TECHNICAL DOCUMENT

Conducting health communication activities on MMR vaccination

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ECDC TECHNICAL DOCUMENT

Conducting health communication activities on MMR vaccination

A guide

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Contents

Abbreviations

EVAG	European Vaccination Scientific Consultation Group
FAQs	Frequently asked questions
GP	General practitioner
MMR	Measles, mumps, rubella
NGO	Non-governmental organisation
SEO	Search engine optimisation

Executive summary

This guide provides an overview of health-communication-related obstacles to measles, mumps and rubella (MMR) vaccination. It provides assistance in the planning and implementation of national communication initiatives on MMR vaccination.

Obstacles to vaccination

Several communication studies have identified a lack of knowledge regarding the advantages and disadvantages of vaccination within certain population groups. In addition to emphasising other aspects relevant to practice, these studies have shown that there is a need to provide full, balanced information, and to tackle uninformed perceptions.

Inaccurate perceptions involve the safety and alleged side effects of the MMR vaccine. Also, some population groups seem to underestimate the risks related to measles, mumps and rubella diseases, which leads to the perception of a low importance of the vaccination. These uninformed perceptions are not necessarily related to the level of education.

Healthcare professionals need to provide consistent information in order to maintain their role as an important and trusted source of information. Improved interpersonal communication between professionals and citizens as well as clear national guidelines on vaccination schedules can improve this. Additionally, there is evidence that suggests that there is a need for education regarding the importance of second doses.

Designing a national health communication programme

A national health communication programme and related activities can be tailored to suit the particular needs of a Member State. The suggestions included in this guide, combined with experiences from the Member States, can help to achieve the maximum impact from health communication activities when providing information on measles, mumps and rubella and on the MMR vaccine.

Identifying the goals and objectives for communication activities which suit local needs is a first important step. Objectives should be defined to provide the foundation for all related communication activities and messages. The next step is to identify the target audiences, which will inform the nature and content of all communication activities, as well as the distribution methods to be used. The target audience is likely to include parents of children and teenagers as the main focus, as well as unvaccinated adults. Healthcare professionals could also be an important target group. Target groups can also be segmented for maximum efficiency.

Well-designed surveys and field studies are an important source of information. Survey findings can help to describe the current mindset of the target population, identifying information gaps, levels of health literacy and uninformed perceptions that a health communication programme should address. In addition, survey data can be used in communication and also provide a baseline for assessing the impact of the health communication programme.

Key messages are crucial to ensure clear, concise and consistent communication. It is recommended that key messages are limited in number and focus on behavioural change by emphasising the positive outcomes associated with vaccination. The messages should be tailored to the various target audiences and address any uninformed perceptions identified at the survey stage that preceded the actual implementation of the health communication programme.

Key steps for a successful health communication programme

Materials and tools

Options for materials and tools that can be used in a health communication programme include factsheets, brochures, posters, audio-visual libraries, patient testimonials, social media and websites. Each format has individual benefits, and a combination of different formats can be used to reach the target audiences. For maximum effectiveness, it is important that materials are tested within the target groups before distribution.

Reaching the target audiences

Additional methods can be used to help reach target audiences. Mobilisation of other partners in society including supporters from non-governmental organisations (NGOs) can be a useful means for reaching different target groups, as can be the engagement of high-profile citizens and partnering organisations to support the health communication programme and the engagement with media. Awareness-raising events are also recommended, since they provide a platform to disseminate key messages.

In addition, media briefings can provide an important platform. These events give the opportunity to convey important messages to the press, such as the risks associated with measles, mumps and rubella. Finally, scientific

input is vital, and medical experts should be invited to meetings to advise on national policy guidelines. Their support will be useful in the health communication programmes.

Conclusion

The barriers to MMR vaccination include uninformed perceptions that could be effectively addressed by a national health communication programme. A step-by-step approach for the planning of objectives, the selection of target audiences, the design of surveys, and the formulation of key messages will provide the best foundation for a programme's success. This foundation will then assist in the selection, execution and testing of appropriate materials. Engagement with key medical and NGO stakeholders, as well as the media, will maximise positive outcomes for the health communication programme.

1 Introduction

1.1 About this guide

This guide provides information for the development of a health communication programme on measles, mumps and rubella (MMR) and the MMR vaccine. It offers recommendations, tactics, and practical guidelines on how to develop a coherent health communication set of activities and seeks to aid national health authorities in planning their own initiatives on measles, mumps and rubella and MMR vaccination.

This publication aims to support national authorities in setting out the objectives of the campaign, identifying key audiences, developing key messages, highlighting possible barriers, and providing guidance on the materials and tools that could be used. It outlines how these materials may be disseminated and what other supporting activities can be used to ensure that the communication campaign will be a success. Furthermore, this guide presents recommendations on how to adequately measure and evaluate all activities connected to the campaign. Measurement and evaluation are essential components of all programmes in order to ensure continuous improvement in communication efforts at the national and international level.

A draft of this guide was circulated to ECDC's Competent Bodies (Heads of Communication) and to the members of ECDC's European Vaccination Scientific Consultation Group (EVAG) for external review. Comments and input received were taken into consideration for the development of the current version.

1.2 How to use this guide

This strategic guide has been developed to act as a handbook for those involved in planning national initiatives. We hope that it will provide a better understanding of communication strategies aimed at reducing measles, mumps and rubella infection rates, eventually resulting in higher MMR vaccination rates in children as well as in eligible adults. This guide has been developed to either complement existing national initiatives or to provide the basis for the launch of new activities. As such, it contains suggestions for basic communication materials that can be adapted to specific national needs. However, it needs to be pointed out that the actual implementation of communication activities will be subject to national vaccination programmes and/or existing vaccination campaigns.

1.3 ECDC's role and responsibilities

Established in 2005, the European Centre for Disease Prevention and Control (ECDC) is a European Union agency whose mandate is to strengthen Europe's defences against infectious diseases through identifying, assessing and communicating current and emerging threats to human health posed by infectious diseases. In order to achieve this mission, ECDC works in partnership with national health protection bodies across Europe to strengthen and develop continent-wide disease surveillance and early-warning systems. By working with experts throughout Europe, ECDC pools Europe's health knowledge so as to develop authoritative scientific opinions about the risks posed by current and emerging infectious diseases. ECDC has its seat in Stockholm, Sweden.

In its Multiannual Strategic Programme 2007–2013, ECDC has set out a specific target area concerning the communication of information on communicable disease prevention and control. Strategies to reach this target include the development of the means, procedures and necessary partnerships for the efficient and coordinated communication of key public health messages and information, as well as support to the EU Member States' health communication capacities. This guide on the development of a health communication programme on measles, mumps and rubella and the MMR vaccine is one of several ECDC initiatives in this field and can be used as a support tool by health authorities in the Member States. It can easily be adapted to suit national strategies and requirements.

1.4 Contact

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2 A major challenge: reaching vaccination goals

While most parents do conform to general vaccination recommendations and may only need to be reminded of the importance of vaccinations, some parents' objections may become obstacles to reaching coverage goals. In this section we highlight a number of typical challenges to effective vaccinations programmes. They may differ among countries according to local circumstances, and specific characteristics of certain obstacles may not apply to all contexts. Challenges can range from lack of information, to false perceptions regarding the benefit-risk ratio of the vaccination, to active opposition due to personal or religious beliefs or societal expectations. Media hype questioning vaccinations, as well as distrust of traditional information sources may further add to the confusion or misunderstanding.

For further evidence on this topic, please contact the ECDC Knowledge and Resource Centre on Health Communication (ccu-krc@ecdc.europa.eu).

2.1 Lack of information

Clear information and concise recommendations about vaccination programmes (why, when and how to vaccinate) are important first steps towards reaching coverage goals.

An Italian survey on vaccine coverage conducted in 2008 which included an exploration of the reasons why parents in Italy decide not to vaccinate or to delay immunisation found that lack of information accounted for 9.9% of non-MMR vaccination or delayed MMR vaccination (1).

It has been argued that attitudes towards vaccination may not be the result of a detailed search for information about the issue. A Dutch study (2) suggested that most Dutch parents prefer not to have to think too much about the issue or make a conscious choice. In this context, vaccine recommendations and information on vaccination schedules are important elements to be taken into account in a communication strategy. According to a French survey (3), 56.5% of the respondents (representing the general population) think that immunisation against vaccine-preventable diseases identified in France should be mandatory. Furthermore, the Dutch study suggests that when given the choice, most parents prefer that their children are completely vaccinated under a national immunisation programme. It also suggests that parents generally hold positive attitudes towards vaccination and that social norms are in favour of vaccination (2).

2.2 Hesitant population

Another challenge to vaccination goals may be what could be called the hesitant population. An example of this can be parents who make a conscious decision to delay MMR vaccination so as to avoid immunising their children when they are very young. According to the Italian survey of 2008 mentioned above, 8.8% of non-MMR vaccination/delayed MMR vaccination were due to the parents' wish to wait until the child was older than the recommended age for MMR immunisation (1). Although we should not generalise from one particular study, this shows how useful such evidence can be for developing efficient health communication on MMR vaccination. Evidence of this nature may suggest that communication efforts should include a reminder regarding the importance of timely vaccination, as well as information on the benefit-risk ratio, since this may be relevant in persuading this group to follow national recommendations.

2.3 Uninformed perceptions regarding the benefit-risk ratio of MMR vaccination

Concerns about side effects and the safety of vaccines, along with perceptions of the low importance of MMR vaccination, are among the commonly quoted reasons for not vaccinating children. These reasons are often cited in combination. Among several recent related studies, a study conducted in Germany (4) indicates that 12.2% of the respondents (representing parents) think that immunisations can cause an 'overload of a child's immune system' and may induce allergies.

This type of uninformed perceptions may be common. The same study (4), which focused on lay persons/non-medical users of internet forums on vaccination, identified the perception that some parents may consider MMR vaccines as the least important of all childhood vaccinations. Many parents remember having had measles, mumps and/or rubella during their childhood. They do not expect that the course of the disease could be severe in their own children. This seems to indicate that many people may be to a large extent unaware of the risks associated

with a rising incidence of measles, mumps and rubella. Coverage rates could drop significantly if distrust of MMR vaccines were combined with a perception that MMR vaccination was not essential.

It is also important to note that a low level of health literacy and scarce economic resources among parents are not necessarily linked to low coverage rates for childhood vaccination. The opposite could be true: the results of a French study (3) show that a higher level of education among parents was linked to a lower adherence to mandatory vaccination. A survey featured in the British tabloid *Daily Mail* on 15 March 2008 (5) suggests that the same could be true in the UK. In contrast, an MMR vaccination coverage study conducted in Belgium noted a lower coverage (among other specific groups), in families with lower education levels or a history of unemployment (6)

The diverse data – although not extensive or generalisable but still helpful as examples of the type of evidence needed – indicate the relevance of monitoring the levels of health literacy in regard to vaccination. Evidence suggests that messages should contain full information about the benefits and drawbacks. Health communication efforts also need to tackle the potential unsubstantiated distrust in the vaccine. In most cases, communication activities at the national level should be aimed at enabling parents to make well-reasoned decision, as parents with a full picture of the benefits and drawbacks will be more prepared to resist counter-arguments that question positive attitudes towards vaccination.

In addition to potential distrust concerning the MMR vaccine (mainly identified among specific groups of the population), the recent media debate surrounding pandemic vaccines (in the context of the H1N1 pandemic) has drawn vaccines into a complex debate. Thus, health communication activities also need to take this recent development into consideration. Furthermore, the relationship between the effects of pandemic-vaccine-related communication on other vaccines needs to be well monitored.

