagues across Adolescent Medicine, General Practice, Pharmacy and Nursing, and uniting behind the **EU Commission's Coalition on Vaccination**, EIP's goal is to promote a LifeCourse approach to vaccines.

Most notably, EIP believes that the following barriers remain: 1) **Policy discrepancies** - Heterogeneous national vaccination policies. Differences in approach, prioritisation and decision making processes. 2) **Overarching barriers** - Lack of policies to increase vaccines confidence, counteract misinformation, increase awareness and mobilise medical communities, and 3) **Failure to adopt a LifeCourse approach** - Prevention Policies not adapted to demographic changes and an increasingly ageing population. Disease prevention in all stages of life is not yet a priority.

As part of EIP's work within the **EU Coalition on Vaccination**, 8 Stakeholder Working Groups, as well as a joint EU Commission and WHO plenary briefing, took place at the 11th EIP Annual Conference in Copenhagen in December 2019. The following report summarises the invited expert's briefings, discussions, and proposed action plans that were debated during the proceedings of the **Policy Focus Group on LifeCourse: *Working Towards an Acceptance of a LifeCourse Immunisation Approach*.** During this session, several experts shared their opinions on the subject, reported the progress made in increasing vaccination coverage rates, underlined the obstacles still faced in accepting vaccination as a LifeCourse immunization policy, but also highlighted the steps that need to be made to overcome these obstacles.

MATERNAL VACCINATION AS PART OF LIFECOURSE IMMUNISATION

Working Group Briefing

The Focus Group was opened by Dr. Roy Philip (*Consultant Neonatologist & Adjunct Professor of Neonatology, University Maternity Hospital Limerick GEMS, University of Limerick, Ireland*). Dr Philip was invited to brief the Working Group on the benefits of, and the remaining barriers to, a full-scale maternal vaccination programmes across Europe. With the focus being on how such an approach is as a means of protecting two generations at the same time and is pivotal as part of an overall LifeCourse immunisation policy.

Dr Philip emphasized the importance of maternal vaccination as part of a LifeCourse immunization approach and the need to increase the current immunization rates in the coming years. Statistical data for causes of deaths among children under 5 years for the period 2000-2012 (WHO) indicates that **maternal immunization is a key tool to help reduce further the mortality rates, as the neonatal period (0-27days) still constitutes 47% of the total (the remaining deaths occurring during 1-59 months of age).** Causes such as pneumonia, neonatal sepsis or prematurity that can be reduced by improving maternal immunization.

Dr Philip pointed out the significance and benefits of breastmilk (colostrum) as it's the first natural vaccine that we have at our disposal, with no cost and numerous other advantages, adding that the "maternal vaccine" (infant immunization by breastfeeding), is the only vaccine that can protect two generations using one shot. As studies have shown it is possible as maternal anti-microbial immunoglobulins that transfer through milk confer passive immunity to the breastfed child while his/her immune system is maturing[1]. Dr Philip briefly described the key alignments for a successful vaccination program, that gives the opportunity for the pregnant mother to come under the protective umbrella of LifeCourse immunization and consists of five points, namely: **Access, Awareness, Affordability, Acceptance** and finally **Activation**[2].

However, there are difficulties in optimizing maternal vaccination uptake, as theoretically it is quite easy to identify the eligible population and proceed to vaccination but in reality, there are a great number that are not identified and thus not vaccinated. So, even now vaccination for the mother is not always happening as expected and an important factor in this is often the insufficient potency of Healthcare Workers to influence the immunization uptake. Therefore, the well-known **3C Model (Convenience, Confidence and Complacency)** has evolved into a **4C Model**, whereby we try to improve Convenience, enhance Confidence and remove Complacency while always be mindful of the **Cultural acceptance**, in order to positively influence the immunization uptake[3] [4] .

*In concluding the first part of his presentation, Dr Philip underlined again the importance of having **two generations protected simultaneously via maternal immunization**, during pregnancy by shielding both mother and fetus against pathogens of increased susceptibility (e.g. influenza) and after birth protecting the newborn with boosted maternal pathogen-specific antibodies until the infant can mount an effective immune response*[5].

In the second part of the expert briefing, Dr Philip analyzed the main barriers that currently hinder the uptake of maternal immunizations across Europe, as well as exploring possible ways of overcoming these barriers. Dr Philip suggested that there is currently a lack of of HCP (healthcare professional)

[1] Verhasselt, V., *Is infant immunization by breastfeeding possible?* Philos Trans R Soc Lond B Biol Sci, 2015. **370**(1671).

