ÖGHMP
Österreichische Gesellschaft
für Hygiene, Mikrobiologie
und Präventivmedizin

MEDIZINISCHE
UNIVERSITÄT
INNSBRUCK

sektion für hygiene und
medizinische mikrobiologie

Meeting Report

Meeting of National Verification Committees for Measles and Rubella in German-speaking Countries

12- 13 January 2017,

Innsbruck, Austria

Executive summary

Most countries in the WHO European Region have interrupted endemic transmission of measles and rubella, but some others scattered across the Region still have large recurrent or persisting outbreaks and/or their surveillance is not of the quality required to demonstrate disease interruption.

To facilitate the sharing of good practice and lessons learnt in the efforts made to interrupt measles and rubella transmission across countries, a meeting for representatives from German-speaking countries and regions was held to review and discuss the regional verification process, the current regional epidemiological status of these diseases and the role of the National Verification Committees for Measles and Rubella (NVC). Country representatives presented an SWOT analysis of their national measles and rubella elimination efforts that allowed in-depth discussion and the realization that many strengths, weaknesses, opportunities and threats were shared among the countries.

The meeting also offered the opportunity for NVC members to view annual status update reports on measles and rubella of the German-speaking countries between themselves for the first time and to obtain additional clarifications on the completion of these reports. Improvements to better document surveillance data with greater focus on molecular surveillance and linkage of epidemiologic and laboratory data were considered crucial.

Common strengths included the high quality reference laboratory support both at national and regional level, existence of clear recommendations for vaccination and, with exception of Switzerland, free of charge vaccination. The cost of these vaccinations is covered by compulsory health insurance in Switzerland (except insurance deductible and co-pay); during the immunization campaign the vaccination against measles was liberated from insurance deductible.)Luxembourg noted that the main challenge it faces is to maintain the measles elimination status. The weaknesses that were reported included differences in the degree of public health measures taken such as timely contact tracing, outbreak management and communication and in how vaccine hesitancy is addressed. Vaccine hesitancy was identified as major threat in all participating countries and regions.

The second day of the meeting was dedicated to addressing vaccine hesitancy through communication and advocacy. All participants agreed on the importance of maintaining public confidence in vaccines, including through information campaigns, proactive collaboration with media and capacity building of healthcare workers in communication.

Although many efforts are being made by the participating countries, more are needed to eliminate measles and rubella in the European Region. To highlight this topic and the objectives of the meeting a press conference was held the day prior to the meeting started. The media stressed the seriousness of measles and the benefits of being vaccinated against it. The media coverage was extensive in the local newspapers and TV but also in other regions of Austria.

Main conclusions

Although some countries with large populations have already interrupted transmission of measles and rubella, other countries, also with large populations but with a federal system, have particular challenges to eliminate these diseases. There is room for improvement in the quality of the Annual Status Update reports including consistency and completeness of data presented. Closing immunity gaps among adults remain challenging. Training and equipping healthcare workers with communication skills to advocate for vaccines is considered as a good approach to counter vaccine hesitancy. High quality surveillance and timely outbreak responses are crucial to eliminate these diseases. A number of action points have been laid out and are described in detail in this report.

Background

The Regional Verification Commission for Measles and Rubella Elimination (RVC) was established by the WHO Regional Office for Europe in 2012 as an independent expert body with the mission of evaluating the documentation submitted by National Verification Committees for Measles and Rubella Elimination (NVC) to verify the elimination of measles and rubella in the Region. The Regional Office's Vaccine-preventable Diseases and Immunization Programme (VPI) serves as the secretariat to the RVC. The RVC meets annually to determine the status of measles and rubella elimination in the WHO European Region based on annual status update reports (ASU) submitted by the NVCs. In this context, the RVC advises NVCs on the process for collecting and analyzing data for verification in the country.

Austria, Germany, Luxembourg and Switzerland not only share a common language but also have similar practices in surveillance and immunization data collection and reporting as well as public attitudes towards vaccination. This applies also to neighbouring Liechtenstein and South Tyrol (Autonomous Province of Bolzano) in Italy. Indeed, with the exception of Luxembourg and Liechtenstein, German-speaking countries also face challenges in eliminating these diseases.

Objectives of the meeting

The main objectives of the meeting were to exchange experiences of the verification process between NVCs of German-speaking countries and discuss ways to:

1. adequately document the evidence needed to verify interruption of endemic transmission of these diseases, and
2. explore possibilities of close collaboration between the NVCs.

The meeting on 12 and 13 February at the Hilton Hotel in Innsbruck was the first meeting of German-speaking countries since the establishment of NVCs. It was hosted by the Division of Hygiene and Medical Microbiology of the Medical University of Innsbruck, Austria and financially supported by the Regional Office of the World Health Organization for the European Region (WHO EURO) and the Austrian Society for Hygiene, Microbiology and Preventive Medicine (ÖGHMP).

