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Renewed commitment to measles and rubella elimination and prevention of congenital rubella syndrome in the WHO European Region by 2015

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Immunization is one of the most cost-effective public health interventions available, and immunization programmes in the WHO European Region have been a strong component of primary health care. The European Region was certified as poliomyelitis-free in 2002. In 2005, based on this experience and strong disease control programmes, the WHO Regional Committee for Europe endorsed a resolution on eliminating measles and rubella and preventing congenital rubella infection by 2010.

While measles and rubella transmission have been interrupted in a number of countries through strong, routine two-dose combined measles and rubella vaccine programmes for children, the regional goals of eliminating measles and rubella by 2010 will not be met, according to the epidemiological evidence to date. Elimination means the interruption of endemic disease through high levels of population immunity achieved by sustainable, high-quality immunization services. Therefore, Member States are requested to use current epidemiological evidence to define and accelerate future actions, with coordination and guidance by WHO, in partnership with others, in order to meet the goals in the near future.

This paper provides background information on the commitments and on the progress made towards eliminating measles and rubella, and preventing congenital rubella syndrome (CRS) in the Region. It provides an update on achievements and challenges and describes accelerated actions to be implemented to achieve the goals in the near future.

A draft resolution is attached for the Regional Committee's consideration, in which it would call on Member States to renew their commitment to accelerate actions to eliminate measles and rubella and prevent CRS, and it would revise the target date for both elimination goals from 2010 to 2015.

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Executive summary

In 2005, the Regional Committee endorsed resolution EUR/RC55/R7 on strengthening national immunization systems through measles and rubella elimination and prevention of congenital rubella infection in WHO European Region, with a target date of 2010 *(1)*. While measles and rubella transmission have been interrupted in a number of countries through strong, routine two-dose combined measles and rubella vaccine programmes for children, the regional goals of eliminating measles and rubella by 2010 will not be met, according to the evidence to date.

The success of immunization programmes has led to achievements in disease control, such as poliomyelitis-free status and drastic declines in vaccine-preventable diseases, especially measles and rubella; however, challenges to reaching the elimination goals still exist. Many national immunization programmes are threatened by a combination of political and public complacency regarding the value of immunization. In the absence of disease, immunization can lose priority. This has been observed in the resurgence of measles cases in western and central European countries, leading to unnecessary illness and, in some instances, death. The majority of outbreaks reported are in unimmunized populations. These cases have both public health and economic impacts on individual countries. In addition, exportation of measles virus, notably to the WHO Region of the Americas, has been demonstrated.

Member States are requested to ensure political commitment to the elimination goals. They should adopt a multisectoral approach to ensure that the required resources are available, and use European Immunization Week (EIW) as an advocacy tool to strengthen efforts to achieve the goals. Based on the findings from a comprehensive review of the progress made towards elimination in each Member State, any barriers identified should be addressed and components of the elimination strategy strengthened. There should be an emphasis on immunizing susceptible populations, especially high-risk and vulnerable populations, as they may have limited access to primary health care services, and on addressing the concerns of parents influenced by inaccurate allegations related to vaccines as a result of anti-vaccination movements or media reporting. Furthermore, surveillance activities must be sustained to monitor and document the progress achieved through elimination and eradication initiatives.

The WHO Regional Office for Europe, in collaboration with its partners, will advocate for political commitment and will provide strategic vision and technical guidance to Member States. Special emphasis will be placed on those Member States facing challenges in achieving the elimination goals. Both Member States and the Regional Office will need to establish verification committees to document progress towards elimination.

Political commitment is needed at regional, national and subnational levels to influence public attitudes to vaccination and to achieve the measles and rubella elimination goals. The regional strategy and tools for measles and rubella elimination are effective if implemented fully and appropriately. The WHO Regional Office for Europe gives the highest priority to achieving the regional elimination goals and sustaining the Region's poliomyelitis-free status, and will strengthen its partnership with Member States and their institutions, as well as with other partners, particularly the European Commission and the European Centre for Disease Prevention and Control (ECDC), the United Nations Children's Fund (UNICEF), WHO collaborating centres and the United States Centers for Disease Control and Prevention (CDC), to support Member States in achieving these goals.