[2] Bergin, N., J. Murtagh, and R.K. Philip, *Maternal Vaccination as an Essential Component of Life-Course Immunization and Its Contribution to Preventive Neonatology*. Int J Environ Res Public Health, 2018. **15**(5).

[3] Philip, R.K., et al., *Life-course immunization as a gateway to health.* Expert Rev Vaccines, 2018. **17**(10): p. 851-864.

[4] Corace, K. and G. Garber, *When knowledge is not enough: changing behavior to change vaccination results.* Hum Vaccin Immunother, 2014. **10**(9): p. 2623-4.

[5] Jones, C. and P. Heath, *Antenatal immunization.* Hum Vaccin Immunother, 2014. **10**(7): p. 2118-22.

urgency regarding recommending maternal vaccinations, as well as a lack of specific clinical trial data, there is also the potential for interfering with routine infant vaccinations, the under-licensing of potentially beneficial vaccines, and concerns over immunization safety and low uptake despite the official recommendations[6] [7].

Dr Philip added that, although the maternal immunization is not new, as even at the time of Smallpox pregnant women were vaccinated, due to the new context (e.g. anti-vaccine agendas around the world) special attention should be given as the decision to take a vaccine to benefit yourself and your offspring is very different compared to the vaccination of a 5-year old. For this reason, there are plenty of studies that focus on immunization during pregnancy concerning different aspects of the subject as: (a) **Attitudes and beliefs of pregnant women**[8], (b) **Knowledge, attitude and practice of Healthcare Workers (HCW)**[9], (c) **Barriers for implementation of evidence to practice**[10], (d) **Perception and attitude of Obstetricians**[11] [12], (e) **Factors influencing vaccination acceptance globally**[13], (f) **Study on barriers, intentions and predictors**[14] [15].

Dr Philip also explained the current situation in maternal immunization programs, where the only well-established practice in most of the developing countries is the TT (tetanus toxoid) vaccination – a very cheap vaccine in international terms – and lately two more vaccines, Pertussis and Influenza, which have been widely added to the maternal vaccination priority list due to the widening of the vaccination window (19-37 weeks for Pertussis and 27-36 weeks widened-now to all trimesters for Influenza) and other social-economic influences.

Dr Philip then described the latest developments in Ireland concerning **maternal vaccination status and ongoing campaigns, pointing out the importance of social media and the new generation idea of sharing in influencing the vaccination uptake or creating a favorable momentum, as happened recently with the HPV vaccine, which reached high uptake rates.** Going into more details about vaccination campaigns, Dr Philip underlined that, in Ireland, the flu vaccines that have to do with maternal vaccination are on the rise with high rates comparable to other types of flu vaccines.

Dr Philp explained how important it is for health authorities to work on the way they express the message of the vaccination campaign to the parties of interest, and mostly to pregnant women and healthcare professionals (and particularly to the ones not used to vaccination procedures). A Pediatrician or a GP is in constant contact and training with regards to vaccination, in contrast to a Cardiologist or a Obstetrician but in order to achieve the best result in a LifeCourse vaccination approach, everyone involved should have complete knowledge and understanding of the cause, so as to help the target groups understand why they should get vaccinated and who they protect by vaccination (as some vaccines target mostly the mother while others the baby).

Dr Philip indicated that the level of awareness concerning the value of maternal vaccination has increased and it is definitely on the right track as part of a LifeCourse Immunization - there was a great rise in the number of European countries that have vaccine recommendations especially for pregnant women

[6] Dvalishvili, M., et al., *Knowledge, attitudes, and practices of healthcare providers in the country of Georgia regarding influenza vaccinations for pregnant women.* Vaccine, 2016. **34**(48): p. 5907-5911.

[7] Wilson, R.J., et al., *Understanding factors influencing vaccination acceptance during pregnancy globally: A literature review.* Vaccine, 2015. **33**(47): p. 6420-9.

[8] Fadel, C.W., et al., *Maternal Attitudes and Other Factors Associated with Infant Vaccination Status in the United States, 2011-2014.* J Pediatr, 2017. **185**: p. 136-142.e1.

[9] Bettinger, J.A., D. Greyson, and D. Money, *Attitudes and Beliefs of Pregnant Women and New Mothers Regarding Influenza Vaccination in British Columbia.* J Obstet Gynaecol Can, 2016. **38**(11): p. 1045-1052.