Structure of the meeting

The first day was structured as plenary sessions to inform about and discuss the regional verification process, the current epidemiological status and the organization and function of the National Committee for Measles and Rubella. NVCs' presentations based on a SWOT analysis (strengths, weaknesses, opportunities and threats) allowed in-depth discussion. For the second day, additional key persons involved in public health aspects of measles and rubella elimination participated at a workshop. An exhibition was set up to serve as a basis for sharing communication material, posters and brochures and ideas and suggested actions for European Immunization Week 2017, which will take place 23-29 April 2017. The full programme is found in Annex 1.

Participants

Participants of the first day were chairs, members and experts of the National Verification Committees for Measles and Rubella Elimination (NVC) of Austria, Germany, Switzerland and Luxembourg. Furthermore, responsible persons for measles and rubella control of Liechtenstein and the Autonomous Province of Bolzano (Italy), experts from the WHO EURO and the European Centre for Disease Prevention and Control (ECDC). Last but not least the chair of the Regional Verification Commission for Measles and Rubella Elimination could also contribute to this conference. During the second day meeting participants included also pediatricians, a communication expert from ECDC and public health officials, mainly from Austria.

See Annex 2 for the detailed list of participants.

Meeting proceedings

Day 1 - Thursday 12th January 2017

Session 1 - 09:45-10:50
Chairs: Prof. Dr. Andrea Grisold (Austria), Dr. Virginie Masserey Spicher (Switzerland)

09:45-10:00 Opening and introduction

Andrea Kofler welcomed the participants to the meeting and introduced the university hospital in Innsbruck. They have a strategy in place to reduce nosocomial infections and every new employee has to bring a certificate showing that they are protected against vaccine-preventable diseases (measles, mumps, rubella, varicella). They regularly evaluate the status of their employees and so far they observe a good compliance of their staff and no sanctions were necessary.

Cornelia Lass-Flörl mentioned international institutions and countries represented during the meeting. She expressed her astonishment about the high percentage of parents belonging to vaccine opponent and hesitancy groups that even colleagues with a medical background have doubts and are sceptical concerning vaccines, that parents sometimes think they know better than medical doctors and that a bit of disease may be even beneficial for their children. She was surprised to find that these beliefs are encountered throughout different classes of population.

10:00-10:30 Status of measles and rubella elimination in German-speaking countries of the WHO European Region

Mark Muscat explained that all 6 WHO regions have measles and rubella elimination goals, but that there is a kind of stagnation during the past years as far as a further reduction of measles cases is concerned. Taken together, the data of the WHO European Region show that measles cases occur among basically all age groups and that the large majority of them are unvaccinated, but that there are considerable differences concerning the most affected age groups between the countries. An overview about especially vulnerable groups in the region was given as well as some examples of outbreaks among health care workers (HCWs) and in educational facilities. For rubella a massive reduction in cases was achieved through vaccination and currently Poland is the country reporting most cases in the region, but the cases lack laboratory confirmation and could be caused by other aetiologies. The report of last year's meeting of the Regional Verification Commission (RVC) shows progress in the number of countries having achieved interruption of measles and rubella transmission. The countries having achieved measles and rubella elimination largely overlap. Main challenges to measles and rubella elimination are reaching and maintaining high vaccine coverage, closing existing immunization gaps, knowledge and training, having high quality surveillance and especially commitment to reach elimination. Challenges vary between countries and also a high overall vaccination coverage does not prevent the presence of population groups with low vaccination coverage levels. It was mentioned that sometimes idols can make a big difference in acceptance of vaccination and that all possibilities of closing vaccination gaps should be considered, not only supplementary immunization activities (SIA). Also the importance of early outbreak confirmation and response was stressed and the need to improve surveillance for rubella. In addition, a lot of misinformation may be found on the internet, but since most people trust their doctors, it is important that the latter actively promote vaccination.

In the subsequent discussion, questions concerning the most successful strategies of countries having achieved elimination, of maintaining elimination and the impact of mandatory vaccination were raised. Dr. Muscat explained that besides a tradition of high vaccination coverage, a quick response to cases and outbreaks is an important point, while mandatory vaccination is not required for elimination.

In addition, the rather high mortality during the measles outbreak in Romania was addressed (6 deaths among 611 reported cases in 2016) and is probably related to many cases occurring among Roma and infants and that the denominator is probably not correct due to underreporting.
Since several small countries have reached elimination, it was suggested to look at population size when analysing the data about progress made in the region.

10:30-10:50 National Verification Committees (NVCs) for the elimination of measles and rubella: mission, membership and function

Patrick O'Connor reminded the participants of the principles of verification of elimination, the ideal composition of the NVCs, the annual process to be completed, the proceedings of the RVC and the lines of evidence for the verification process. Currently 51 of the 53 member states of the WHO European Region submit annual status updates (ASUs) and the biggest challenges related to these reports are quality, consistency and completeness. It is envisaged that meetings of the RVC may in the future be held in countries with problems and that members of certain NVCs may be invited for further explanations and clarifications. In addition it is planned to further align the process with the polio programme and to continue the verification of elimination after the region has achieved measles and rubella elimination. The submission deadline of the ASUs for 2016 is already mid of April 2017 and the RVC has planned its meeting for mid of June.