If high immunization coverage and disease surveillance are maintained, actions accelerated and conditions met, the Region will be able to eliminate measles and rubella by 2015. Therefore, the WHO Regional Office for Europe requests the Regional Committee to adopt a resolution

moving the target date for both elimination goals from 2010 to 2015, and urging Member States to renew their commitment and to ensure that the required resources are made available to accelerate actions to eliminate measles and rubella and prevent congenital rubella syndrome (CRS), while continuing to implement current strategies to maintain the Region's poliomyelitis-free status.

Background on immunization and previous resolutions

1. Immunization is one of the most cost-effective public health interventions available, and immunization programmes have been a key component of public health services and primary health care in the WHO European Region for decades. World Health Assembly resolution WHA53.12 highlighted immunization as a major factor in promoting child health. Resolution WHA56.21 urged Member States to strive for full coverage of their maternal, neonatal, child and adolescent populations with interventions known to be effective, advocating the use of a public health approach, such as immunization, to reduce the incidence of common diseases. Resolution WHA56.20 urged Member States to implement the WHO-UNICEF strategic plan for measles mortality reduction 2001–2005 in countries with high measles mortality within existing national immunization programmes. Resolution WHA58.15 welcomed the Global Immunization Vision and Strategy as the framework for strengthening national immunization programmes between 2006 and 2015, with the goals of achieving greater coverage and equity in access to immunization, improving access to existing and future vaccines, and extending the benefits of vaccination linked with other health interventions to age groups beyond infancy. It also called on Member States to ensure that immunization remains a priority on the national health agenda and is supported by systematic planning, implementation, monitoring and evaluation processes, and long-term financial commitment.

2. At its 125th session in May 2009, the WHO Executive Board requested the Director-General to report on the feasibility of global measles eradication. One WHO region (the Region of the Americas) has maintained measles elimination for the past seven years and four (the European, Western Pacific, Eastern Mediterranean and African) of the remaining five WHO regions have set an elimination goal to be achieved by 2020 or earlier. The Secretariat reported back to the Executive Board and provided an update on the cost and the impact on health systems, as well as advised on a target date for global eradication of measles after broader technical consultation.

3. By resolution EUR/RC48/R5, the WHO Regional Committee for Europe approved the Health for All policy framework for the European Region for the twenty-first century, which identified targets for nine vaccine-preventable diseases, including the elimination of measles (interruption of indigenous measles transmission) by 2007 and a reduction in the incidence of CRS to below 0.01 per 1000 live births by 2010. In 2005, the Regional Committee endorsed resolution EUR/RC55/R7 on strengthening national immunization systems through measles and rubella[1] elimination and prevention of congenital rubella infection in the WHO European Region, with a target date of 2010. In 2008, in its follow-up report to the Regional Committee on child and adolescent health strategies (including immunization), the Regional Office reported on progress achieved towards measles and rubella elimination in the Region.

4. The strategic plan *(2)* to reach these targets relies on:

- achieving and sustaining very high coverage (≥ 95%) with two doses of measles vaccine and at least one dose of rubella vaccine through high-quality routine immunization services;
- providing a second opportunity for measles immunization through one-time catch-up campaigns, referred to as supplemental immunization activities (SIAs)[2] in populations susceptible to measles;
- using the opportunity provided by measles SIAs to target populations susceptible to rubella with combined measles-rubella vaccine;

[1] Rubella is a recognized and preventable cause of serious birth defects.

[2] The primary purpose of SIAs is to reach people who have been missed by routine services. The goal of SIAs is to eliminate susceptibility to measles in the general population.

- strengthening measles, rubella and CRS surveillance through rigorous case investigation and laboratory confirmation of all suspected cases; and
- improving the availability of high-quality, valued information for health professionals and the public on the benefits of immunizing against measles and rubella.

5. The WHO Regional Office for Europe provides systematic and comprehensive support to help countries maximize health gains from the prevention of vaccine-preventable diseases by strengthening their immunization systems, towards the achievement of Millennium Development Goal (MDG) 4 on child health. The MDG 4 target is to reduce the under-five mortality rate by two-thirds between 1990 and 2015. Reducing measles mortality will facilitate the achievement of the MDG targets, and the proportion of one-year-old children immunized against measles is one indicator for monitoring progress towards the goal.