[10] Krishnaswamy, S., et al., *Antenatal pertussis vaccination: Are we implementing best evidence into practice?* Aust N Z J Obstet Gynaecol, 2016. **56**(6): p. 552-555.

[11] Dvalishvili, M., et al., *Knowledge, attitudes, and practices of healthcare providers in the country of Georgia regarding influenza vaccinations for pregnant women.* Vaccine, 2016. **34**(48): p. 5907-5911.

[12] Noh, J.Y., et al., *Perception and Attitudes of Korean Obstetricians about Maternal Influenza Vaccination.* J Korean Med Sci, 2016. **31**(7): p. 1063-8.

[13] Wilson, R.J., et al., *Understanding factors influencing vaccination acceptance during pregnancy globally: A literature review.* Vaccine, 2015. **33**(47): p. 6420-9.

[14] McQuaid, F., et al., *Attitudes towards antenatal vaccination, Group B streptococcus and participation in clinical trials: Insights from focus groups and interviews of parents and healthcare professionals.* Vaccine, 2016. **34**(34): p. 4056-61.

[15] Visser, O., et al., *Intention to Accept Pertussis Vaccination for Cocooning: A Qualitative Study of the Determinants.* PLoS One, 2016. **11**(6): p. e0155861.

during the last decade. However, there is room for improvement, as vaccination has other not so widely known benefits such as the effect on antibiotics (effective vaccination programs can potentially reduce the need for antibiotics and lower antibiotic resistance)[16], also there is a huge list of vaccines that can be safely given to pregnant/mother in certain high risk circumstances.

Dr Philip suggested that although the recommended list of vaccines for maternal immunization is extensive (Centre for Disease Control and Prevention), the uptake is not satisfactory as there are barriers yet to overcome. Dr Philip added that while price to pay at point of care may not be an issue in many European countries it's a big problem worldwide. **In addition, other barriers still apply to all countries (suboptimal recommendations from HCW, concern interference with infant vaccinations, under-licensing of new beneficial vaccines, safety concerns, inadequate antenatal clinical trial data, vaccine hesitancy, anti-vaccine movements, social media and misinformation, regulatory and policy issues)[17].**

Dr Philip emphasized on how we should convey the message in order to promote maternal vaccination as a LifeCourse approach and set the question **if it is time for vaccination to "Go Viral", referring again to the importance of the new social media era** and giving an example of the complexity and heterogeneity of the typology of data categories in negative reports for vaccination[18]. Dr Philip underlined that a major key-point in this effort is awareness, giving as example recent publications for Group B Streptococcus (GBS)[19] and Respiratory Syncytial Virus (RSV)[20] which came to the conclusion that increasing awareness about GBS would be required to optimize the uptake of a routine vaccine, with a specific focus on informing women, which could be the next major breakthrough in the prevention of neonatal sepsis and meningitis and that maternal vaccination against RSV may substantially decrease life-threatening RSV infections in infants respectively.

Dr Philip pointed out that it is time to innovate in order to fulfil our goal a LifeCourse approach to vaccines, focusing more on Policy, Professional and Patient awareness and more specifically raising awareness to those that take care of the mothers, as Obstetricians, midwives and GP's are on the frontline and they should be well-armed with information.

In conclusion, Dr Roy Philip highlighted that maternal immunization is a step-by-step procedure involving a great variety of factors, but there is a pathway that we can follow to reach better immunization results as long as we don't forget to preserve the trust intact among the involved parties.

THE PATIENT'S PERSPECTIVE

Working Group Briefing

Prof. Catherine Weil-Olivier (*Honorary Professor of Pediatrics and Independent Expert, Paris VII University, France*) was then invited by the Working Group to discuss and present a summary on the patient's view on vaccination policies, with a particular focus on their understanding and support for a LifeCourse Vaccination approach.

Prof. Weil-Olivier started her update to the Working Group by focusing on adolescents, stating that one of the main questions raised by them, as a group, is whether they can still benefit from vaccination although they had been previously infected by the same virus. The answer is of course yes and in fact, vaccinating during adolescence could provide a protection period for up to 10 years. **As Prof. Weil-Olivier highlighted in her briefing, we should encourage adolescents to have a full-course of vaccination treatments no matter if previously infected or not.**

Additionally, Prof. Weil-Olivier underlined the importance of keeping up with influenza vaccination. During a study conducted in a region of France, researchers found that the influenza vaccination coverage was low in adults, but greatly higher in age groups of over 65-years old. Another positive outcome and trend worth noting, was the fact that the vaccination rate had increased over the last five years. Looking further into at-risk population groups, vaccination coverage has not changed or even slightly decreased in the group of over 65-years old, but has increased in high at-risk groups of ages under 65-years old.