The discussion focussed on transmission chains, e.g. that the distinction between imported and import-related cases on one hand and endemic cases is based on the 12 months cut-off; that population size plays a role since in bigger populations the chances to sustain transmission are increased; that currently sequence data of the measles virus strains, both of the "traditional region" of the N gene, but also a non-coding region between the M and F genes with an even higher variation may be helpful for the distinction of transmission chains, but that in the future with a further reduced variation this may not be the case any longer. Efficient surveillance systems, full case investigations and appropriate documentation will become increasingly important.

Session 2 - 11:20-12:45
Chairs: Prof. Dr. Heidemarie Holzmann (Austria), Dr. Patrick O'Connor (WHO-EURO)

11:20-11:55 Preliminary feedback concerning the NVC reports of German-speaking countries and changes for the next ASU based on 2016 data

Günter Pfaff asked the NVCs of the different countries for the permission to quote from their last ASUs and when this was granted showed the first part of these reports. The amount of text included to justify the selection of the current elimination status varied widely. Since the report of Liechtenstein is included in the Swiss ASU, there is the question of certification of elimination as there are no cases in Liechtenstein, while both measles and rubella are still considered endemic in Switzerland. The current stage of measles and rubella elimination varies widely between the German-speaking countries with endemic circulation in Germany and Switzerland, interrupted circulation in Austria and achieved elimination in Luxembourg. So far the RVC agreed largely with the NVCs concerning the status selection and the reports of the German-speaking countries adhered mostly to the criteria for ASUs, though with big differences regarding the amount of information and details provided. That is why Dr. Pfaff suggested to the NVCs represented to exchange their ASUs. As a general comment, molecular epidemiological data are considered helpful for the decision making process of the RVC.

11:55-12:15 The Scandinavian Verification Committee for measles and rubella elimination

Peter Andersen presented the Scandinavian Verification Committee for Denmark, Norway and Sweden and explained the process of its formation. Due to many similarities between the three countries, the small

number of experts per country and to achieve a better independence, 4 people per country with different background and expertise were nominated in 2014 to serve for a period of 3 years in the committee. The participation is voluntary and there is no financial compensation. The experts from one country review the data from another country in a structured way. There was a learning process for the Scandinavian committee and initially there were some discrepancies between its evaluations and the ones provided by the RVC. In addition, not all of the indicators recorded in the ASU seem to be suitable for the situation in the Scandinavian countries. Since there is no rubella surveillance in Denmark, rubella was considered endemic when the "inconclusive" status was abolished and that fact received some attention in the local press. A statement advocating vaccination was published in Denmark by the Danish members of the Scandinavian committee.

12:15-12:45 Discussion: Challenges and opportunities for German-speaking NVCs

The question was raised whether a multinational committee or members of one country serving in a different country's NVC is preferable, but it seems to be more of an issue how appropriate experts are selected.
Issues of surveillance quality and rapidity of interventions were discussed, with rubella surveillance being often suboptimal, late notification of cases and a suboptimal and slow follow-up of cases which is in contrast to the situation in the Americas where a team of experts checks locally whenever a case notification is received.
Another issue was the rate of discarded cases as an indicator of surveillance quality, with these numbers being absent or too low in many countries. Often the data are not captured at all and it might be difficult to change laws to get the information. IgM data may not always be helpful since testing is also done for people not fulfilling the criteria of suspected cases (e.g. testing of both IgG and IgM during pregnancy). Therefore only numbers based on assumptions (e.g. if age outside of pregnancy range it is possibly a suspected case) may be available. A major problem is that suspected cases are often not notified by the clinicians, even if reporting is mandatory. So one question to address is what could (and should) be done on a national level to improve case notifications.
Explanations were provided why the previous status categories "inconclusive" and "interrupted transmission, at risk" were abolished: "inconclusive" does not really put much pressure on countries to improve and as long as measles virus is circulating, there is basically always a risk of re-introduction. So the RVC decided deliberately to be stricter concerning the categories.
It is considered helpful if vaccination coverage rates over many years are presented in the ASUs (as some countries already do) since this allows to better estimate the number of susceptibles in the country.

Session 3 - 13:45-15:45
Chairs: Dr. Sabine Reiter (Germany), Prof. Dr. Claude P. Muller (Luxembourg)

13:45-15:45 SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis of efforts concerning measles and rubella elimination in German-speaking countries & discussion

Daniela Schmid presented the SWOT analysis for Austria, Dorothea Matysiak-Klose for Germany, Virginie Masserey Spicher for Switzerland, Claude Muller for Luxembourg, Marina Jamnicki Abegg for Liechtenstein and Martina Born for South Tyrol (please see presentations for details). Though every country has its own combination of strengths and weaknesses, opportunities and threats, some overlap was observed, offering possibilities for collaboration and common actions. For example, basically all countries reported that the percentage of hard-core vaccine opponents is low, but that there are many people who have some concerns or a critical attitude towards vaccination or who are simply uncertain and confused due to contradictory information. Several countries reported that they have a good political support and that progress was made in various domains during the past few years (e.g. press support, improvements in case notifications or vaccination promotion campaigns). The bigger countries often observe discrepancies at subnational level.