Progress to date: an overview of the current status of elimination and achievements in the European Region

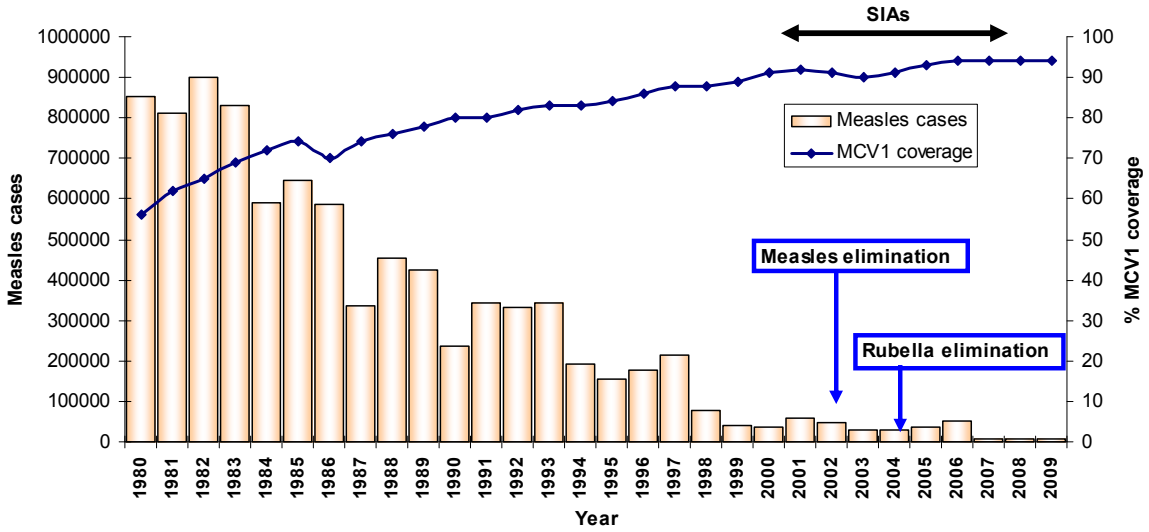
6. The WHO European Region has seen a dramatic reduction in reported measles cases, from 200 000 in 1994 to 30 000 in 2003 *(3)*, and then to 8883 cases in 2008 *(4)*. Since the goal of eliminating measles was adopted in 1998, measles incidence in the Region has declined from 110 cases per million population to historically low levels of <10 cases per million in 2007–2008. In 2008, 29 Member States had measles incidence of <1 case per million. There has also been a significant decrease in rubella cases. In 2009, there were 856 confirmed rubella cases reported by 19 Member States. However, it is believed that rubella is underreported in the Region.

7. The observed dramatic decrease in measles and rubella cases is the result of high immunization coverage with two doses of a measles-containing vaccine (MCV), primarily with rubella vaccine, and implementation of measles and rubella SIAs targeting the remaining susceptible age cohorts (see Fig. 1). The estimated regional coverage of MCV1 increased from 83% in 1990 to 94% in 2008. MCV2 coverage ranged from 62% to 99% across the Region in 2008. In 2008, 30 of the Region's 53 Member States estimated national average measles vaccine coverage of 95% or above. In addition to reaching individuals through routine immunization, another 54 million susceptible people were reached through SIAs during 2000–2008.

8. However, nine of the ten countries with the lowest average measles immunization coverage (between 80% and 90%) in the Region from 2000 to 2007 are in the European Union. Moreover, five countries with traditionally high coverage have reported decreased coverage rates, of below 95%, since 2000.[3]

[3] Data provided by Member States through the WHO/UNICEF Joint Reporting Form on Immunization for the period January-December 2008.

Fig. 1: Reported measles cases and measles immunization coverage (MCV1) rates in the WHO European Region, 1980–2008.