In addition, by analyzing further the uptake rates in the over-65-years old population group, researchers showed that the highest uptake was observed in people of over 75-years old and the lowest in the age group of 65-69-years old. Regarding children under 15-years old, the coverage rate has

[16] Laxminarayan, R., et al., *Access to effective antimicrobials: a worldwide challenge.* Lancet, 2016. **387**(10014): p. 168-75.

[17] Bergin, N., J. Murtagh, and R.K. Philip, *Maternal Vaccination as an Essential Component of Life-Course Immunization and Its Contribution to Preventive Neonatology.* Int J Environ Res Public Health, 2018. **15**(5).

[18] Philip, R.K., et al., *Is It Time for Vaccination to "Go Viral"?* Pediatr Infect Dis J, 2016. **35**(12): p. 1343-1349.

[19] McQuaid, F., et al., *Factors influencing women's attitudes towards antenatal vaccines, group B Streptococcus and clinical trial participation in pregnancy: an online survey.* BMJ Open, 2016. **6**(4): p. e010790.

[20] Scheltema, N.M., et al., *Potential impact of maternal vaccination on life-threatening respiratory syncytial virus infection during infancy.* Vaccine, 2018. **36**(31): p. 4693-4700.

increased by 3% and this is mainly due to the voucher introduction to the market. Thus, Prof. Weil-Olivier suggested that in order for the patient to feel the need to be vaccinated, the main key points are: **a) receiving a voucher, b) having the feeling that the disease is severe and been recommend by the doctor, c) risk per household and d) personal frailty due to other coexisting illnesses.**

Conversely, Prof. Weil-Olivier put forward that the main reasons for not being vaccinated are because either: **a) they do not want to, or b) they do not have the support they need from the doctor.** In fact, there are 25% of doctors that are against vaccination for a number of reasons and this is something that needs to change in order to have increased vaccination coverages. ***Thus, Prof. Weil-Olivier highlighted that voucher offering, doctor support and better communication through the media will positively increase vaccination rates.***

Another key-point covered by Prof. Weil-Olivier was the need to raise awareness for the disease in question. For this reason, Prof. Weil-Olivier referenced the results of a qualitative study about the psychological and social impact of invasive meningococcal diseases (IMD), aiming towards raising awareness for IMD. The study conclusions were that we still lack knowledge about the disease, and thus the diagnosis is extremely difficult and the quality of life in children affected by IMD is low[21].

Questions or concerns that ultimately lead to vaccination hesitancy include: **lack of trust, anxiety, lack of related information, confusing and conflicting information, misinformation and polarized campaigns.** As health care professionals, Prof. Weil-Olivier highlighted that all HCPs need to address the concern and restore the trust with compassion and care.

Regarding misinformation, long-term efforts on educating the public through HCP led campaigns needs to be done in order to have a well-informed society which is resistant to inaccurate data and rumors about vaccines. Prof. Weil-Olivier underlined that **health care professionals need to learn to communicate with their patients, listen to them and their concerns and understand their fears.** Unfortunately, all these come with a cost, as educating and raising concerns demands a vast financial support for things, such as hygiene improvements, posters and brochures, websites and others[22].

Nonetheless, in France, Prof. Weil-Olivier mentioned that the vaccination coverage rate had significantly increased due to the obligatory strategy they followed. Regarding mothers, most of them are in favor of this obligatory approach, as many doctors are getting better in convincing them and clearly answering their concerns[23].

In conclusion, Prof. Weil-Olivier highlighted that vaccination is a matter that needs a whole society's commitment and a continuous effort to constantly promote the benefits of vaccination in a across life. All health care professionals have a key role and responsibility to be involved in this effort, and public health authorities must also support.

ORGANIZATIONS STATEMENTS

EU Commission

Dr Martine Ingvorsen (*Unit, Directorate-General for Health and Food Safety (SANTE), Unit for Crisis Management and Preparedness in Health, Belgium*) as the EU Commission representative, commented on the importance of LifeCourse vaccination as it protects individuals in different stages of their life and health situations. Going on to describe how this approach gives us the tools needed to ensure future sustainable health systems, and thus constitutes it as essential as childhood vaccination. Dr Ingvorsen also underlined that a LifeCourse approach to vaccination can help us rethink how important preventive elements are for health systems and future challenges, particularly at a demographic level. Adding that even though the vaccination target point for the EU and WHO was to reach a 75% coverage for elderly people, we are still at a median coverage of 46%, after 10 years of implementation, because of the challenges we have to face for LifeCourse vaccines that are both specific vaccine dependent or general, similarly to childhood vaccines.