In the subsequent discussion, the issue of catch-up vaccinations and their impact on especially second dose coverage were mentioned. Since several countries observe that vaccination coverage is still increasing after the scheduled time point (for example during routine medical checks), it may be helpful to provide this information also in the ASU. In addition, age-stratified seroprevalence studies provide valuable information to identify vaccination gaps and to design targeted interventions.
The question was raised whether anything could be done against vaccine opponents among medical doctors and whether other HCWs could take time and counsel people regarding vaccination. It was suggested that for young men the medical examination for military service and for young women the visits at the gynaecologist could be used for that purpose; potentially also medical visits in the frame of cancer prevention. It seems that currently little can be done against vaccine opponents among medical doctors. Often they are well known, but there is no legal framework for sanctions. If they do not provide adequate counselling concerning vaccination, parents could take them to court, but this is basically not happening right now.
Then suggestions for efficient strategies to vaccinate unprotected population groups were collected. Among others, participants recommended to take advantage of outbreaks, to visit schools to vaccinate and to train doctors to promote vaccinations. Since the physicians are the main determinants of whether people decide in favour or against vaccination, it is certainly worth thinking of efficient strategies to take advantage of that fact.
The question was raised whether the NVCs of the German-speaking countries would envisage to make statements in favour of vaccination as Denmark did. Since the NVC is supposed to be independent, it should not get involved in any interventions to improve vaccination. However, because the experts have the best overview of the situation in their countries, they could come up with recommendations for improvement. In Switzerland the verification committee was imbedded within a larger support committee during the 3 years of the national campaign (2013-2015), with 16 representatives of politics, sports, health, academics and society, who contributed to spread messages in their networks or events.

Session 4 - 16:00-17:30
Chairs: Dr. Anette Siedler (Germany), Dr. Maria Paulke-Korinek (Austria)

16:00-17:15 Process of documentation: experiences of the countries when preparing the ASUs. Discussion: exploration of possibilities for the exchange of good practices between German-speaking NVCs

The first part of the discussion focused on vaccination coverage versus herd immunity. Patrick O'Connor mentioned that there is a WHO position paper clarifying the terminology and that care should be taken to use the correct expression. He clarified that for measles elimination a herd immunity of 95% is required. The question was raised whether there is any recommendation on how to assess herd immunity. It was suggested that serosurveillance data could provide some estimates and could therefore be useful, but that there is currently no requirement to perform such studies. Within the WHO laboratory network for measles and rubella, efforts are made to come up with clear guidelines on how to perform such seroprevalence studies. Günter Pfaff warned that there may be regional or group-specific differences in a country and that therefore national numbers may not show the full picture. According to him, such serosurveys often require very large numbers of participants to provide a reliable outcome. In response to that it was discussed that these seroprevalence studies could be helpful to identify immunity gaps in certain age groups and that an oversampling of interesting groups may be an option to get reliable numbers. Serosurvey outcomes may allow for targeted interventions. However, sometimes it may be a better use of resources to just vaccinate if it is already known that the prevalence in certain risk groups is low and to target groups that are not opposed to vaccination, but lack vaccinations due to other reasons.
The question was asked whether regional differences should be highlighted more explicitly in the ASUs and how this is handled in the different countries.. Data protection may also be an issue. When children start school, vaccination cards are inspected, but the data are not recorded. Anette Siedler suggested to put

together information on how vaccination coverage data are obtained in the different countries and participants agreed that this would be useful.
Paulke Korinek mentioned that in Austria they have developed a mathematical model including data since 1998 and taking all potential influencing factors they could think of into account. Participants mentioned that it might be interesting to learn more about that model if possible.
Günter Pfaff mentioned that data on subnational level may be very useful for targeted interventions, but that the amount of detail that is provided in the ASUs varies widely between the countries. For him especially the interpretation and recommendations for further actions based on available data are of importance.
The next part of the discussion focused on vaccination registers and reminder systems. While in Germany there are medical examinations when children start school and plans to implement a new reporting system, South Tyrol has a vaccination register and for adults all previous vaccinations and new ones are entered. Since basically all people agree to profit from medical services, data recording is possible. Such vaccination registers were also considered as useful to remind people of vaccination schedules, but also other reminder systems may be beneficial since often people simply forget about their vaccination needs.
Different participants raised the issue of selecting the appropriate elimination status in the ASU reports. For many people a more clear definition would be helpful. There were suggestions that possibly subcategories or suggestions of the NVCs for clarification could be included. For Patrick O'Connor there exist basically two categories: endemic and interrupted, with the latter status having some kind of "subcategories". Based on the discussions, he acknowledged the need for better definitions of elimination status categories. Since the RVC will choose one of the currently defined elimination status categories, it is according to Günter Pfaff not a good idea if the countries come up with new categories. But NVCs can contact WHO for advice if they are not sure which category to choose.
The value of molecular epidemiological data was discussed. In Austria, for example, the molecular data suggest that measles is no longer endemic despite the many cases that are reported. If the same genotype and virus variant is reported in neighbouring countries, it is often difficult to interpret the information since the virus may be transmitted back and forth between the countries. For rubella, the up to 50% of subclinical cases make the investigation of transmission chains very complicated. Whether transmission chains are sustained for a prolonged period of time also depends on population size. In countries with many cases such as Germany, it is basically impossible to follow and characterize all cases.
Other issues shortly mentioned comprised possibilities for a better notification of SSPE cases, which are not of importance for documenting measles elimination, but for communication; the best strategy for SIAs in risk groups; to raise awareness that maternal passive immunity is not as strong any more as it used to be after natural infection of the mothers; the importance of contact tracing and acting very fast to stop the outbreak as quickly as possible (generous ring vaccinations); the importance of timely notification of suspected cases to be able to take measures to avoid further spread and that in Germany new guidelines for post-exposition prophylaxis were published. The question was raised what the meeting participants should concentrate on for day 2, trying to figure out what is possible and most efficient.