2.4 Media hype

Media hype is to a large extent responsible for general as well as specific perceptions regarding the safety of vaccines. For example, as a result of media coverage in the UK, particularly stories that suggested an alleged link between MMR vaccination and autism, the news cycle around the topic triggered a phenomenon that led to an increased perception of this alleged link as a genuine threat – a perception which may have spread to other EU countries as well. Another media story regarding the identification of mercury preservatives in influenza vaccines that were presumed to cause neurological damage has received wide coverage and may also have contributed to decreasing trust in vaccines overall.

The media, traditional and new, have a strong influence on moulding perceptions that are potentially influential to the development of attitudes. In this sense, it is of vital importance to work with media professionals in order to foster their health literacy and raise their awareness of the real threat of measles, mumps and rubella, so they can convey appropriate messages and focus on the substantial public health concerns: 1) measles, mumps and rubella pose a threat to the health of children and, even more so, to adults; 2) cases of measles, mumps and rubella continue to be seen due to a lack of vaccination compliance; and 3) vaccinations are safer than having the disease (and potentially complications) itself.

2.5 Professional healthcare advice: Issues of trust and credibility

Decades of communication studies have shown that the reliability of the source of information and the perceived credibility of the disseminated information are important aspects of persuasive communication. Medical doctors and other health professionals play an important role in this process, as they are generally the most important and trusted source of advice on questions pertaining to health. This assumption is confirmed in a number of different studies, including a recent study undertaken in Germany (4), where 95% of respondents (representing lay persons/non-medical users of internet forums on vaccination issues) regarded their paediatrician as the most important source of information on immunisation, followed by information leaflets (48%), health magazines (45%) and the internet (39%). In a US study (7), parents who changed their attitude following an earlier decision to not have their child vaccinated, cited ‘information or assurances from healthcare providers’ as the main reason for their change of mind.

One needs to be aware, however, that following recent media stories and debates on the safety of the pandemic influenza vaccination, the perceived trustworthiness of healthcare professionals may have suffered: there is a need to monitor to what extent and on what topics healthcare practitioners may always be perceived as the most credible or reliable source. For health communication planning purposes, this needs to be examined in specific national contexts. Interpersonal communication between the potential ‘vaccine user’ and the healthcare professional is paramount for effective persuasion. Encounters between professionals and parents/potential vaccinees could therefore be supported by providing information materials which the professionals then distribute and by improving the professionals’ interpersonal skills in dealing with the patients’ needs for information. It also

has to be ensured that knowledge gaps among healthcare professionals regarding MMR immunisation are identified and addressed appropriately.

2.6 Commercially motivated information

It can be argued that across Europe citizens and professionals may not fully trust the available information about vaccines if they see it as unbalanced and largely driven by commercial interests, especially when provided by pharmaceutical companies. On this assumption, which needs further evidence, it is commonly accepted that a balanced set of information efforts between national health authorities and other organisations needs to be assured.

National and regional health authorities can be expected to have a key role when conducting information activities on vaccines, as they are perceived (in most countries) as a trusted source. While recognising the fact that the commercial sector is necessary for vaccine development and production, it is very important to stay clear of any commercial influence in the health communication programmes and to transparently acknowledge which organisations are involved in an initiative.

However, it cannot be ignored that pharmaceutical companies provide information about the vaccines that they produce and are fully entitled to do so. It may be necessary for MMR health communication programme coordinators to ascertain that messages issued by all sources are scientifically sound and not contradictory. This will strengthen the positive impact of messages delivered by public health communication efforts.

2.7 Vaccine scepticism

Active opponents

A number of groups sceptical about vaccination have emerged in Europe and other parts of the world. Their perceptions include the denial of a causal link between vaccines and the eradication of disease, the belief that vaccines cause diseases (for example that the MMR vaccine causes autism – see CryShame at www.cryshame.co.uk, Jabs at www.jabs.org.uk, and the Dutch Association for Critical Vaccinations at www.nvkp.nl) or a preference for alternative medicines. Some of these groups may not be large and as such they may not represent a significant challenge to reaching MMR coverage targets. However, these groups can be very active in disseminating their own interpretations on vaccination, thus potentially creating ill-informed perceptions about vaccines among larger population groups. It may be possible to promote a dialogue with these groups, focusing on improving levels of health literacy for better informed judgements.

Religious objections

Some religious systems of beliefs raise objections to MMR vaccination. In most European countries, these groups may represent a minority that does not have a significant impact on overall national coverage goals. The situation may vary among countries, but the close relations within these groups may cause inter-group outbreaks and national health authorities may decide that it is nevertheless important to address these groups through specific health communication activities.

Anthroposophic community

It is difficult to capture in a few lines the complexity of anthroposophy, but this community has developed specific views on the role of vaccinations. Vaccinations are administered rather sparingly, if at all, and rather late in childhood or early adulthood. The approach to measles vaccination has been discussed among anthroposophic specialists. Some favour the traditionalist anthroposophic approach, while others are taking a more interpretative view of the philosophy's foundations, arguing that anthroposophy is not in opposition to vaccination (8). Taking this into account, reaching out to groups within this community may be particularly important, depending on national contexts.

Roma population

A Swedish government report (9) which looked into the situation of the Roma population in Sweden highlights that conditions related to healthcare and disease (including insufficient vaccine coverage) can be linked to the Roma population's vulnerable situation.

Specific needs or obstacles regarding access to immunisation for the Roma population may vary in Europe, depending on national contexts, and should therefore be monitored.

2.8 Key learnings and experiences

On the basis of the feedback received from countries during the external review process of this document and a review of communications on MMR vaccination in selected countries (see Annex II), we have identified the following key learnings and experiences that can serve as suggestions on issues to consider when developing a health communication programme on MMR vaccination.

Gather evidence on existing perceptions and be aware of possible debates

Exploring the reasons why some people or specific population groups are hesitant or opposed to vaccination will help when tailoring the health communication programme to specific target groups. It will also serve as valuable input for the development of communication initiatives. (See also Sections 3.2 and 3.3 below.) Before launching a health communication programme it is also important to be aware of, and to prepare for the polarisation which a public debate may cause.

Give simple messages

There is evidence from communication science studies indicating the value and effectiveness of simple messages. There is also empirical evidence to sustain this principle. For example, during a recent catch-up health communication programme in Ireland aimed at addressing uncertainty in the student population about who had received the MMR vaccine and how many doses were received, the messages were made very simple: If in doubt about the number of doses you have received – get a dose! The benefit outweighs the risk.

Explore settings that provide convenience and incentives

As demonstrated by social marketing applied to public health, especially in the USA, one must be aware that effective messages are only a part of the health communication challenge. It is important to consider other dimensions to facilitate improved adherence to vaccination.

In Ireland, school-based MMR health communication programmes demonstrated how this principle can be adopted. School-based interventions proved to be more successful than university/college health communication programmes. One of the factors that may have influenced this outcome could be that schools have a captive audience and there is time set aside to leave the classroom in order to get the vaccine.

Generate support from regulatory bodies

Another issue to consider for public health intervention aimed at increased uptake of vaccines is the explicit support of a regulatory body. This support can be applied to several practical approaches and, from a social marketing point of view, involve tailored incentives that target specific groups.

During a mumps outbreak in Ireland in 2009, healthcare students in many Irish universities were informed that they would not be allowed to participate in clinical attachments if they did not have proof of two administered doses of the MMR vaccine. This measure was very effective in securing the vaccination of this population in the colleges where this was an edict.

Stress the importance of the second dose

People may not be aware that two doses are necessary for MMR immunisation to be effective. In order to ensure the effectiveness of the intervention, it must be stressed in all communication that in order to be protected against measles, mumps and rubella, two doses of the MMR vaccination are required. In addition, correct registration of administered doses is essential for the evaluation of vaccination coverage.

Make people remember the second dose

In addition to promoting the understanding of the need for a second dose, it is also necessary to remind target groups of the timeframe for taking the second dose. The potential of new technologies should be considered for this purpose. Automatic reminders, to be sent out in a timely manner after the administration of the first dose, may be an option to aid in the process. An example of a strategy to address this issue is the system in place in the Flemish Community in Belgium, where parents receive vaccination reminders from the Pupil Guidance Centres.

Involve and educate authoritative sources of information

Authoritative sources of information on vaccination should be at the forefront of communication efforts. As healthcare professionals are generally a trusted source of information on vaccines, it is important to educate and involve them so as to ensure that they contribute to the intervention. It is also important to ensure that administering MMR vaccines is simple and straightforward: the simultaneous administration with other vaccines is one possible way.

Use a combination of approaches

It is considered more effective to launch more than one communication activity at a time and involve a wide range of stakeholders, as repeated messages from a variety of sources are potentially more effective in changing perceptions, attitudes and related behaviours. One example of how a combination of approaches was used comes from Finland. There, an intensified measles, mumps and rubella prevention programme was implemented in the 1980s, combining information via mass media with an individual approach. A study of this intervention describes how computerised records of the vaccinated children were merged with the population registry to identify hard-to-reach families. The parents of non-vaccinated children were then referred to local health professionals. Several initiatives were put in place to improve adherence, including a mass-media campaign to support the vaccination effort (10).

3 Designing a communication programme for MMR vaccination

3.1 Setting goals and objectives

The first step in designing and carrying out a health communication programme is to establish goals and basic communication objectives.

What is the desired outcome of the health communication programme?

In 2005, the Regional Committee for Europe of the World Health Organisation (WHO) adopted a resolution which included the goal of eliminating measles and rubella and improving prevention of congenital rubella infection by 2010 (11, 12). The key strategies to achieve this are to:

- achieve and sustain high coverage (>95%) with two doses of measles vaccine and at least one dose of rubella vaccine;
- provide a second opportunity for measles immunisation as well as rubella vaccination to susceptible populations;
- strengthen the surveillance systems for measles and rubella; and
- provide high-quality information on the benefits and risks of immunisation.

At the global level, one of the United Nations' Millennium Development Goals is to achieve a two-thirds overall reduction of childhood deaths by 2015 (compared with the 1990 level). A report (13) published in December 2009 points out that an indicator of progress towards this goal is routine measles vaccination coverage, as many unvaccinated children die from measles. The commitment of achieving a 90% global reduction in measles mortality by 2010 compared with 2000 was reaffirmed in 2008 by all UN member states. However, as the same report suggests, after a period of rapid progress (2000–2006) in reducing global measles mortality, the reduction in measles mortality has begun to level off, making it very likely that the 2010 goal might not be reached. The report also discusses projections suggesting that in a worst-case scenario the annual number of measles deaths may rise again.

While most people conform to vaccination recommendations, many countries in Europe face significant challenges in reaching the recommended coverage goals for measles, mumps and rubella. This may be due not only to strained public health budgets and/or ongoing healthcare reforms, but also due to allegations of side effects that have no scientific basis and uninformed perceptions that may threaten public confidence in the safety and necessity of MMR vaccines.

Communication programme goals

- Contribute to increased and sustained immunisation coverage. Countries will reach at least 95% national vaccination coverage with two doses of MMR.
- Contribute to the elimination of measles and rubella.

The implementation details of national communication activities will be subject to national vaccination programmes and the existing vaccination campaigns in each country. In this context, an appropriately tailored health communication programme could provide significant value by working towards the success of the initiatives.

Providing accurate, balanced and understandable information about the specific risks linked to measles, mumps and rubella, and the benefits of vaccination, is increasingly important to achieve this fundamental objective of public health policy in Europe. For this purpose national audiences must understand, and be continuously reminded of, the value of vaccines.

For instance, evidence suggests that the vast majority of parents immunise their children. This needs to be taken into account in communication activities as parents need to be reassured that having their children vaccinated was the right decision. This is especially important in an environment where those opposed to immunisation may undermine the confidence of those who would normally immunise their children without a second thought. From a public health point of view, there are potentially very substantial health gains to be achieved from ensuring that those who intend to immunise their children actually do so.