Dr Ingvorsen also referred to the **critical role that healthcare professionals play on vaccination uptake and the importance of awareness and trust in vaccination campaigns**. Finally, Dr Ingvorsen mentioned some steps that the EU Commission has taken in order to promote vaccination in general, including the establishment of a coalition for vaccination which brings together healthcare professionals and students associations. Also, based on the 2018 Counsel Recommendation, which calls for vaccination programs in EU countries, a Pilot Project is underway to increase the uptake and confidence in vaccines among people suffering from chronic diseases.

[21] Kennedy, I.T.R., et al., *Short-term changes in the health state of children with group B meningococcal disease: A prospective, national cohort study.* PLoS One, 2017. **12**(5): p. e0177082.

[22] Schaffner, W., et al., *Addressing the Challenges of Serogroup B Meningococcal Disease Outbreaks on Campuses.* Infectious Diseases in Clinical Practice, 2014. **22**: p. 245-252.

[23] Larson, H.J., et al., *The State of Vaccine Confidence 2016: Global Insights Through a 67-Country Survey.* EBioMedicine, 2016. **12**: p. 295-301.

World Health Organisation (WHO)

Dr Siddhartha Datta (*Program Manager Vaccine-preventable Diseases and Immunisation Division of Health Emergencies and Communicable Diseases, WHO)* explained the different dimensions of a LifeCourse Approach that apply globally and not only in Europe. Approaches that emanate from the huge differences in the age pyramid of the age structure over the last 20 years, adding that, in general, the initial cause to protect the children and help them grow old is fulfilled, but **when we talk about LifeCourse Vaccines there are different aspects that we need to investigate.**

One major point is the access to vaccination services. This is not a serious issue for the mother and her child but it is for other groups of people and so ways should be found firstly to reach them and then make sure that the services are convenient to them. For example, today lots of people go to their office from 09:00 to 17:00, that means they don't have easy access to pharmacies due to their schedule and just by adjusting the opening hours it could easily improve coverage.

Providing another example, Dr Datta shared with the Working Group that on a small study the WHO conducted on the factors of low flu vaccination uptake in a maternity hospital, they found out that **even though the population trusted the information given by the healthcare professionals, they themselves were hesitant to the concept of the effectiveness of the vaccine**. So, the attitude, demand and acceptance of the entire group implicated is quite important when we talk about LifeCourse Vaccination.

Another key-point, Dr Datta added, is that the health system structure of a country is a fundamental factor. If it's a purely private insurance based system or a public health delivery system, there are great differences that should be considered, especially on adult vaccination that is less convenient than childhood vaccination. *In conclusion, Dr Datta summarized the important factors that we need to look into as we are moving to a new era in LifeCourse Vaccination and that is the Health system characteristics, Social and Economic values and Influencers.*

European Association of Hospital Pharmacist (EAHP)

Mr. Steffen Amann (*Director of Professional Development - European Association of Hospital Pharmacist, Belgium*) briefly described the strategies Hospital Pharmacists are focusing on and that is vaccinations within two groups, healthcare professionals in the hospitals and patients. Their main concerns and challenges that they come up against are the availability and accessibility of the drug, as shortages are a common issue, as well as restrictions to specific groups of patients or healthcare workers. He added that care should be given to the simplicity of the vaccination and the enhancement of acceptance. ***Finally, he agreed that giving a social aspect to vaccination strategies is very important, as building trust is crucial both as professionals but also as individuals.***

Coalition for Life-Course Immunisation (CLCI)

Dr Daphne Holt *(Chair, Coalition for Life-Course Immunisation (CLCI), France)* pointed out the importance of acceptance and understanding at all levels, individuals, healthcare professionals and policymakers, and the difficulties that arose as different entry points may be required for different countries. Dr Holt then gave an example about GPs not promoting the meningitis vaccine, assuming that this problem originates from the lack of available information or the lack of strict and specific guidelines from higher level authorities (Ministry of Health etc.).

In conclusion, Dr Holt emphasized that ***steps should be taken on improving vaccination campaigns, offering better and targeted information to individuals and healthcare professionals, in combination with creating a frame and policies that will promote the changes that need to be done in order to achieve our vaccination goals.***

Working Group Member, Dr Barbara Rath, commented on the differences of physician behaviors that are not yet systematically analyzed and gave an example of a well-known Paediatrician in Munich, who is very sceptical about vaccines thus discouraging the vaccination of his close community; raising the question if something has to be done to avoid such cases becoming more widespread.