In her summary of the session, Anette Siedler mentioned that differences between vaccination coverage rates and population immunity were discussed, that questions about the interpretation of the ASU elimination status categories were raised, how vaccination rates are determined in the different countries, which catch-up vaccination possibilities exist and how to best use available funding, that reacting very fast in response to an outbreak is essential and that for the next day the discussion should focus on what should be done to address the different issues and challenges.

17:15-17:30 Summary, conclusions and perspectives

Günter Pfaff stated that in his opinion it was already a great success that the meeting took place and that an exchange of experiences and information between the German-speaking NVCs was possible. It became obvious during the first meeting day that a basis for collaboration certainly exists. In addition, the exchange of ASUs between the countries to which all NVCs agreed was a first step to build trust and to learn from

each other. Dr. Pfaff envisaged that the meeting could be a kind of starting point to establish a network or platform for regular exchange.

Conclusions of Day 1

Although some countries with large populations have already interrupted transmission of measles and rubella, other countries, also with large populations but with a federal system, have particular challenges to eliminate these diseases. The main conclusions of day 1 are categorized as follows:

Annual Status Update reports

- It was the first time that NVC members had an opportunity to view annual status update reports on measles and rubella of the German-speaking countries between themselves. This resulted in a better understanding of each other's reports, the level of detail required and areas where further improvement in documentation is required.
- The deadline for submission of ASU was brought forward to 15th April 2017
- Definitions of some of the terms used in the ASU such as rate of discarded cases were clarified.

Population Susceptibility

- Healthcare workers (HCWs) need to be vaccinated (if not immune through natural diseases) to prevent nosocomial transmission. Furthermore, being the most trusted source of information HCW are a key group for providing advice on vaccination to the general population.
- Immunity gaps in the general population are not homogenously distributed. Analysis of coverage at national level may mask pockets of susceptible individuals even if high coverage at national level is reported. Information on ethnicity, migrant status, or beliefs is not routinely obtained in surveillance systems. Knowledge, attitude and practices (KAP) surveys may be useful tools in better tailoring immunization strategies. Innovative approaches are needed to better identify immunity gaps. Serosurveys may be useful tools but are generally very expensive.
- Electronic vaccination registries including reminder systems are useful tools to monitor vaccine uptake. Such registries are still not universally used in most of the participating countries. Wherever they are used delayed vaccinations are often not monitored.
- Closing immunity gaps with catch-up vaccination remains a challenge.

Surveillance and Outbreak Response

- High quality surveillance is key issue in achieving and documenting elimination. The need for accurate information on source of infection is much easier in smaller countries but crucial for the categorization of the elimination status. Rubella surveillance is generally much weaker compared to measles surveillance.
- The role of molecular epidemiology is crucial to better understand transmission patterns and identify chains of transmission, despite the fact that few genotypes are responsible for the majority of cases in Europe. Laboratory capacity and the proportion of identified genotypes is generally good in all participating countries, but the linkage of epidemiological and laboratory data still needs further improvement.
- Responses to outbreak are not often timely. One of the reasons is lack of (adequately trained) staff. Nevertheless, outbreak response was not discussed in enough detail such as the usefulness of social distancing, communication during outbreaks and post-exposure prophylaxis with MMR or human immunoglobulin. Nevertheless, it was agreed that the effectiveness of such interventions clearly needs to be better evaluated and results of such evaluations should be shared.
- Timely outbreak response including contact tracing is crucial to limit further disease transmission. Broad ring vaccinations as part of the response are likely to have a positive impact not only on transmission but also on coverage.

- Standard operating procedures for contact tracing and response for both public health authorities and other HCWs (e.g. general practitioners, paediatricians, hospitals) are useful tools.
- The indicator of rate of discarded cases is difficult to obtain because many suspected cases are only reported after laboratory confirmation despite the legal request for timely reporting of suspected cases.
- Sub-acute sclerosing panencephalitis (SSPE) – a rare but fatal late measles complication, is not notifiable in any of the participating countries. Documenting such cases is considered useful as it may help to better assess the actual burden of disease and cost-effectiveness of vaccination.