In areas where immunisation targets may be challenged by uninformed perceptions, communication activities should aim at providing clear and factual information that will help target groups to better understand their options and therefore make informed decisions on vaccinations. This can be achieved by focusing on the risks linked to measles, mumps and/or rubella while remaining transparent about the (less significant) risks linked to MMR vaccination.

Whether to address all three diseases in one health communication programme, or to focus on one of the diseases, should be a decision based on the situation in the country or region in question. Often, the prevalent uninformed perceptions and distrust relate to past media coverage on a specific disease: for example, there seems to have been more UK coverage on measles in relation to MMR vaccination than on mumps or rubella. It is highly likely that this will be different in other countries. Also, past health communication programme efforts will have an effect on the overall need for public (or professional) education in relation to one or more specific diseases.

Communication objectives (possible priorities)

- Increase the general understanding of the risks linked to measles, mumps and/or rubella.
- Increase levels of reassurance among people who are pro-vaccination so as to ensure that those who currently immunise their children continue to do so.
- Change misperceptions regarding the necessity of MMR vaccination, including the elimination of uninformed perceptions about the benefit/risk ratio of the vaccine.

The objectives must underpin all communication activities, and messages should be consistent and complementary. This will increase the likelihood of recognition among target audiences, which again will increase the chances of expanded national vaccination coverage across Europe.

3.2 Identification of target audiences

A health communication programme must have clear target audiences. The key to identifying a target audience is to understand who is affected by the issue in question, who makes the relevant decisions, and whose perceptions, attitudes and related behaviour needs to be changed in order to reach the goals of the public health programme and its communication objectives. Possible primary and secondary target groups are presented below, but it needs to be acknowledged that these categories will have to be adapted to the specific contexts and aims of national health systems and public health policy priorities.

The key question in this context is: Which population group(s) need(s) to change perceptions, attitudes and/or behaviour in order to reduce the incidence of measles, mumps and rubella through effective and timely vaccinations?

Primary target groups

One crucial target group are people who make the actual decisions on whether to vaccinate. Published research indicates that vaccination of children is mainly affected by the attitudes of their parents (2).

It may also be important to target individuals, including adults, who have not had measles, mumps or rubella or have not been vaccinated. It is also important to take into account that even if a person has had one of the three diseases but not the others, the MMR vaccine is still recommended since there are often no alternative monovalent vaccines and the mounted immune response that was acquired during the course of the disease may neutralise that vaccine virus component.

Possible primary target groups

- Parents of children and teenagers. Particularly at risk are:
  - children before the first dose is given; and
  - children before the second dose is given (the second dose needs to be given within a certain period of time in accordance with national recommendations).
- Hard-to-reach groups, including followers of Anthroposophy, religious groups and Roma populations, who often have low childhood vaccination coverage rates.
- Susceptible individuals, including adults:
  - Individuals of all ages who do not have a history of vaccination against these diseases and have not yet developed the diseases.
  - Individuals who have lost their immunity due to medical treatment for chronic diseases (e.g. chemotherapy for cancers or immunosuppressive treatment for autoimmune diseases).
- Healthcare professionals as key communicators of health literacy efforts aimed at MMR vaccination.

It may also be relevant to consider that healthcare professionals could be the primary target of communication activities in order to engage them in actively promoting vaccine uptake among their patients. They can be a main force behind increased coverage. Given the importance of healthcare professionals in influencing parents' and others' decisions on immunisation, it should be considered to add a strong component to all communication activities which consists of educational tools and tailored information for healthcare professionals.

Secondary target groups

As people rarely make important decisions in isolation, focussing only on the primary target group is not advisable. It is also important to assess who is influencing the target group's perceptions and attitudes — and eventually their decision on whether to proceed with MMR vaccination.

While parents do remain the ultimate decision-makers on childhood vaccinations in most European countries, their decisions are often influenced by paediatricians, general practitioners, paediatric nurses or the guidelines of a day-care centre. As mentioned above, healthcare professionals can also be seen as the primary target group of a health communication programme, but depending on the programme's specific aims, they could also constitute a very important secondary target group. Either way, they are likely to play a crucial role, directly or indirectly, in the success of the health communication programme. Susceptible individuals, including adults, may be influenced by their general practitioners.

Similarly, religious groups and ethnic minorities are likely to be influenced by religious or community leaders. Networks and organisations that are related to hard-to-reach groups can constitute an important secondary target group. Any health communication programme should also make an attempt to educate journalists and other media professionals, in order to avoid the dissemination of uninformed perceptions.

Increasingly, cross-sectoral interventions for public health are among contemporary health policy priorities. It is therefore relevant to also consider support to teachers as promoters of health literacy efforts aimed at MMR vaccination.

Possible secondary target groups

- Paediatricians
- Paediatric nurses
- Childcare personnel
- General practitioners
- Religious leaders
- Local leaders of ethnic minorities
- Networks and organisations related to hard-to-reach groups
- Media professionals
- Teachers

Segmentation and prioritisation

In order to effectively and cost-efficiently develop communication activities, it may be necessary to segment and prioritise the various target groups. Skipping segmentation (i.e. keeping the focus on the general public) is not advisable, as this can decrease effectiveness.

Possible segmentation of the primary target audiences may include:

- segmentation by demography and/or social status (such as parents/grandparents with children in specific groups defined by age, gender, income brackets, level of education, and ethnicity);
- segmentation by health status (such as patients under treatment for chronic diseases); and
- psychographic segmentation (a more complex approach based on communication science research which allows focusing on social class, lifestyle, personality, values, attitudes, etc.).

Possible segmentation of the secondary target audiences may include:

- stratification by role in delivery of vaccines and/or provision of information about vaccination and health (for example healthcare practitioners, health and social insurance providers, day-care centres/schools, family and community centres, centres of worship, etc.); and
- stratification by advocacy groups who are/could become vocal in the vaccination debate in the country (consumer groups, parents' groups, healthcare professionals).

Target groups should be prioritised based on the public health programme goals and its communication objectives. Please note that ensuring inclusion and participation of vulnerable groups is particularly important in European public health policy. Also, be aware that it may be necessary to address specific barriers and possible motivations that would influence each group's perceptions and behaviour (see Section 3.3 below).

3.3 Identification of barriers to vaccination coverage goals

There are a number of practical barriers that contribute to poor vaccination coverage. One barrier could, for example, be the limited reimbursement of incurred vaccination costs and/or restricted healthcare services for susceptible individuals outside the traditional target group for MMR vaccination (i.e. children). In other words: unvaccinated adults whose vaccination costs are not covered might find MMR vaccination too expensive. As long as practical barriers remain the main reason for not getting vaccinated, health communication programmes are likely to have limited impact. Most European health systems provide the MMR vaccine free of charge to children, which still does not automatically ensure that vaccination coverage goals will be reached. Any shortcomings in reaching vaccination goals may thus be attributed to a target groups' existing knowledge, perceptions and attitudes rather than practical barriers. Knowledge, perceptions and attitudes can be changed via effective communication, but in order to choose the most effective communication strategy it is necessary to understand what they are.

What is the current mindset of the target groups and how does it impede MMR vaccination?

Childhood vaccination barriers related to knowledge, perceptions and attitudes may include beliefs that MMR vaccines are unsafe, or that measles, mumps or rubella constitute no significant health risk. There might also be a lack of general knowledge about the benefits of vaccination, or a lack of knowledge about the need to go through a full vaccination course including booster shots.

In terms of vaccination of susceptible adults, attitudes may imply taking the involved health risks lightly, for instance if a person never caught any of the three diseases in question during childhood.

Surveys and field studies may help to identify current information gaps, perceptions, levels of health literacy, attitudes, concerns and motivations among the local target audiences. As already discussed in section 2.3, the current media debate surrounding the H1N1 pandemic vaccines poses new communication challenges, and the relation between the effects of pandemic-related communication on other vaccines also needs to be monitored.

Evidence-based tools, surveys and field studies can help public health professionals to inform communication programmes and adjust the segmentation strategy, channels, materials, and messages for best impact. For improved effectiveness, health communication studies should be carried out regularly to identify changes in perceptions, attitudes, levels of health literacy and behaviours, but this also depends on available funds. Surveys can also be used to measure the impact of communication activities and adjust communication strategies if necessary.

In addition to their value as measurement tool, surveys may also be used for strategic communication analysis. Opinion surveys on MMR vaccination can reflect beliefs, support or fears which can be addressed through health communication programmes. For example, to tackle beliefs such as that measles, mumps and rubella are harmless childhood diseases, facts and figures can be powerful arguments. The use of opinion studies in health communication programmes will be perceived as being responsive to public concerns and therefore as relevant and convincing.

Monitoring the internet may also be useful. Information on the web is very accessible and may support other means of collecting information. A source of useful data may be statistics on online search patterns and terms. There are a number of tools available for this purpose, and they deserve serious consideration from the staff involved in planning health communication activities.

Typical challenges to effective communication about MMR are discussed above in Section 2.

3.4 Development of key messages

In order to ensure that the information provided by health communication programme is consistent and concise, a set of key messages should be developed to provide the audience with relevant information. The purpose of key messages in any communication activity is to change the mindset of the target group to a desired mindset and induce the desired behaviour. In order to progress with the development of key messages it will be necessary to agree on the desired results: What perceptions, attitudes and beliefs on MMR vaccination need to be addressed?

What is the desired mindset of the target group(s)?

It is recommended that the key messages address the consequences of behaviours (for example 'vaccination minimises health risks') since an important determinant of behaviour is the belief in consequences. The key messages could therefore emphasise the positive aspects of vaccination and focus on its benefits. For example, when people believe that vaccination will affect their child favourably, their attitudes may become more positive toward vaccination and they are then more likely to decide in favour of vaccines.

For communication activities geared toward the MMR vaccination of children, the desired mindset for parents as a primary target group could be:

- Measles, mumps and rubella are too risky for the health of my child.
- The potential side-effects of MMR vaccinations are far less risky than the diseases.
- By having my child vaccinated, I help limit the risk of measles, mumps and rubella for other children as well.

WHO's 'seven key reasons' why immunisation must be prioritised (14)

- Immunisation saves lives.
  Immunisation saves the lives of more than three million people worldwide each year.
- Immunisation is a basic right – but not accessible to all.
  In recent decades the world has seen immense improvements in health, but…
- Outbreaks pose a serious threat.
  Thanks to effective vaccination programmes, most people in industrialised countries have never experienced the devastation of outbreaks.
- Infectious diseases still kill.
  Before the introduction of routine childhood vaccination, infectious diseases were the leading cause of child death.
- Diseases can be controlled and eliminated.
  With sustained high vaccination coverage, the incidence of vaccine-preventable diseases declines.
- Immunisation is cost-effective.
  Immunisation is undoubtedly one of the most cost-effective health achievements of modern times.
- Children depend on health systems to provide safe, effective and inexpensive immunisation.
  Formidable achievements and a significant decline in suffering and death has been the result of successful immunisation interventions over time.

The WHO 'key reasons' for prioritising immunisation can also be adapted to build key messages for different target groups.

Additionally, the messages could address the basic information that each audience needs. In the context of measles, mumps and rubella, this could consist of concise information on the diseases, including the complications that may develop from the diseases in question. In order to achieve this, an approach based on health literacy could be potentially effective.

Examples of key messages on measles in children

- The number of children catching measles is rising.
- Measles is one of the most contagious infectious diseases.
- To be protected, children need to be vaccinated twice with the MMR vaccination, which also protects them against mumps and rubella.
- If unprotected, the child is almost certain to catch measles if in contact with an infected person (15).
- The child will be at risk of severe complications if infected with measles after reaching adulthood.

Examples of key messages on measles for adults

- Measles are likely to cause long-time illness and severe complications in adults.
- The complications of measles include chest infections, fits, swelling of the brain, and brain damage, possibly leading to death (15).
- It is never too late to get vaccinated against measles (15).