Confederation of Meningitis Organisations (COMO)

Dr Elena Moya (*Co-ordinator for Europe and Africa - Confederation of Meningitis Organisations, Spain*) supported the importance of LifeCourse immunization as there are diseases that can affect individuals at any age (e.g. meningitis) and pointed that the **key for a healthy way to get old is prevention**. Dr Moya emphasized the promotion of vaccination through good examples that already exist (e.g. Pediatricians who have done a very good job on vaccination uptake all over Europe) and on providing substantial help to parts that are highly correlated to vaccination (e.g. GPs), **increasing their confidence in vaccines through support, communication, workshops and education**. In conclusion, Dr

Moya gave an example of a Pediatrician in Spain who runs a private workshop for other doctors with topics on how to deal with parents who are hesitant on vaccination and underlined that authorities must focus on providing knowledge and support to all needed, thus promoting vaccination.

INTERVENTIONS AND COMMENTS

Prof David Salisbury commented that in order to achieve the desirable vaccination uptakes, for example the 75% of over 65 year olds for influenza vaccine, there should be careful rethinking and adjustment to structures and processes already in use, making our systems suitable to our client base.

Dr Hanna Nohynek commented about the problems that rise due to cost-effectiveness in some vaccines, in a government point of view and emphasized the need to **reexamine if the vaccines should be included in the national defense agenda and not only be supported by the healthcare funding. It was also mentioned again, the important role of healthcare professionals and the importance of promoting their education and knowledge, as well as supporting them actively.**

Dr Siddhartha Datta stressed the importance of **identifying new trained and reliable healthcare professionals who can carry out the difficult task of vaccination promotion (e.g. pharmacists) because we can't rely anymore to specific healthcare physicians doing everything**, while it was mentioned that this is already a fact in Nordic countries that have moved to Nurses with different challenges rising from that shift.

Dr Barbara Rath discussed the need for **a more uniform and integrated education system in order to avoid different messages that occasionally are given by different HCPs (midwives, nurses, doctors)** and pointed out the need for innovative policies that both support and control the aforementioned parties.

COUNTRY UPDATES

Iceland

Dr Valtyr Thors (*Lead for pediatric infectious diseases at the Children's Hospital Reykjavik, and adjunct lecturer at the University of Iceland, Iceland*) referred to two subjects, vaccine administration and vaccination status of healthcare workers in Iceland. On the first subject he mentioned the problems they are facing in terms of maternal vaccination, explaining that although five years ago the public health authorities recommended pregnant vaccination, the uptake did not meet their targets because the people, who were actually delivering the vaccines, were not well informed. That caused poor uptake to both influenza and pertussis vaccines but there is potential for improvement, he added. The second subject has to do with healthcare workers vaccination uptake; he gave an example of a study they did some years ago about flu vaccine uptake that showed only 75% of hospital working people that are in direct contact with patients are vaccinated against the flu and his conclusion was that this could be dealt with if vaccination is made mandatory for the healthcare staff.

Comments from the Working Group

It was commended that in the US, the medical board is starting to take measures. In Louisiana for example, after a major flu outbreak that they had recently, the licensing board wouldn't accept the excuse "I didn't know" as the recommendations are on a "this is what we need to do "motif. On the questioned asked, if Iceland is contemplating mandatory vaccination for healthcare workers, Dr Valtyr Thors replied by pointing out the complexity of the subject, as it will cause a lot of controversy, but personally, he believes that if a healthcare worker is not vaccinated, he shouldn't get in contact with patients. Finally, Dr Hanna Nohynek briefly mentioned that from 2017 healthcare worker vaccination is mandatory in Finland, against Influenza, Pertussis, Varicella and Measles, something that caused a lot of controversy (there are seven court cases that support that this law breaks the Constitutional rights of the healthcare workers) and partial retreats and changes from the government, but the result is that coverage for influenza is up to 91% from 43%, so the law works but with consequences.