Action points

- Apart for the reporting responsibilities of NVCs such committees should play a more advising and advocating role that might help maintain the political commitment.
- The quality, consistency and completeness of ASU reports need to be enhanced.
- Information on the methods of calculation vaccination coverage should be included in the ASU reports.
- Interpretation of available data should be made more explicit in ASU reports.
- Opportunities to recommend vaccination should be sought at contacts with the healthcare system (e.g GPs, gynaecologists, military service)
- Policies to address vaccination of HCWs are needed, if not yet available.
- Training of HCWs should be a priority as they are the main source of information of the general population.
- The existence of HCWs advising against vaccination is well known. Countries should assess methodologies to identify and control such HCWs.
- Pre-school entry policies should be enforced as they allow the vaccination status of school children to be reviewed and vaccination in case of missing vaccines.
- NVC meeting calendars should be exchanged and members of neighbouring NVCs considered to be invited to these meetings in order to continue exchange of information among German-speaking countries. In addition, exchange of annual status update reports among neighbouring countries should be considered prior to their submission for assessment by the Regional Verification Commission for Measles and Rubella.

Day 2 - Friday 13th January 2017

Session 5 - 09:00-10:30
Chairs: Prof. Dr. Reinhard Würzner (Austria), Dr. Günter Pfaff (RVC)

09:00-09:15 Summary and perspectives of the first day

Tarik Derrough provided a summary of the first meeting day for the new participants joining only on day 2 of the meeting.

09:15-09:45 Status of measles and rubella elimination in the WHO European Region

Mark Muscat repeated his talk about the current status of measles and rubella elimination in the WHO European Region for the new participants.

The question was raised what the most important action point should be and whether it would be a good strategy to target HCWs. Investing in training and motivation of HCWs to promote vaccination and closing existing immunity gaps were considered important tasks.

09:45-10:00 Vaccine hesitancy

In his presentation Peter Kreidl mentioned the in his view most important aspects concerning vaccine hesitancy, namely complacency, convenience and confidence. Some of the concerns of people are related to the notion that it is better to have the disease and that vaccination is just a money-making thing of pharmacy firms. The problem of the well-organized anti-vaccination movements was presented, who take advantage of the fears of people, as well as the importance to identify in the different situations what the reasons for non-vaccination are and then to come up with tailored solutions. Many people seem to base their decision concerning vaccination on their "gut feeling" and perceptions on risk of contracting the disease or severity of disease play a role. Since HCWs are the most important source of trust concerning vaccination, it is necessary that they take time for explanations and for individual counselling. There should be clear vaccination recommendations for parents and positive messages in addition to well-organized health institutions and systems to reach the hard-to-reach.

10:00-10:30 Challenges to reach sufficiently high vaccination coverage and to close immunization gaps in German-speaking countries

Maria Paulke-Korinek presented a flexible model developed in Austria taking population characteristics (such as numbers of births, deaths, immigration and emigration, etc.), documented vaccinations, number of vaccine doses given to doctors, sales figures of vaccines, etc. into account to get a better overview about vaccination coverage in the population. According to their results, high coverage rates of more than 95% were reached only around school age, while adolescents and young adults between 15 and 30 have higher percentages of susceptibles.

During the subsequent discussion it turned out that the model may easily be adapted to new situations, that there are some assumptions like for example that people born before 1960 are immune or that a certain number of vaccine doses are "lost" and not administered and that they look currently at Austria as a whole, but that a higher resolution down to subnational level may be possible in the future.

Anette Siedler presented the challenges identified for Germany, namely how to recognize and close immunity gaps, the monitoring of vaccination rates, appropriate measles surveillance when case numbers are high, regional differences concerning vaccination coverage according to age and gender, problems especially in congested urban areas, definition of target groups, insufficient action to address problems at

the local level, better spread of vaccination recommendations and to use all doctor visits to check vaccination status. Her conclusion for Germany is that vaccination is done too late, too rarely and with big regional differences.

The question was raised whether the regional maps showing vaccination coverage are a good predictor for where and in which age groups cases or outbreaks will occur and there is indeed a good correlation. So these maps could be used to shape targeted interventions.

Virginie Masserey Spicher presented the results of a study done in Switzerland according to which about one third of parents are willing to have their unvaccinated children vaccinated and about half of the unvaccinated adults would be ready to get vaccinated. The reasons for non-vaccination were analysed, training and information activities for HCWs were offered, parents were reached via different ways including letters, day care centres, etc. and information campaigns were organized specifically for young adults since there are many cases in unvaccinated members of that group. While the overall vaccination coverage rates have improved during the past few years, there are considerable differences between the cantons.

In the subsequent discussion it was suggested that the low performing cantons could profit from the experience of the more successful ones and some examples for that exist already. Since doctors want to have some recognition for the counselling they do, it was discussed whether remuneration for that task could improve their willingness to take time to inform their patients. HCW vaccination status should be checked and improved.