Examples of key messages on mumps in children

- To be protected, children need to be vaccinated twice with the MMR vaccination, which also protects them against measles and rubella.
- If unprotected, the child can catch mumps if in contact with an infected person.

Examples of key messages on rubella for adults

- Rubella is a highly contagious disease which puts unborn children at high risk.
- If a pregnant woman is infected within the first 20 weeks of pregnancy, the child is at high risk of being born with a range of serious life-long disabilities. Spontaneous abortion occurs in up to 20% of cases (16).
- Anyone who is not immune to rubella can pass on the virus. Get vaccinated now – don't wait until you or someone close to you is pregnant.

Key messages should also be provided on the MMR vaccination itself, such as the suitable vaccination age for children, necessary number of doses, location of vaccination centres/administering doctors, and the benefit/risk ratio.

Facts about MMR vaccination

- The MMR vaccination prevents measles, mumps and rubella. These diseases can cause potentially debilitating complications. Measles can even be fatal (15).
- Two doses are required. National recommendations indicate the appropriate timing for the vaccine and the intervals for the two doses.
- The MMR vaccine has been in use for more than 45 years, and more than 500 million doses have been given in more than 100 countries worldwide (15).
- The MMR vaccine is as safe as any vaccine can be (15).
- It is never too late to get vaccinated (15) – even for adults.
- Even people who have had only one of the three diseases should be vaccinated with the MMR vaccine since there are often no alternative monovalent vaccines available. The reason for this is that the mounted immune response that is acquired during the disease neutralises the vaccine virus component. In addition, some people may falsely remember one of those diseases from their childhood, which leaves them susceptible to the disease.

The following aspects should also be considered in order to ensure the effectiveness of the key messages:

Level of simplicity

In general, messages should be kept as short and simple as possible. They should be easily understandable for the target audience (this should be researched) to ensure that the audience will remember them. Do not use more than three key messages. Jargon, such as acronyms, should be avoided unless the target audience is already highly familiar with the terms being used. However, jargon can be useful when addressing specific groups, such as healthcare professionals. For these, medical/scientific language is clearly more appropriate, and reference can also be made to clinical guidelines if available.

Using other facts

While facts and graphs can help emphasise the seriousness and the validity of the messages, developing complicated or highly technical texts or charts is usually counterproductive. Messages should be factual enough to be compelling, but kept user-friendly. While the key messages could focus, for example, on the positive aspects of the vaccine, it should also be openly acknowledged that side-effects exist. A general lack of transparency about the communication activity and the facts behind it could result in a loss of credibility and increased fear or uncertainty, and therefore render the communication activities ineffective.

Complications from the diseases

- Measles may lead to complications in as many as 20% of all cases, and it is worse in adults. Measles may cause chest infections, fits, encephalitis (swelling of the brain) and brain damage, sometimes causing death. About one in 1,000 measles cases develop encephalitis, and 25% of those affected will never be able to go back to regular school or hold a normal job. Between one in 1,000 and one in 3,000 measles cases result in death.
- Mumps can cause viral meningitis, permanent deafness and encephalitis. Rarer complications include inflammation of the pancreas, ovaries and testicles. In pregnant women, there is a severe risk of miscarriage when infected during the first trimester.
- Rubella can cause congenital rubella syndrome (CRS) which can occur when a woman becomes infected during the first trimester of pregnancy. CRS may cause foetal death, premature delivery and serious birth defects. Rubella can also cause encephalitis in one in 6,000 cases. Other complications include low platelet levels, haemorrhage and pain, and/or swelling of the joints.

Personal relevance

Messages must be relevant to the target audiences. 'Alarming facts' highlighting the seriousness of the issue may be useful for catching the audience's attention. Perceived relevance can be further increased by focusing on the personal benefits to be achieved if a person complies with the message and by tying into the motivations of the target audiences or, if possible, making an emotional connection (for example 'MMR vaccination reduces the infection risk for your child in the future').

Social responsibility

Another key motivation may be helping society at large. The programme should therefore emphasise that vaccination not only helps the vaccinated person but also limits the overall risk of spreading measles, mumps and rubella in the community and thus improves 'herd immunity'.

Increase understanding of the 'how to'

The target group's desired actions (i.e. behaviour) should be described as easy and attractive, or at least in a way that allows the target audience to have a very clear idea about what they should do and how to do it. It should be made clear at what age vaccinations are to be administered and where to go to get the vaccine.

Examples of key messages on the 'how to' on childhood vaccination

- MMR vaccination is the only way to prevent the potentially debilitating complications of measles, mumps and rubella.
- National recommendations indicate the appropriate timing for the vaccine and the intervals for the two doses. However, even though earlier is better, it is never too late to vaccinate a child.
- Contact your family doctor or paediatric nurse for more information (this may vary in different health systems).

Increase understanding of the reasons for immunisation

In health questions, as in many other areas, people often want to know not only what they should do, but also why. This can vary depending on the target groups. Some groups find that simple instructions on what to do are more compelling than having to understand lengthy explanations on why such actions are necessary. Other groups may not be willing to accept the need of taking action without understanding why. Therefore, knowing the target audiences and their motivations is a key point in message development (see Section 3.6 on testing key messages).

Whether to address only the 'how to' or (also) the 'why should we' may also be influenced by media dynamics. Short instructions on the 'how to' may work for TV spots and the main text on websites ('Avoid the risk of debilitating complications by vaccinating your child against measles – contact your paediatrician!') while longer explanations on the 'why' are more appropriate for longer communication materials such as leaflets and brochures.

Examples of messages on the reasons for MMR vaccination of adults

- MMR vaccination prevents measles, mumps and rubella. These diseases can cause potentially debilitating complications. Measles can cause death.
- If I have not had measles, mumps and rubella as a child, and I am not vaccinated, my health may be at risk.
- By getting two doses of the MMR vaccine, I eliminate the risk for myself and reduce the number of cases of measles, mumps and rubella.

3.5 Producing information materials and tools

In order to induce a transition from a current mindset to a desired mindset with the associated desired behaviour (i.e. increased coverage rates) the most promising strategy may be to blend various messages and use different forms of presentation.

Creativity is the key to producing eye-catching materials and tools that attract the attention of people who otherwise may have little interest in the topic. Catchy messages and materials should also contribute to the word-of-mouth dissemination of messages: this may be an effective approach to reach a wider audience, especially since parents – one of the key targets – are an audience that relies to a great extent on information and advice from friends, family, and peers.

Delivering the key messages

When developing information materials it is important to ensure that the information provided remains consistent and concise throughout the material. Key messages developed at the national level could be particularly helpful for this purpose. A few general points can be considered in this context:

- Communication materials should rely on a set of no more than three key messages which can be supported, if needed, by sub-points.
- The most important message or the main call for action (such as 'Get vaccinated!') should be repeated throughout the document, or at least in the beginning and at the end.
- The language should be kept clear and simple, conversational rather than formal, and avoid jargon by using as few technical terms as possible.

Format of materials

Deciding on which types of materials are to be produced as part of the communication activities depends on budget, target audiences and the level of detail to be conveyed. A mix of different materials is usually preferred. These may include:

- letters to targeted individuals (such as new parents, health professionals, childcare institutions);
- disease factsheets and frequently asked questions (FAQ) documents (print or online);
- brochures, leaflets and posters (to be provided/displayed in general practitioners' offices, in paediatric clinics, pharmacies, childcare facilities);
- advertisements (for general and/or specialised print media);
- TV and/or radio spots; and
- educational materials to be used in local health literacy programmes.

Specific guidance on types of communication materials and tools is included in Section 4.

Layout

A visual identity for the health communication programme is important and can be easily achieved even if the budget does not allow for professional design. For instance, using a specific logo, the same fonts and a consistent colour scheme for all materials ensures that all programme materials are recognised as part of a common initiative.

- The use of visuals should illustrate the key messages and be appropriate for the selected audiences.
- The text should be aligned to the left (as justified text is harder to follow).
- The text should have an attractive look, for example by using columns, text boxes, bold fonts.
- The use of capitals should be limited.

Authorship

It is important for recipients of information to understand where the information originates. Logos of institutions participating in the health communication programme should be used in all materials, and all other supporters of the health communication programme, such as non-governmental organisations, professional associations or patient groups, should be acknowledged.

Moreover, contact details or references for more information should be included in all materials.

3.6 Testing key messages and materials

In order to ensure the effectiveness of the health communication programme materials it is recommended to test them to find out which ones resonate best with the target groups.

One possible approach before finalising the materials and launching the activities is to set up focus groups consisting of individuals who belong to the target groups in order to test whether the key messages and draft materials are:

1) presented in a way that catches attention;
2) understandable;
3) perceived as relevant; and
4) able to change the perceptions of the focus group participants.

While focus group results will not be statistically representative of the general target group, focus group research is a potentially effective method to explore some of the possible motivations of the target audiences and/or to brainstorm on alternative approaches.

3.7 Channels

In order to ensure that communication activities are successful, appropriate means of disseminating the information must be identified. These are the channels of communication, and the choice will depend on the target audiences and the type of message developed, taking into account the required level of detail.

Media channels

Media channels can include 'traditional' channels, such as leaflets/brochures, posters, TV or radio commercials, or 'new media' such as blogs and social networking sites (for example Facebook and Twitter).

The channels used for the dissemination of key messages should reflect the specific targeted audience. Different target groups may have their own needs and concerns, use different media channels and access different venues. Therefore, targeted information channels are to be considered for each group.

What are the target groups' preferred sources of health information?

The selection of a media channel will also depend on the level of detail of information being distributed. Short instructions on recommended actions may work for TV/Radio spots and the main texts on websites, while explanations on why these actions are necessary are more appropriate for longer communication, such as leaflets, brochures or materials that support interpersonal communication with health professionals.

When focusing on specific groups, targeted channels should be indentified and used. For provision of detailed information to the specifically targeted groups (primary and secondary), direct distribution of leaflets or brochures is recommended as well as making such materials available in highly frequented places. Certain groups would also benefit from information on the internet, blogs and other interactive channels, as they are more likely to seek out information from dedicated MMR-related sources.

When addressing the general public (even if 'general public' is a rather vague and diffuse concept), a combination of channels can be used. In order to reach as big an audience as possible, the most general and widespread means of dissemination are advisable. For example, posters and public service announcements should be made available on the most popular and visited media channels (print, radio, TV, internet).

Trusted sources

National and regional public health authorities can be expected to have an advantage when conducting communication activities on vaccines as they are (in most countries) perceived as a trusted source. For this reason, it is particularly important to list clearly in all materials – whether they are audio-visual, web-based or in print – who is providing the information. In addition, logos and details for further information should be included, so recipients can easily trace the origin of the communication. If non-government parties (such as professional associations or patient groups) are involved in the health communication programme, this should also be stated.

Being consistently associated with commercial interests is likely to be counterproductive when it comes to building trust. It is particularly important to make clear that national health communication programmes operate independently from any commercial interest in order to overcome uninformed perceptions of undue influence on the part of any industry.

Spokespersons

Involving spokespersons may be an effective tool for communicating messages. Spokespersons must be perceived as sources that can be trusted (which implies they have no direct financial stake in the issue) and are capable of navigating the often conflicting information that circulates on the issue (vaccination experts, paediatric nurses, senior health officials).

While we recommend working with the above-mentioned 'expert spokespersons', celebrities have also been proved to be an effective means of attracting attention to an issue and for generating media coverage. Therefore, working with a celebrity who is also known as a responsible parent of small children can also lend additional support to the health communication programme, especially when communicating messages via the media.

3.8 Reaching the 'hard-to-reach'

Immunisation programmes will often encounter resistance to vaccination. When developing a communication plan it is essential that research is conducted to identify those audiences which could be considered 'hard-to-reach'; different types of 'hard-to-reach' groups can be found nationally, regionally and locally. These groups may be socially, economically, physically or geographically isolated, or may simply lack appropriate information to make an informed decision. Therefore a range of communication strategies is needed (17).