DISCUSSION POINT 1

Maternal and Immunocompromised Vaccinations as a First Step to a Universal LifeCourse Approach

During the discussion about "Maternal and Immunocompromised Vaccinations as First Step to a Universal LifeCourse Approach", several experts made their points and raised their concerns on the subject. One of these was the fact that immunocompromised patients are not the only high risk people, but also elderly ones or individuals with chronic diseases. In fact, an immunocompromised person is 50 times more likely to die from influenza and the likelihood to see the primary care provider for influenza is limited. Thus, apart from General Practitioners, pressure needs to be also applied on specialists and better communication between the two must be made. Another matter that was raised was the anti-vaccine movement that underestimated the value of vaccines. **Infectious diseases in a modern society remain still a**

problem and the tool to address them is through the safety and efficacy of vaccination. It is not only health care professionals that need to promote vaccination, but the community as a whole in order to solve this problem.

DISCUSSION POINT 2

Making Vaccinations a Necessity Through All Life Stages

In the discussion about "Making Vaccinations a Necessity Through All Life Stages" many experts of the field highlighted the steps that need to be made towards making vaccination a necessity. **Among these, it was mentioned that information about vaccination needs to start early. It needs to start at schools by promoting vaccination as part of a healthy lifestyle and with communication strategies that are age -appropriate.**

Additionally, it was underlined that **vaccination needs to be promoted as part of a healthy living and not as a prevention of illness. Another issue that was raised was the fact that elderly people need to be strongly advised to be vaccinated, as they are in the middle of society, coming in contact with their grandchildren** and risking spreading the disease. Occupational health plays another significant role towards making vaccination a necessity. Not all companies provide the health care protection needed and, in many cases, the legal system does not efficiently support the employees. **Thus, immunization programs must be better introduced and applied in a wider range of occupations.**

Making vaccination a mandatory issue may raise coverage, as it did in France. In a region of Italy, where vaccination is semi-mandatory, the percentage of healthcare professionals that are vaccinated was raised from 15% to 18%. **By making mandatory vaccinations, we would protect the population and the children that are unable to be vaccinated due to their conditions.**

In conclusion, the most important step towards making vaccinations a necessity through all life stages is educating both the community and the health care professionals.

DISCUSSION POINT 3

Making Decision Makers Understand the Value of a LifeCourse Approach

During the discussion on "Making Decision Makers Understand the Value of a LifeCourse Approach", key-points were mentioned by several experts of the field. In Quebec, Canada, where vaccination is not mandatory, the uptake rates of HPV vaccination in children range from 80-93%. In order to further promote vaccination, they have developed a program of motivational interviews between mothers of newborns and educators, specially trained in meeting mothers in the maternal unit, discussing concerns regarding the vaccination of their child. This program was proved to be effective, as last year 73% of births were covered and the refusal of mothers not willing to accept an interview was below 2%. The intention to vaccinate their child was increased by 11% and the vaccination rates covered at seven months was also increased by 6%. Although this strategy has high costs, one should keep in mind the long-term benefits from it and increasing vaccination rates in our modern society is of great value.

Another significant point that was made was the disparity between the acceptance of pertussis and influenza vaccination in pregnancy. In Spain, 87% of pregnant women are vaccinated against pertussis, while only 37% of them are against influenza. One of the reasons for this disparity is the fact that the media are mainly focused on the risk of a newborn dying due to pertussis, rather than on the risk of a mother's health due to influenza's complications. About 92% of the respiratory viral infectious diseases are missed in our pediatric hospitals due to various reasons, such as insufficient testing and lack of confirmation and communication with the patient. In order to increase influenza vaccination coverage in mothers, we need to gather more data on neonatal, prenatal and children' deaths from influenza and openly share our concerns and fears with the public.

Another point made by the Working Group was that **universal health coverage ought to be applied by the state and that immunization in general should not be conflicted with vaccinating high-risk populations.** Communication is an essential part of succeeding coverage and it should be made differently depending on the age group addressed. Among all people, immunosuppressed individuals, people with liver, cardio or neurological diseases have the highest risk of dying from influenza. One of the main obstacles that people with chronic diseases face, is the difficulty and inaccessibility of taking their influenza vaccination, due to miscommunication between their General Practitioner and their disease specialist. **Thus, there is a crucial need to increase the accessibility to vaccinations for these individuals, to promote the idea of**

vaccinating for a healthy living and to be supported by better economic models that will convince the more reluctant politicians.

Health care professionals also need to be vaccinated not only to more efficiently persuade people to be vaccinated themselves, but also to prevent passing influenza infections to patients. Nonetheless, the key point that everybody mentioned and underlined is the need for more data on the vaccine efficiency in influenza prevention and the indirect effects of influenza infection in a patient's life. In order to accomplish collecting more data, countries need to start registering their incidents and their prevention strategies and share them globally.