Martina Born stated that South Tyrol has the lowest vaccine coverage rates of all Italian regions, which for MMR is even below 70%. The last measles outbreak in 2011 affected mostly adolescents and there was a very good correlation between the affected regions and the low coverage rates. Given these low vaccination rates, the next outbreak can be expected. For obligatory vaccinations, which do not include MMR, reminders are sent and people have to pay for the administrative costs if they do not react.

The discussion clarified that free-of-charge MMR vaccination is also offered by paediatricians, but most vaccinations are done in vaccination centres. Some paediatricians also refuse to vaccinate. During the latest outbreak a gender difference was observed, but it was not attempted to link this to possible gender differences regarding vaccination coverage. It was suggested that an earlier date for the second vaccination should be considered given the high number of susceptibles that are accumulating. To improve vaccination coverage one could also think about a situation where people have to specifically ask for an exemption if they do not agree to be vaccinated rather than ask them whether they wish to be vaccinated or not.

Session 6 - 11:00-13:45
Chairs: Tarik Derrough (ECDC), Dr. Josef Simeoni (South Tyrol)

11:00-11:20 Vaccine hesitancy: communication with different stakeholders

In her talk Andrea Würz explained where information related to communication on vaccination prepared by ECDC is available on the Centre's website. ECDC offers support to countries for effective communication and how to enhance communication skills among HCWs. Based on evidence reviews of the literature and qualitative studies about vaccine hesitancy, communication guides and tools (such as presentations) are developed that can be adapted by the countries. Concerning vaccine hesitancy they found that it occurs in basically all population groups, and that it becomes dangerous if these groups grow and become increasingly influential. Concerns about safety and side-effects of vaccination are the main determinants on non-vaccination. ECDC staff can support countries to adapt already existing guides and tools to local/national requirements. ECDC also offers support for the European Immunization Week (EIW) by

providing an EIW Communications Toolkit for EU/EEA countries one month ahead of this week, complementing WHO-EURO's Communication Package for EIW.
Among the current ECDC projects is also a catalogue listing previous initiatives addressing vaccine hesitancy.

The question was asked whether support material for the EIW could already be available six weeks before the date rather than the currently proposed four weeks which is considered a bit short. The question has to be discussed with WHO-EURO and ECDC teams for the future.

There was also interest in communication materials translated in German. If there is a common interest to have materials in this language, a request could be made to ECDC.
Since a TV spot about vaccination against tick-borne encephalitis virus was quite successful in Austria, the question was asked whether any audio-visual material concerning vaccination exists that could be used on national TV. ECDC has developed animations on measles could possibly be adapted for that purpose.
The suggestion was made that doctor associations could take position against misinformation distributed by anti-vaccination groups, since without any measures, the impact of such misinformation could be considerable. Correct information should be provided on all relevant and trusted sources of information used by people.

11:20-11:40 European Immunization Week 2017: what can we do together?

Catharina de Kat-Reynen presented the theme of the 2017 EIW: "Immunization throughout the life course". The idea is to remind people that immunization is not only a childhood issue, but is important for different age ranges. To get ready for the 2017 EIW, WHO is preparing all kind of information material, ranging from brochures over posters and personal stories to videos. WHO requests that the countries share information about their activities to include them in their reports about the EIW 2017. It was mentioned that an ESPID (European Society for Paediatric Infectious Diseases) online course about vaccination for HCWs is available.

In the short discussion it was clarified that there is also a special section about pregnancy and that a WHO document is available for HCWs about vaccination deniers which is very helpful to prepare for discussions.

11:40-13:15 Experiences of the countries with effective communication and promotion campaigns, their evaluation and feedback

The presentations were given by Andrea Grisold from Austria, Sabine Reiter from Germany, Virginie Masserey Spicher from Switzerland, Claude Muller from Luxembourg, Marina Jamnicki Abegg from Liechtenstein and Martina Born from South Tyrol. Austria, Germany, Switzerland and also South Tyrol have done a lot of campaigns and activities to raise awareness, provide information and to get people vaccinated. Liechtenstein participated in the Swiss campaign. A wide variety of means were employed to reach people including websites, brochures, trams/buses/magazines/windows/buildings with red dots, posters, videos, radio spots, press releases and surveys. In Luxembourg no big campaigns were done, but there are occasionally interviews and press articles dealing with vaccination. Like in Liechtenstein, there is an overall very good acceptance of vaccination in the population.

13:15-13:45 Discussion

In the discussion it turned out that several participants consider comprehensive and long-term campaigns and targeting regular structures as the most efficient means since short-lived or single activities often do not have a lasting impact. It was suggested that vaccine promotion should make much more use of social/new media and maybe employ professionals for posting positive information about vaccination. Also doctor's assistants could be trained to provide information and advice to patients while they are waiting for their medical consultation. Many people are just unsure and hesitant to get vaccinated and it is important

to distinguish them from hard-core vaccine opponents. Since doctors and paediatricians enjoy the confidence of their patients, it is essential that they make sure that patients are properly informed and that their concerns are addressed. The important role they play in advocating vaccination should be adequately recognized.
Reliable numbers concerning serious vaccination side-effects or damages seem difficult to get, but would be helpful to argue with vaccine opponents.
There was also a suggestion that HCWs could visit schools and directly offer vaccination to close immunity gaps. What is possible is often a question of available resources.