A health communication programme with multiple outlets is central for communicating the severity of disease and the importance of vaccination. User-friendly resource materials, including clear and simple leaflets which address the main issues, may be a good option. Consistent messages are equally vital when attempting to build trust. The main barriers to vaccination for each of the identified groups should be researched and materials should be

developed to address these concerns. These tailored materials should be tested with relevant target groups to ensure that appropriate language and information is included. The programme also needs to prepare detailed information, in addition to simple, fact-based materials. Information sources, such as clinical papers and relevant websites, should be identified for those who wish to find out more (18).

Mass mailings with awareness information could also be considered. The mailings – mailed directly through the health authority – can highlight the importance of vaccination and include details of local vaccination centres and methods for finding further information or making a vaccination appointment. Establishing a local vaccination call centre can also be useful, with multilingual operators to address any concerns or questions. Video information on immunisation for use in healthcare facilities could also be developed. Websites could also be established and officially endorsed.

Access to information is a further consideration. Information packs for nurseries and child day-care centres could provide such an outlet, and support should be offered to help them to actively promote immunisation. Reaching parents early is another key step in promoting the importance of vaccination. Identifying ante-natal and post-natal groups and providing them with vaccine information may also be effective.

Communication with healthcare professionals is essential when considering 'hard-to-reach' groups. Healthcare professionals could be a target for educational efforts regarding the severity of the disease and the importance of vaccination. Family doctors or nurses could follow up with those patients whose immunisations are not up-to-date and offer disease and vaccination information as well as options for scheduling an appointment. Appointment confirmation letters could be sent. Where appropriate, appointment reminders and reconfirmations can be sent by text message.

The media may also play an important role in communicating with 'hard-to-reach' audiences. It is imperative to ensure that all media coverage is evidence-based in order to increase trust and confidence in vaccination programmes. Both positive and negative issues can be covered but areas of improvement should also be mentioned. Using national, regional and local media may widen the audience reach. Media announcements from national and international healthcare bodies may underscore the importance of the vaccination programme. Stories should be short and should contain simple, consistent messages, presented in clear language. Professional and accredited spokespeople could endorse key messages (17).

When addressing groups actively opposed to vaccination, it is crucial that available scientific information is leveraged and communication channels and strategies used by the immunisation sceptics are also used by the public health immunisation services. Public health authorities must have appropriate contingency plans to prevent vaccine scares from turning into a public health crisis. External experts may add credence and promote immunisation services, thus helping to present a more personal and emotive approach to immunisation. Consultation groups at the national level can also help to promote an exchange of views within the healthcare profession, and a national immunisation information system can provide information specifically aimed at physicians (17). Additionally, it is important to consider the relevance and effectiveness of interpersonal communication to achieve some of the defined communication objectives.

3.9 Addressing the cultural setting

Healthcare professionals and staff need to communicate effectively as they care for increasingly diverse communities, often with specific needs, varied language abilities and literacy skills (19). Cultural and religious influences may shape the beliefs of the audience and their decision whether to vaccinate. A diversity of perceptions within a community may lead to reluctance to vaccinate or even accept information on measles, mumps and rubella in general.

Cultural issues can take various forms. Some religions may be opposed to vaccination because of the specifics of vaccine production (animal-derived or cell-culture-grown viruses), while others may have a moral objection to vaccination. Nomadic populations, such as the Roma population, may not necessarily object to immunisation but may be more difficult to reach with routine vaccination programmes (20). Parents in the anthroposophic community may choose not to vaccinate their children with the MMR vaccine (21). Strategies should be developed to reach all of these populations.

Research should be conducted on issues that are likely to be raised in conjunction with the MMR vaccine. Key messages should be developed to address these concerns which, if not dealt with, could isolate the community and lead to reduced vaccination uptake. These messages, as well as clear facts, should be the basis for the development of culturally appropriate educational materials, offering answers and reassurance for each audience.

Although increasing the knowledge about disease and vaccine within these groups is important, it will not necessarily lead to the general acceptance of vaccination. Socio-cultural and political influences may play a role and communication strategies may therefore need to be specifically tailored to local needs, while maintaining a consistent message that will increase trust in healthcare practitioners (22). A mix of education and locally tailored community-based strategies will be needed to address concerns and refusal.

Advocacy coalitions can help to build trust in vaccination programmes (17). Cultural and religious leaders are extremely influential and can help promote vaccination and act as a source of information on how to address concerns within a community. Regular meetings should be held with community leaders while developing materials which incorporate their suggestions. Ensuring that community priorities are incorporated into communication programmes can help to gain trust and acceptance.

Working with cultural/community groups and their leaders can be beneficial, as caregivers trust other community members when making decisions about the health of their children (22). Providing detailed information and addressing specific concerns, in collaboration with group leaders, will help to build trust with these groups. Recruiting outreach workers from within a community and training them to deliver information about vaccination can also help to increase vaccine uptake.

Further options to address different cultural backgrounds include adjusting immunisation schedules to fit a community's way of life, ensuring easy access to vaccination clinics, and adapting immunisation invitations to meet the specific needs of a community. These initiatives can all contribute to increased vaccination uptake (23).

3.10 Timing

A communication programme can, in principle, be started at any time. However, the European Immunisation Week, an initiative led and coordinated by the WHO Regional Office for Europe, takes place each year in April and may provide a platform from which to build programme activities in order to achieve synergy at national and local levels.

3.11 Balancing means and resources

While large-scale communication efforts may require extensive budgets to cover components such as market research and development, or the printing and dissemination of expensive materials, not all communication activities necessarily require large budgets and costly resources.

The materials contained in a communication programme should be in a format designed to ease duplication and dissemination and take into account adaptability with respect to cost. New communication activities can also build on established national or international initiatives, using pre-existing resources and budget.

The internet and its social media (blogs, Facebook, Twitter) provide a relatively inexpensive way to disseminate messages. Some TV and radio stations may agree to distribute public health messages for free or at a reduced price.

Public participation in communication activities could also be considered, including those of local/regional stakeholders, health advocates, or NGOs. Some typical examples are collection of research data, target audience identification, and programme implementation. Local participation and sharing authority with decentralised agencies or community groups can dramatically change the nature of a health communication plan and improve its chances of success.

4 Materials and tools

The development of materials and tools for communication activities should be based on an initial concept. The decision on what materials and tools to use also depends on the other components of the health communication concept.

Health communication materials should be developed in a way that reflects and addresses communication objectives, target audiences, and resources. Each type of communication material has its own advantages and limitations, and its use should take into consideration the desired reach and target audience.

- Letters, mailings and factsheets are best suited to targets that are easy to identify, such as GPs and nurses, teachers, nursery workers, and new parents, but not entire populations.
- Information brochures, because of their larger size and higher production costs, should be targeted at even smaller audiences, such as specific groups that are likely to be more suspicious of MMR vaccination.
- Posters are an easy way of reaching out to large audiences, as they are designed for public places. The main limitation of posters, however, is the fact that they can accommodate only a small amount of information and rely on their visual attractiveness to direct people to a more comprehensive source of information.
- Advertisements are another effective way of reaching large audiences, but in addition to the limitations with respect to the amount of information they can contain, advertisements are limited by their publication dates/air dates.
- Audio-visual libraries and patient testimonials should not be stand-alone materials, but could be used to support media outreach activities and the additional development of health communication programme materials.
- Online materials such as social media tools and websites have a practically unlimited reach and can contain large amounts of information. However, these are resource-intensive tools that require significant time and financial planning to ensure updates and maintenance.

Below are more details on each of these materials with specific considerations. These are not exhaustive. It is always important to try to understand the requirements, attitudes and preferences of the target audiences, as well as the communication needs and objectives in each country when developing communication materials.

4.1 Letters and mailings

Letters and mailings are traditional communication tools that have the potential to effectively reach entire groups of the population and make the message personal at the same time. The main drawback of mailings to the general population (and even small segments within) is that generic mailings might have a relatively low impact if they are not endorsed by an authoritative source. Therefore, it may be relevant to enter into partnerships with local authorities, schools/nurseries and/or GPs, as they lend credibility and support to the messages.

Here are some basic principles in developing effective mailings:

- Letters should be short (no more than three or four paragraphs, or one page).
- The language should be adapted to the target audience (plain language will work best for people without medical background; technical/scientific terms will make the tone more credible if medical professionals are the target group).
- Letters should clearly identify the problem and enlist the target audience's support in solving that problem.
- The text should clearly identify who organises the health communication programme and make the call for action very clear and specific.
- Letters should also include links, contacts, or references for further information.

4.2 Factsheets

Factsheets can be used to translate scientific or epidemiological data to short, simple sentences, and present data in a visually attractive way. Finding the right balance between the information provided and the level of detail is particularly important in a factsheet. Below are a few considerations for developing factsheets that public health professionals involved in health communication may consider:

- Factsheets should not be longer than one or two pages, as they should provide only essential information in support of the health communication programme messages.
- Any data or information that does not support the key message of the factsheets should be left out or used for a longer publication, such as a brochure.
- The factsheet should be self-contained and not require any supporting documents to provide basic information.

A factsheet should be very clear in terms of the actions requested from the audience, for example by:

- providing a contact number for more information;
- providing references to specific public health websites, or to websites where more information can be obtained; and
- encouraging people to talk to their GPs (or or other health professionals, depending on health system specifics) or directing them to vaccination centres.

The information in a factsheet should address criticism and/or myths about MMR vaccination (see Annex II for examples).

The factsheet should have a clean and uncluttered layout, with a font large enough for the average reader (12 pt or larger). The most important information or the call for action should be emphasised, for example by using a larger font size or different colours. Wherever possible, graphics should be used, such as photos, charts and figures.

Factsheets should be developed in a standard paper size, such as A4. Another popular format are A4 tri-fold leaflets (six panels/pages: single page size: 210 x 99mm).

Such standard formats also facilitate electronic dissemination via email or download. If one-colour printing (standard black ink on white paper) is considered, all visual materials should have sufficient contrast.

4.3 Information brochures

Unlike factsheets, brochures allow public health professionals involved in health communication to develop key messages and supportive facts. The main challenge in developing a brochure is how to make a high level of technical detail attractive and interesting to the reader.

Brochures can be developed in various formats, starting at four pages, but should not be longer than eight to ten pages. The structure of the brochure should allow for the key messages and call for action to be repeated in different forms throughout headings, text boxes, visuals, and Q&As. The repetition of short sentences emphasising key messages throughout the document should reinforce their strength and thus ensure that messages become memorable to the audience. The style of the text should be simple and conversational.

For example, a French health communication programme (see Annex II) featured a true/false review of the myths about MMR vaccination in one of their brochures. This approach could be used to address concerns among the target audience, particularly among people who may have been exposed to rumours about MMR or may be reluctant to get vaccinated because of controversies surrounding the vaccine.

Keeping a consistent style throughout the brochure is important, and this will be more difficult in a longer document. A brochure should have a limited number of sections. An introduction, sections about the diseases and the vaccine, and a Q&A section should be sufficient. Public health professionals involved in health communication should also consider formats such as a Q&A section at the end of each section or at the end of the brochure to reinforce their points. For example, a paragraph on the vaccination calendar could be followed by a question, such as ‘I am not sure if I am vaccinated: what should I do?’ Alternatively, a misperception could be addressed, such as ‘I already had measles when I was little; I don’t need the vaccine’, which can either be confirmed or proven wrong.

An attractive cover is also important. Only one key message should be featured on the front cover, while the back cover could accommodate a summary of the key points. The back cover should also contain a reference to the health communication programme website and a phone number for more information.

Brochures targeted at specific groups could also be considered: addressing children’s fear of needle shots are one such area (see examples from Germany and the Netherlands in Annex II). Formats such as colouring books, picture or story books can provide parents with age-appropriate materials for their children and help children overcome their fears.