In conclusion, the key-points of the discussion were that evidence needs to be collected and shared, communication between health care professionals and patients needs to be better and one should focus and promote the benefits of vaccinating on improving quality of life.

CONCLUSIONS

It was clear from the Working Group's discussion that a true LifeCourse approach to vaccinations is still a long way off and that there needs to be a change in policy makers' mindsets of how vaccines can play a pivotal role in providing protection from the cradle to the grave.

Elderly people and high-risk populations, such as infants, immunocompromised individuals and patients with chronic diseases, can be the starting point for a far wider universal coverage. Educational programs informing about vaccines and their benefits on quality of life should be applied. Communication between health care professionals and patients should be improved and communication strategies need to vary according to the age group addressed using different media platforms. In addition, ease of access for high-risk populations needs to be improved and General Practitioners should communicate more efficiently with Specialists. Finally, in order to persuade governments and people to promote and apply vaccinations, we need to collect and share more data on vaccine prevention and its benefits on a person's life.

In particular the Working Group has raised the following areas that need to be explored in more detail with necessary actions taken in 2020/2021, including:

- **Maternal immunization is a key tool of reducing further the mortality rates in the neonatal period** and should become common practice with the matra of *two generations protected simultaneously via maternal immunisation.* **Insufficient potency of Healthcare Professionals (HCPs) to influence the immunization uptake of expectant mothers should be tackled through campaigns and education of HCPs to advocate at every opportunity.**

- **Maternal vaccination status and ongoing campaigns should be prioritised with direct campaigns to expectant mothers.** Campaigns pointing out the importance of social media and the new generation idea of sharing in influencing the vaccination uptake or creating a favorable momentum. **It is time for vaccination to "Go Viral" in the new social media era.**

- There's a clear need to focus more on Policy, Professional and Patient awareness and more specifically **raising awareness to those that take care of the mothers (Obstetricians, Midwives and GP's).** There is a need for a more uniform and integrated education system in order to avoid different messages that are occasionally given by different HCPs (midwives, nurses, doctors).

- **Even though the population trusts the information given by the healthcare professionals, HCPs are sometimes hesitant to the concept of the effectiveness of the vaccines** and this need to be urgently addressed in the pockets of HCPs where it is present. Increasing their confidence in vaccines through support, communication, workshops and education is vital.

- **Positive information about vaccination needs to start early.** It needs to start at schools by promoting vaccination as part of a healthy lifestyle and with communication strategies that are age-appropriate. **Vaccination needs to be promoted as part of a healthy living and not as a prevention of illness.**

- **Health care professionals need to be vaccinated, not only in order to more efficiently persuade people to be vaccinated as well, but also to prevent giving direct infections to patients.**

SUGGESTED ACTION PLAN FOR 2020/2021

Target 1
Increase Maternal Vaccination Uptake Through HCP Advocacy and Educating all HCPs of the Benefits of LifeCourse Vaccinations

Need: There is currently insufficient potency of Healthcare Professionals (HCPs) to influence the immunization uptake of expectant mothers. Also a related need exists for a more

uniformed and integrated Healthcare education system in order to avoid different messages that are given by different HCPs (midwives, nurses, doctors)

Proposed Actions - A series of Vaccine Webinars and free-to-view online training courses each aimed at the role of all HCPs in the care team and overcoming the current mixed messages provided to patients regarding vaccines.

Target 2
Making Vaccination part of a Healthy Lifestyle Choice - Increasing Maternal Vaccination Uptake and Support for Vaccinations from an Early Age

Need: It is time for vaccinations to "Go Viral" in the social media era. Vaccination needs to be promoted as part of healthy living and not as a prevention of illness. There's also a need for positive information about vaccination needs to start early in schools by promoting vaccination as part of a healthy lifestyle and with communication strategies that are age-appropriate.

Proposed Actions - An HCP led vaccine awareness campaign connecting with schools and civic society to make vaccines part of a healthy lifestyle choice.

Target 3
Increasing Healthcare Professional's Personal Vaccination Rates

Need: Despite clear evidence of the need for all HCPs to be vaccinated, high levels of personal HCP vaccine uptake remains an aspiration in many counties. HCPs need to be vaccinated not only to more effectively persuade people to be vaccinated themselves, but also to prevent direct infections to patients.

Proposed Actions - A pledge campaign for HCPs to vaccinate themselves and publicise their latest vaccines and recent vaccine schedule online to communicate their confidence in vaccines and show their patients what they are protected from.