14:45-15:00 Summary of the meeting results and closing

Günter Pfaff summarized that methods to identify vaccination gaps according to age and region had been discussed, that possibilities for improvement of rubella surveillance should be sought, that an exchange of communication materials used in the different countries may be beneficial, that efforts should be made to get HCWs involved for vaccination promotion, that vaccination opportunities should be offered where the people are, that many problems are identical or similar in the German-speaking countries offering possibilities for collaboration, that the focus should be on vaccinating, that the different ways of obtaining vaccination coverage rates should be summarized, what are the best ways to reach target groups other than children, that vaccination opportunities are offered throughout a country, how to deal with people being critical concerning vaccination, that clear instructions (SOPs) on how to react to individual cases/outbreaks are required, that an exchange of best vaccination strategies concerning people other than children are beneficial, that maybe a continuous exchange of experiences could be envisaged and that there are different offers of WHO and ECDC for information and support. He suggested that the new ASUs could be exchanged between the NVCs for review and comments (it is still possible to amend ASUs even after submission mid of April, basically until mid of June when the meeting of the RVC takes place), that guests from other NVCs could be invited, that the presentations given during the meeting could be exchanged and that regular meetings, for example every two years, could be envisaged. He thanked the hosts of the meeting for the excellent organization, especially Peter Kreidl for his enthusiasm to make the meeting happen.

Peter Kreidl suggested that the work in social media should be intensified, that methods how to calculate coverage rates should be exchanged and that possibly common preparations of the EIW and an exchange of materials used for campaigns could take place. He thanked different people and all participants for their contributions to the success of the meeting.

Conclusions of Day 2

The main conclusions of day 2 relate to addressing vaccine hesitancy as follows:

- Healthcare workers are a key trusted source of information on vaccines to parents and the general population. Communicating and counselling of hesitant parents is time-consuming and requires good communication skills. Training on communicating with hesitant parents and considering healthcare worker groups (nurses, “Ordinationsgehilfen”) other than doctors could be important tools for addressing hesitancy. Low level offers of such trainings should be provided.
- Safety concerns are important in the decision-making process of parents and vaccines. Therefore transparent information should be made easily available to address concerns they may have.
- Catch-up campaigns conducted in schools have been proven to be very effective and should be considered as important tools to increase coverage.
- Many activities to increase awareness on the benefits of vaccination were launched at national and sub-national levels but there is little information on their impact. Comprehensive and long-term

campaigns using existing communication channels such as media and enhancing others such a social media are likely to be more efficient compared to single activities.
- Cross-border exchange of information on cases, exposures and control measures should be further enhanced to limit transmission.

Action points

- Official websites with pro-vaccination content should be made more visible and be put high up in the hierarchy of results of internet search engines
- EIW communications package material should be sent well in advance of the EIW to also allow sufficient time for preparation of events at national as well as regional levels.
- Information material should be made available in German and audio-visual materials should be made easy for adaptation. Infographics and visuals on vaccine safety, side-effects and risk balance should target lay audiences in non-technical language.
- Countries should invest in training and motivating HCWs to promote vaccination
- Countries should take the opportunity of support provided by WHO and ECDC especially on matters relating to social media for awareness raising,
- Communication materials intended for certain sub-population groups should be shared among countries, such as general information for the public or specific groups (school children) the "Impfkoffer" for schools designed by German Länder. Available guidance from international organisations such as WHO and ECDC should be translated and distributed to HCWs involved in administering vaccinations.
- Social media should be more frequently used by health authorities and communicators for awareness raising activities if not already done, e.g. during the European Immunization Week.
- Whenever measles cases and outbreaks occur there should be activities to raise awareness and to refresh key messages including the need for vaccination
- Awareness raising activities should be planned as ongoing activities, and expensive actions such as e.g. lightning of buildings act more as "eye catchers" raising attention rather than increasing coverage in a sustainable way.
- Countries should request international organizations to provide materials in German language to be used for awareness rising activities.
- Stakeholders for measles control (e.g. NVCs) should propose medical associations to take a stronger position against HCWs advising against vaccination.
- Advocating vaccination should be properly recognized and countries should actively participate in the EIW
- Similar events such as this meeting should be organized in the future (maybe at biannual intervals) as they provide a good opportunity to share best practices, better assess options for control and enhance the international collaboration between stakeholders involved in measles control

Acknowledgements

The University of Innsbruck and the Regional Verification Commission for measles and rubella elimination are thankful to WHO Regional Office for Europe and the Austrian Society for Hygiene, Microbiology and Prevention (ÖGHMP) for the organizational and financial support for this meeting. Furthermore, the organizers want to thank Dr. Judith Hübschen for being the rapporteur of this meeting and Corinna Weiss, Karin Werth, Petra Decristoforo and Magdalena Breitwieser for administrative support. Our thanks also go to Sandy Göpfert and Linda Angeletti for assisting with the organisation and logistics of the meeting.