4.4 Posters

Posters should contain powerful images, short texts, and are generally used as ‘teasers’ for people to seek more information. A poster relies on imagery to illustrate what the health communication programme is about. Therefore, the visual attractiveness of a poster is essential.

The text on a poster should be restricted to one key message or slogan. A call for action and a source for more information should be added. The poster should also display the logos of the programme’s supporters.

An additional consideration when developing a poster is to ensure its consistency with other materials, such as factsheets, brochures and online resources, as all these materials should be based on a common set of key messages and visuals.

4.5 Advertisements

Advertisements are designed to reach large groups or the entire population. Advertisements can be used in print media or in broadcast media and rely on a short, punchy message that attracts the attention of the audience and promotes a certain course of action. Print media advertisements are similar to posters, but can accommodate more information. They should contain information about who organises the health communication programme, what the target audience is encouraged to do, and where people can find more information (i.e. website, GP or other health professionals).

The main obstacle for advertising in the media is the relatively high cost, especially in mainstream media and particularly broadcast media. Depending on national regulations, advertisements on MMR vaccination could be considered public service announcements and may benefit from preferential rates. Public health professionals involved in communication activities should familiarise themselves with the national rules governing public service announcements in order to explore the possibility of repeated publication/broadcast of these advertisements.

4.6 Audio-visual libraries

Establishing a set of audio-visual materials can provide support to the media activities of a health communication programme. Materials could include:

- photos or photo stories;
- A- and B-rolls for news outlets (A-roll refers to raw, unedited footage without any text or commentary; the term B-roll describes additional footage which provides content such as statements or interviews by experts);
- recorded interviews or remarks by experts, policy-makers, politicians and supporters;
- podcasts; and
- testimonials.

These materials could also be provided to the media upon request. When giving interviews or making statements to the press, it is important to ensure that all statements are consistent with the key messages of the health communication programme and support its objectives.

Public health professionals involved in communication activities could also consider developing visual materials targeted at children, such as cartoon figures, illustrations or games (including online games). Audio-visual materials developed for the health communication programme can be made available via the internet, e.g. YouTube or similar portals at the national level. These materials should carry the key messages, be identified as part of a national health communication programme, and be linked to a related website.

4.7 Testimonials

Testimonials appeal to the public's emotions and should complement the use of scientific evidence, especially in those countries where public health professionals identify significant gaps between the vaccination numbers and the desired target rates. In the case of measles, mumps and rubella, testimonials could be acquired from patients, former patients and parents.

Testimonials could reflect the seriousness of the three diseases in children and adults, as well as emphasise the risks of not vaccinating against measles, mumps and rubella. In France, for example, parents of children who died of measles complications regularly promote MMR vaccination programmes by telling their story. However, the effectiveness of this approach needs further evidence because of the cultural and national diversities in Europe.

Patient testimonials can focus on the impact that measles, mumps and rubella can have on people's lives, for example the long-term effects of infection, the contagiousness, and the risks of co-infections such as meningitis. The goal of these interviews should be to support MMR vaccination by stressing the effects these diseases can have on people who are not vaccinated.

In terms of format, testimonials can be used in all types of communication materials: as quotes in brochures, as photos, audio materials, or interviews on a B-roll. Story pages could also be produced on dedicated websites.

Testimonials can include stories of children who suffered from one of the diseases or resulting complications, or of adults who were infected with one of the viruses. A story could follow the progress of a patient with measles, mumps or rubella, or compare possible post-vaccination side-effects (such as mild fever) of one child to the full-blown disease of an unvaccinated child. Testimonials of women whose pregnancies were affected by rubella could also be considered – if culturally appropriate.

Collecting testimonials is a sensitive issue, and it may not be easy to persuade people to step forward. It is also important to work in partnership with media experts and journalists to avoid ineffective use of these techniques.

4.8 Social media

Some evidence suggests that that approximately 60% of US adults and 45% of EU adults use the internet to obtain health information, one-third of whom use social media sources. By comparison, approximately 50% of adults in both regions obtain their health information from their doctors. Only one third of patients who look for information online actually verify it with their doctors (22).

Using online resources can prove to be a major advantage when conducting health communication programmes. The main characteristic of social media is interactivity, with internet users being at the same time recipients, spreaders, and critics of information.

The internet can be used as a cost-effective tool to promote positive attitudes towards vaccination. There are several possible approaches:

- Interactive websites dedicated to public health that provide information, feedback and expert opinions (see Section 4.9). Setting up such a platform is relatively inexpensive but requires a webmaster/moderator to oversee the website.
- A discussion group (or engaging in an existing one) allows the exchange of experiences and the answering of questions. For example, public health experts could take part in online debates or Q&A sessions on official public health websites, news sites, and/or NGO or charity websites. However, one has to ensure that the sources of all messages are easily identified. People speaking on behalf of the vaccination programme should have the knowledge and competence to answer all programme-related questions and provide statements and informed opinions.
- Contacting influential bloggers in order to secure support for the health communication programme. Note that this particular group shares many similarities with traditional media (message multipliers, their reach to wider audiences). Relevant blogs can be identified through online tools that monitor and search the blogosphere for keywords, for example technorati.com, a site which also provides information on how many other bloggers link to a particular blog.
- Creation and management of groups on social networks to raise the profile of the health communication programme. Social networks have a growing impact on the amount of information people receive and on the amount of health communication programmes they are exposed to. At the same time, the ability to promote facts and messages on social networks such as Facebook helps to gain a wider reach, while potentially combating the spread of negative messages on vaccination in general or on MMR vaccines in particular. Please note that there are already groups advocating against MMR vaccination on Facebook.
- Viral communication via the dissemination of video spots or applications (online and/or downloadable), which help generate awareness. Viral communication strategies are difficult to develop as they rely on originality, humour, punch lines, or visual impressiveness that makes the videos or applications instantly attractive to the viewer/user. One idea worth exploring may be to take 'viral successes' (for example a funny video) and use them to support the key message of the programme. While this is not viral communication per se, it makes use of a viral strategy and directs attention to the messages of the health communication programme.
- Creation or fact-checking of Wikipedia entries on MMR vaccination.

It is important that online communication and engagement in social media take into account the fact that it is difficult, and sometimes even impossible, to keep control of your message once it has been disseminated. Therefore online communication should be well thought out and adapted to the various target audiences. Messages should be short and concise, use facts and figures and refer to authoritative public health sources.

As long as a message addresses controversial issues transparently, it will be less likely to be contested online. However, one should be prepared to respond to a higher rate of challenges online compared with traditional media.

Other challenges in using social media include:

- Inequities in internet use and coverage. Internet access is not equally distributed across Europe. Significant language and computer literacy barriers exist.
- Difficulties in reaching some target audiences for MMR vaccination. The audience reached in some countries may be the more informed and health-aware part of society, which does not need to be convinced of the value of vaccination.
- Provision of credible information. The quality of information depends on the merits of the sources, and these sources should be clearly identified. Again, transparently addressing uninformed perceptions about MMR vaccination is essential.
- Difficulties sustaining quality of services. Engaging in social media requires consistency and sustainability to a much larger extent than in the era of Web 1.0.
- Lack of skills. Running e-health activities and related e-tools requires skills ranging from expertise in public health and health communication to web skills and IT proficiency, which may prove to be a challenge.

4.9 Websites and search engines

It is important that public health professionals involved in health communication/planning use the internet as a communication medium. Websites are an all-in-one communication tool that can reach global audiences almost instantly and supply them with evidence-based information regarding immunisation, epidemiological impact and the safety of vaccines. Authoritative sources of pro-vaccination information online could thus counter-balance the efforts of online vaccine sceptics.

Before developing a website, public health professionals involved in health communication should ensure that there is sufficient content available. Once launched, the website's time-sensitive information should be updated regularly. Creating a dedicated website is usually the first step of a series of online communication activities, and can be a complement of other prioritised core activities. If these core activities are so demanding that a website cannot be updated regularly, the production of a website might have to be reconsidered.

In developing website content, public health professionals need to ensure that the following usability requirements are met:

- Easy navigation: clear identification of website sections, 'home' button, search function.
- Availability of a site map, avoiding that the same type of information is split between different sections.
- Succinct information on the main pages; further detail can be given in sub-sections.
- Information tailored to different groups (media, parents, children, and health professionals).
- Website is visually attractive and consistent with the visual identity of the health communication programme.
- Downloadable materials (factsheets, brochures, photos, audio-visual materials).
- Contact details for the sponsor organisations (e.g. ministry of health, NGOs, patient organisations).

Additional features will improve the visibility of the health communication programme:

First, and most importantly, search engine optimisation (SEO) needs to be considered. SEO refers to procedures behind improving a website's visibility in search engine results pages and allows the website to come up among the top of the search results list after searching for 'MMR', 'vaccines', 'measles', 'mumps', 'rubella', 'childhood immunisation'. Some of the tools and strategies that can be used for this process include:

- links to and from the programme website;
- meta-tags that define the keywords for an internet search; and
- sharing/bookmarking tools that let the user link the page to social media platforms such as Facebook, Twitter, Digg and MySpace.

Google provides a free tool, PageRank™, which assigns, through a sophisticated link-analysis algorithm, a rank to a website. SEO requires a certain amount of technical input and experience in using these tools, as the optimisation should be combined with the design and construction of web pages.

Secondly, promoting the website in print and online communication will help increase its visibility and therefore increase the likelihood of it being used as a primary source of information on MMR vaccination.

Finally, websites could be developed for different target groups, particularly for young audiences. These websites should be very visual and could also contain games and animations which address fears about vaccination.

5 Mobilisation of allies

A successful health communication programme needs partners and supporters. Partners can help to spread the key messages and provide additional opportunities to focus on MMR vaccination.

Individual supporters can conduct parts of the health communication programme and/or provide the kind of high-level expertise that will support the credibility of the messages. Furthermore, encouraging proven and reputable partner organisations to help run or host events will emphasise the importance, relevance and credibility of a health communication programme in the eyes of the target audiences.

5.1 Practical programme support

Comprehensive health communication programmes with many scheduled events may have to recruit supporters who can help with the practical organisation of the activities, for example the distribution of leaflets. Supporters can, in principle, include individuals from the general public who want to help with the cause. Supporters for MMR childhood vaccinations can be recruited from healthcare NGOs that are active in child healthcare, parenting, or measles, mumps and rubella, as they will often already have a number of supporters via their members and networks. They may also be able to reach out and mobilise smaller sister organisations. In fact, working with NGOs can help to interact with the general public who may feel a closer connection to events supported by NGOs. Awareness-raising events will also help widen the base of supporters that can be mobilised.

5.2 Spokespeople

Key messages that come from a variety of trusted sources are likely to make a health communication programme more successful, particularly if the spokespeople are recruited from trusted stakeholder groups, including childcare workers and healthcare professionals such as paediatricians and paediatric nurses or general practitioners, and former patients. Options need to mirror the national reality as well as the context of health systems.

High-profile personalities are generally more effective in communicating messages, as they help emphasise the programme's credibility and importance by lending their prestige and expertise to the health communication activity. However, as noted in Section 3.7, they must be perceived as sources that can be trusted, have no direct financial stake in the issue, and are capable of navigating the often conflicting information that surrounds vaccination issues.

5.3 Partner organisations

Partner organisations can help raise the profile of a public health communication activity by endorsing it, by participating in scheduled activities, or by launching parallel activities (such as awareness-raising events) in line with the national health communication programme. By working with partners, the public health efforts to fight measles, mumps and rubella will be perceived as stronger than if they were only run by one actor, for example the national ministry of health.

6 Other communication activities

Health communication programmes need not be restricted to the distribution of materials and airing of radio and TV spots. There are a number of activities which could help support the public health objectives for MMR vaccinations. These activities should always complement the key messages and aims of the programme but need not necessarily be run by national authorities; as mentioned above, they can be organised by partners who support the aim of raising awareness on measles, mumps and rubella and ensuring the availability of the vaccine.

6.1 Awareness-raising events

Awareness-raising events can support public health objectives. These events could take the form of charity activities, information stands at exhibitions, and debates or conferences.

National authorities could also reach out to healthcare NGOs which work on measles, mumps and/or rubella, and/or child health. NGOs usually have sufficient grassroots experience, can provide support and recommendations on how to conduct awareness-raising events, and could team up with local health authorities. Public health planners should consult available research on health communication and communication science for effective ideas and good practice.

Awareness-raising events provide a platform to disseminate the key messages through leaflets, videos, spokespersons or other means, ideally helping the target audience to gain a better personal understanding of the issue, ask questions, or raise any concerns they may have.

6.2 Media briefings

Educating the wider public on measles, mumps and rubella and the MMR vaccine is an important step in reducing measles, mumps or rubella outbreaks. The media is an important vehicle for reaching the wider public and should be actively engaged on the issue.

To this end, briefings should be organised with the country's key media outlets (this can be the general media or specialised healthcare media) during which authorities should reinforce the key messages and highlight ongoing activities to support the health communication programme. This will provide another platform to disseminate the key messages and raise awareness of the issue as well as of the health communication programme.

When organising media briefings, a number of issues should be taken into consideration. Firstly, media briefings should always be conducted by a member of society who is well respected. Cultural and religious sensitivities should also be taken into account when providing media briefings.

Media outlets are looking for 'hooks' and newsworthiness in order to develop a 'story'. Authorities should consider the timing of their briefings: reporters must be able to receive information as it is announced – timing is critical to the press corps. When scheduling a briefing, authorities should tie it to key events such as the launch of a report or study which provides concrete data or trends, or an outbreak (or containment of an outbreak) of measles, mumps and rubella. The story need not necessarily be negative (i.e. a rise in the incidence of one of the diseases) but could be positive (i.e. 'MMR vaccination take-up rising'). Journalists should be made aware of the briefing at least one week ahead of time.

In case of an outbreak, media coverage can help raise awareness of the problem and provide instant information to the public. Reports on outbreaks must be carefully and responsibly handled so as not to cause panic. When briefing journalists, it is important that authorities use the key messages set out in the health communication programme. In addition, any guidelines for ethical reporting should be relayed to the journalist.

As long as the intended audiences (i.e. segments of the general public) are aware of available vaccinations, reports of outbreaks can support the MMR vaccination objectives and raise awareness of how 'close to home' the issue actually is (which could, in turn, result in increasing coverage rates).

6.3 Continuing medical education

Keeping the knowledge of general practitioners and paediatricians up-to-date is of utmost importance as they frequently have to answer the many questions that parents and others ask. Continuing medical education includes various ways of educating doctors and nurses about the disease areas and the need for vaccination. It is essential to reach out to healthcare professionals directly. Possible means are:

- Advisory board meetings of experts.
- Clinical meetings, for example large national meetings, or regional meetings that are open to various groups (such as meetings with nurses or GPs). The members of the advisory board could be helpful in chairing local meetings.
- Stand-alone symposia at medical meetings.
- Incentives for learning.

As part of their continuing medical education, doctors and nurses should receive further training and be provided with materials on the programme's key messages. This should help them to respond appropriately to communication issues concerning MMR vaccination.

7 Evaluation of communication activities

Health communication and its disciplines and approaches such as health literacy, social marketing, risk communication, health advocacy and health education depend increasingly on tools, benchmarks and indicators to assess effectiveness. Therefore, evaluation is a fundamental aspect of the planning process.

7.1 Objectives of the evaluation

The evaluation of a communication programme or set of actions should take into account several elements:

- The public health problem and related communication problems: for example, identifying why MMR vaccination rates are lower than the targeted 95%.
- The communication objectives: for example, to change attitudes, to raise levels of health literacy, or to bring about behavioural change.
- The obstacles to reaching the communication objectives.
- The ability to know the audience(s): Which groups have lower vaccination rates and why? What are their levels of literacy in regard to MMR vaccination? What attitudes and beliefs are held among different groups?
- The message delivery channels and tools: Which channels and materials have to be developed? Which media or online sources are best suited for reaching the target audience?

These questions should be answered before the health communication programme and its related activities are launched. This list is not exhaustive and should be adapted as the programme progresses. Given that communication activities are likely to be publicly funded, evaluation reports of health communication efforts should be made public and be accompanied by 'lessons learned' and recommendations for future improvements.

Surveys and field studies can be effective tools for measuring perceptions, attitudes, values, health literacy levels and behaviour at the beginning, during, and after the completion of a health communication programme. When designing such a study, indicators should be developed and built into the communication plan. Particular focus should be given to measurable activities.

7.2 Development of indicators

The overall public health goal of MMR vaccination programmes is to cover 95% of the population as the start of a process that will eventually lead to the elimination of these diseases. Health communication activities should support this objective and will inevitably be measured against this goal.

Indicators of communication effectiveness can include a number of outcome indicators which measure:

- change in attitude towards MMR vaccination and changes in related health literacy levels (which can be measured through coherently targeted surveys);
- increase in vaccination uptake within vaccination schedules (behavioural change);
- uptake of catch-up programmes (data should be available at national and/or European level);
- incidence of the diseases in children and/or adults (official data should be available); and
- impact of opposing arguments (can be measured using communication science research methodologies).

However, a number of more subtle indicators may also help measure the impact of the health communication activities. Additional indicators that can be considered include several process indicators such as:

- media coverage;
- blogs mentioning or tagging the communication activities;
- the number of internet searches using certain keywords;
- the number of unique visitors to the dedicated website;
- the number of downloads from the dedicated website;
- the number of participants in online groups or online discussions;
- the number of participants in related events;
- uptake of the key messages by independent sources;
- health communication programme recognition; and
- reputational impact on the organising authority.

Qualitative analysis may reveal:

- the number and type of media inquiries about the issues raised by the programme;
- positive/neutral/negative media coverage;
- the reasons for the target group's behavioural change; and

- direct feedback received from the public via contact details or internet channels (for example on the website, in online discussions, on social networks).

It is important to note that while deliverables and endpoints are essential components of effective health communication programmes, sustainable changes in attitudes and behaviours can only be achieved in the long run. It is therefore more important to maintain and build upon increases in vaccination rates than to push for high results in one year without taking steps to sustain them in the long run. Consequently, the development of indicators should take into account a long-term perspective, and regular evaluations and follow-ups on related health communication activities are recommended.

The cost-effectiveness of activities could also be evaluated, especially the costs of the different phases of a programme. Cost-effectiveness can also be assessed prior to the implementation of a new health communication programme. Several factors can help when assessing cost-effectiveness:

- The cost of each component of the health communication programme, relative to the size of the audience reached.
- The costs of the activities, in relation to the behavioural change (i.e. the difference in vaccination percentages)

Cost effectiveness can also be measured by comparing different health communication activities or the various components of a programme. The latter can be very useful for mid-term reviews, as resources can then be reallocated to those components of a health communication programme that have a better cost-effectiveness ratio.

8 Concluding remarks

The barriers to MMR vaccination include uninformed perceptions that could be effectively addressed by national health communication programmes, such as the safety and side-effects of the MMR vaccine and the underestimation of the risks associated with measles, mumps and rubella. Investigating people's concerns regarding immunisation and the hurdles that prevent them from deciding in favour of MMR vaccination is an important first step towards implementing successful immunisation programmes.

An effective health communication programme depends on the cooperation of different professionals, such as physicians, nurses, epidemiologists, IT specialists, and health communication experts. A focus on step-by-step approach: planning of objectives, identifying target audiences, selecting channels, developing messages and finding the right evaluation tools to suit the specific needs of your country will provide the best foundation for a successful health communication programme. Consistency in the messages is also important for effective results.

Primary target groups are likely to include parents of children and teenagers, as well as unvaccinated adults. Healthcare professionals could also be an important primary group. Target groups can be segmented for maximum efficiency, and the health communication programme could focus on hard-to-reach groups and individuals close to these population groups. Engagement with key health and NGO stakeholders, as well as the media, will maximise health communication programme outcomes.

Finally, assessing outcomes, such as vaccination coverage rates, through surveys and other methods for communication science, will provide valuable data for future health communication programmes. However, changing behaviour is a long-term process that requires a long-term effort and constant monitoring.

This document is an introduction to these health communication matters and aims at raising awareness amongst public health professionals of the diversity of aspects related to the development of health communication planning and related activities to increase MMR vaccination uptake.

For further support, please contact the ECDC Knowledge and Resource Centre on Health Communication at ccu-krc@ecdc.europa.eu.

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Annex I: Highlights of the review of general perceptions on vaccines: findings on MMR

Review conducted in 2008 by Burson-Marsteller, London, on behalf of the European Centre for Disease Prevention and Control

10 November 2009 (Main report: 21 November 2008)

Summary

This annex contains excerpts from a review of surveys on general perceptions on vaccines conducted in 2008. It includes the findings on issues related to MMR vaccination. This was not a systematic review; it was exploratory, and this annex merely wants to familiarise the reader with some of the existing studies. A short summary of some of the findings is included, but this does not aim at being comprehensive or at giving the full picture of each study's results.

The surveys included in this review were reported during a five year period (October 2003 to October 2008). The majority of surveys (seven out of eleven) included here were conducted in single European countries to shed some light on attitudes and perceptions towards vaccines.

The surveys assessed attitudes towards vaccination in general and the influences on attitudes and decision-making regarding vaccination. Overall, the findings indicate a varying degree of acceptance of vaccination in general, depending on the country in question. Some studies highlight parental concerns over vaccine safety and indicate a lack of understanding of the importance of vaccination. Several surveys indicate that healthcare providers (HCPs) are the most important and trusted source of vaccination advice, although the media is also a noted influence in one study.

One large study based in the UK (Leach et al. 2005) provided an in-depth analysis of the reasons behind some parents' refusal to have their children inoculated with the MMR vaccine. This study identified feelings that can be summarised as 'MMR vaccines may be safe, but not for my child', or a perception that the combined vaccine is 'too much in one go'. It also highlighted wider issues involving public mistrust of the portrayal of science by government organisations. Some surveys provided limited additional insights into perceptions of the MMR vaccine. These suggested that the public is very aware of the vaccine, with one study noting the participants' awareness of the negative press coverage regarding MMR vaccination in the UK.

The identified surveys provide a basis for future research. Gaps in knowledge arise from the fact that many of the surveys were conducted in individual countries and frequently do not specifically address opinions relating to MMR vaccines. Some studies suggest a public lack of awareness of the importance of vaccination in general. Moreover, parental concerns over vaccine safety seem to continue and should be monitored.

Objectives of the review

Annex I presents the MMR and Europe-related findings of the aforementioned review, which collated and reviewed current information on the general public's perceptions of vaccines within Europe, North and South America.

Methods

Searches for this review were designed to locate information regarding relevant surveys, using predefined search terms. The research was carried out in October 2008, and included surveys reported over the past five years.

The following summary gives the top-line methods and some of the findings of the surveys.

Overall attitudes and perceptions

Eleven surveys were found regarding attitudes to MMR and/or vaccination in general (but with relevance for MMR vaccine issues). These surveys were conducted across several countries (1), or nationally in the USA (3), the UK (2), Denmark (1), France (2), Germany (1), and Spain (1). They are listed in chronological order (most recent first).

Title of survey/study	Organi-sation/ Author	Location	Year	Sample size	Methodology	Summary of findings
Mandatory immunisation: The point of view of the French general population and practitioners[1]	Nicolay et al.	France	2008	4,112	Population-based telephone interviews	Results from the general population only. 56.5% think immunisation against diseases present in France should be mandatory, while 7.1% think it should not be. 35.3% would prefer to see selective immunisation focusing on specific diseases. Results also showed that a higher level of education is linked to a decrease in the adoption of mandatory vaccination, probably due to a greater sensitivity towards societal issues associated with mandatory immunisation.
Parents with doubts about vaccines: which vaccines and reasons why[2]	Gust et al.	USA	2008	3,924	Participants in national immunisation campaign, 2003-2004 (parents with doubts about vaccinations)/ interviews	Vaccine safety concern was a predictor of parents who were unsure, refused and delayed vaccination (28% of total). The largest proportion of unsure and vaccine-refusing parents cited varicella vaccine as the vaccine prompting their concern. Vaccine-delaying parents most often reported 'an unspecified vaccine' as the reason for their concern. Most parents in the delaying group did so for reasons related to a child's illness, unlike the unsure and vaccine-refusing parents. The largest proportion of parents who changed their minds about delaying or not getting a vaccination for their children listed 'information or assurances from healthcare provider' as the main reason.
Study about the knowledge and attitudes in vaccination of adults[3]	GesVa (A study group based on adult vaccination)	Spain	2008	1,000	Telephone interviews with adults	Seven out of ten argued that 'there is no need to be vaccinated'. 11% were vaccinated during their childhood. 32% of the population thought that a vaccine is a healthy preventive measure. In order to remember received vaccines, doses and dates, experts proposed a 'vaccination card'. For half of the population, this measure would be 'an efficient tool'.
A global look at public perceptions of health problems, priorities, and donors: The Kaiser/Pew Global Health Survey[4]	Kaiser/Pew	International	2007	500–3,142 per country	Population-based telephone or face-to-face interviews	With a few exceptions, increasing the number of immunised children ranks at the bottom half of health priorities in most low- and middle-income countries. On average, immunisation ranks 6th in Latin America, 7th in Asia, 8th in Central/Eastern Europe and the Middle East, and is tied for 8th in sub-Saharan Africa. Notably, immunisation is the top-ranked priority in China. It also ranks fourth (or tied for fourth) in Bolivia, Chile, Argentina, Bangladesh, Slovakia, and Lebanon.

Title of survey/study	Organi-sation/ Author	Location	Year	Sample size	Methodology	Summary of findings
An internet-based survey on parental attitudes towards immunisation[5]	Heininger et al.	Germany	2006	6,025	Surveys among lay internet vaccine forum users	95% regarded their paediatricians as the most important source of immunisation information, followed by leaflets (48%), health magazines (45%), and the internet (39%). Of the recommended childhood immunisations, those against pertussis, Hib and especially MMR were considered the least important by parents. 23% felt that immunisations are administered 'too early' in life, 21% thought they overload a child's immune system, and 12.2% blamed them for causing allergies or other side-effects.
Attitude of the general public and of GPs towards vaccination : results of the Nicolle survey[6]	Nicolay et al.	France	2005/ 2006	Not specified	Survey of a random sampling of adults or GPs	General public results: >90% were aware of the important role of vaccination in individual and collective prevention. More than 50% were in favour of compulsory vaccination, with significant differences depending on age, education level and geographical location. 20% of the interviewees indicate that if the obligation to take the diphtheria/tetanus/polio (DTP) combined vaccine was suspended and thus the choice of taking the vaccine was left to the parents, this could determine that they would not have their children immunised. The survey indicated that respondents are suspicious that vaccination recommendations are linked to the interests of industry. 31% and 38%, respectively support vaccination against hepatitis B at infancy and pre-adolescence.
The knowledge of hepatitis and attitudes towards vaccination[7]	The Danish Hepatitis Association	Denmark	2004	605	Population-based telephone interviews with adults	Knowledge of which diseases are included in the children's immunisation programme is low, while the knowledge of diseases included in the MMR vaccine is much higher. Hepatitis is considered the most severe disease covered by the Childhood Immunisation Programme. The knowledge of the way hepatitis is transmitted is mostly centred on blood, drug addicts, going to lavatories, etc. Respondents also mention that people in lower social classes are prone to infection. 75% of the population believe that it is a good idea to introduce vaccination against hepatitis B in the children's immunisation programme, if the vaccine does not pose an undue risk and is administered together with other vaccines.
Vaccination frequency, side-effects worry parents[8]	Blizzard et al.	USA	2004	778	Questionnaire among parents of children receiving vaccinations	Physicians reported that the following issues were most likely to be discussed during a visit: number of shots to be given (79%); short term side-effects (75%); pain or discomfort from vaccination (72%); general safety (63%); whether vaccines were needed (49%); and long-term side effects (46%). 21% of parents reported they had concerns about vaccines: child's pain or discomfort (46%); number of shots given (44%); short-term side effects (33%); general safety of vaccines (29%); vaccine additives (for example thimerosal) (20%); and risk of autism (3%).

Title of survey/study	Organi-sation/ Author	Location	Year	Sample size	Methodology	Summary of findings
Childhood vaccination: science and public engagement in international perspective[9,10]	Leach et al.	UK (and Gambia)	2004	1135: 452 replied	Questionnaire among parents of children aged 15 to 24 months (Brighton).	The study indicates anxiety about MMR vaccination among mothers from a wide variety of social backgrounds. Feelings could be summarised as 'MMR vaccination may be safe, but not for my child'. Personal experience influenced opinions. People assume personal responsibility and blame (for the consequences of both vaccination and non-vaccination). 86% of mothers who did not comply strongly agree that 'the MMR vaccination is too much in one go', compared with only 21% of those who complied. Similarly, more than half of the non-compliers agreed that there is a chance of serious side-effects from MMR vaccination if there is a weakness in that child, compared to 18% of those who complied. 46% of mothers who did not comply strongly agreed that it was better to get immunity naturally, compared with only 5% of those who complied. Interactions with 'alternative' therapists were also significant: 21.1% of noncompliant mothers had consulted a homeopath, in contrast with 9.4% of the compliers (P=0.001). The survey confirmed the mothers' strong sense of personal responsibility for vaccination decisions and their consequences. Wider issues of lacking trust in government and science are significant to the mothers' attitude towards MMR vaccination and vaccination practice. 74% of those who did not comply, and 31% of those who did, strongly agreed that 'you cannot trust the government when it comes to science'. An even higher proportion of mothers strongly expressed suspicion of the influence of pharmaceutical companies on the MMR issue (52% of those who complied, and 81% of those who did not).
Parental confidence in measles, mumps and rubella vaccine: evidence from vaccine coverage and attitudinal surveys[11]	Ramsay et al.	UK	2002	>1,000	Interviews with mothers of children <3 years of age	Vaccine coverage at two years of age fell 8.6% between April and June 1995 and between April and June 2001. In September 2001, despite adverse publicity, 67% of mothers reported that the MMR vaccine was safe or carried only a slight risk. 92% of mothers agreed with the statement 'If I had another child in the future I would have him/her fully immunised against all childhood diseases'.
Attitudes regarding vaccinations of STDs and other diseases[12]	Lewis et al.	USA	2000	605	Questionnaire among undergraduates (psychology) (n=518) or participants in genital herpes vaccine trial (n= 87)	In general, both groups supported vaccination for most diseases. However, the vaccine trial participants were more likely to accept vaccines for measles and the college students were more likely to accept vaccines for chlamydia and genital warts.

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Annex II: Some examples of communication on measles, mumps and rubella in selected countries

In order to support the recommendations on effective communication materials, a review of health communication activities and materials produced in Germany, France, the Netherlands and the United Kingdom between 2005 and 2008 was conducted.

The four countries mentioned above implemented MMR vaccination campaigns targeted at the general population. Frequently, the campaigns focused on parents, children, carer-givers of young children (such as nursery workers and teachers), students and/or pregnant women, and, to a lesser extent, health professionals.

This annex mentions only some of the activities that were conducted. This does not pretend to be a comprehensive review. The presentation of examples aims at providing ideas but does not endorse a certain method for the development of materials. Please contact the ECDC Knowledge and Resource Centre on Health Communication for further support and queries.

Germany

The German paediatricians' association (Berufsverband der Kinder- und Jugendärzte) conducted a public information campaign between November 2008 and April 2009. The campaign was endorsed by the German federal health ministry and aimed to increase the uptake of routine vaccinations to the recommended level of 95%. The health communication activities were not focused on MMR alone, but on all childhood vaccinations.

All activities used the same slogan ('My nursery stays healthy') and focused on two main targets:

- Primary carer-givers for nursery-age children (parents and nursery workers), who were encouraged to follow the recommended vaccination schedules; and
- young children of school age, who were given targeted materials aimed at alleviating their fear of vaccination.

To promote the communication objectives and raise awareness of the activities, press conferences and information events were organised at the 'Bundesland' level. Federal Health Minister Ulla Schmidt and 250 nursery school children in Berlin were part of the launch ceremony. Materials were distributed to 35 000 nurseries across Germany, followed by a poster campaign.

France

In France, the national health insurance (*Assurance Maladie*), together with the National Institute for Prevention and Health Education (INPES) have organised health communication programmes targeted at improving MMR vaccination coverage rates since 2006–07.

Assurance Maladie organised a public health information campaign in 2005, when the decision was taken to make the MMR vaccine available free of charge to children up to age 13. The key message of the health communication programme was 'Measles, mumps, rubella – do not wait for it to become worse, have your child vaccinated from the age of one'. The health communication programme focused on parents and emphasised the role of the second (booster) vaccine dose.

A parliamentary report on 'Results and challenges of vaccination policies in France' published in 2007 concluded that MMR vaccination was not sufficiently known, understood or used. Also, the report noted, regional disparities in vaccine coverage raised the question whether a national public health communication plan was necessary and if a stronger involvement of regional authorities in targeted communication efforts was needed.

More recent health communication activities developed by INPES focused on supporting the European Immunisation Week and were implemented mostly at the regional level, with a core set of national materials. INPES provided information, guidance and materials to health professionals, who were then asked to contribute to the awareness-raising objectives by handing out information leaflets to parents, along with reminders to have their children vaccinated.

Netherlands

The review did not localise in the Netherlands disease-specific information programmes on vaccines. The country appears to take a holistic approach to all vaccines and directs specific health communication programmes at adults and children. The national vaccination programme provides information about all vaccines and is supported by the National Institute for Public Health and the Environment (RIVM), in cooperation with the National Association of Vaccination Administration (LVE) and the Netherlands Vaccines Institute (NVI). Materials include factsheets on measles, mumps and rubella, as well as online information on the website of the national vaccination programme and on a dedicated website for children (http://www.kinderprik.nl).

Some more specific vaccination information activities were organised in some regions such as Groningen, where children in specific age groups were invited to have their second dose of MMR vaccine. In addition, information materials about vaccination were provided to both the children and their parents.

In the Netherlands, the vaccination coverage rates have been consistently high and close to the WHO target of 95%, therefore the challenge is to maintain this level. From a health communication perspective, the consistently high vaccination coverage suggests that existing programmes are effective.

United Kingdom

The UK has felt the damaging public opinion effects of a 1998 study published in The Lancet claiming that there were serious side-effects of MMR vaccines (including bowel disease and autism). This event, in combination with other mass-media-related phenomena, resulted in some of the lowest MMR vaccination rates in Europe as many parents refused to have their children vaccinated. As a result, the communication efforts of the National Health System (NHS) focused on dispelling myths about MMR vaccines and promoting the vast amounts of research which disproves the misconceptions about MMR vaccination.

Because of this specific health communication challenge, NHS health communication activities have therefore focused on presenting hard-hitting facts on the three diseases – measles, mumps and rubella – as well as on MMR vaccination to parents with young children old enough for their first vaccination and the subsequent booster dose. The NHS also directs a significant amount of health communication activities to the catch-up programme for children up to age 18. All communication materials in the UK are based on scientific facts and thoroughly referenced.