Source: WHO, 2010 *(5)*

9. In the past few years, there has been a resurgence of measles cases in western and central European countries because of persistent suboptimal vaccination coverage in pockets of the population. In 2008, 93% of measles cases (n=7371) were reported from the following affected countries: Austria, France, Germany, Israel, Italy, Spain, Switzerland and the United Kingdom. The majority of outbreaks were in unimmunized populations (such as hard-to-reach, vulnerable populations, or in groups with religious or philosophical beliefs against immunization). These cases have both public health and economic impacts on individual countries. In addition, exportation of measles virus to other regions has been demonstrated. In 2008–2009, the Pan American Health Organization (PAHO) reported that 64% of the outbreaks in the Region of the Americas came from the European Region and that the estimated cost of one importation into the Americas ranged from US$ 8 600 to US$ 20 300.

10. Surveillance for measles and rubella has been strengthened by improving case investigation procedures, expanding case-based reporting and increasing laboratory testing. The establishment and maintenance of the measles and rubella regional reference laboratory network, based on the poliomyelitis laboratory network, has provided timely data to confirm cases and monitor circulating measles virus genotypes. To date, 47 Member States in the European Region are reporting case-based data. Rubella surveillance in the Region remains variable, with some Member States that have only recently introduced rubella vaccine unable to provide laboratory confirmation of most cases until the incidence decreases. Four Member States do not currently have national surveillance systems to monitor disease incidence. Comprehensive surveillance for CRS is also not standardized across the Region; seven Member States, representing 25% of the Region's population, do not have national CRS surveillance.

11. Measles and rubella elimination is defined as the interruption of indigenous transmission of measles and rubella viruses. Importation of viruses may still occur, but circulation of the viruses after importation ends naturally with limited disease transmission in a country. The progress towards elimination in the European Region has been substantial and the Region now is close to elimination. It is therefore critical to have high-quality case-based surveillance as a foundation to detect all cases, with active measures to collect specimens and conduct contact tracing. At this stage, greater efforts are needed for fewer cases. After conducting a critical

analysis to assess the progress made by each Member State, it is apparent that the European Region's target of measles elimination by 2010 is not likely to be achieved on time by 30 of the 53 Member States (57%), representing over two-thirds of the Region's population. The target of rubella elimination by 2010 is further behind schedule because rubella vaccine has only recently been introduced in many Member States, and there is a need to strengthen monitoring systems to detect and investigate cases, including those of CRS.

A review and update of the achievements and challenges related to meeting the goals by the end of 2010

12. The certification of the Region as poliomyelitis-free in 2002 was the result of concerted activities by all Member States to ensure that all children are protected through vaccination, and that high-quality surveillance for poliovirus is maintained until global poliomyelitis eradication is declared. The strategies for measles and rubella elimination have been built on lessons learned and experiences gained from poliomyelitis eradication. Building a regional laboratory network for measles and rubella surveillance was a key achievement in the Region. The existing network for poliomyelitis surveillance formed a framework for the development of measles and rubella case-based surveillance, including 47 national measles and rubella laboratories and four regional reference laboratories. Ongoing support from Member States for surveillance activities is essential for the rapid detection and confirmation of measles and rubella cases.

13. WHO and its partners worked together with Member States, primarily in the eastern part of the Region, to plan and implement successful SIAs. SIAs were conducted in over 17 countries and reached about 54 million people (aged from 1 to 49 years) with measles and rubella vaccines. These SIAs achieved high coverage rates, usually over 95%, ensured equity in immunization by bringing the services to the communities, and led to a rapid decline in disease transmission.

14. To strengthen political commitment and mobilize communities, European Immunization Week (EIW) was established on an annual basis. The WHO Regional Office for Europe facilitates Member States' efforts to advocate and strengthen awareness among political leaders, health care professionals and the general population about measles and rubella elimination through the protection of children by immunization. Since its inception in 2005, EIW has grown, with 47 countries taking part in 2010. This year WHO organized a video conference with selected Member States (with a live webcast to all countries) to discuss progress towards measles and rubella elimination.

15. Efforts to provide data for decision-making have led to improved access to existing and new vaccines such as *haemophilus influenzae* type b (Hib) vaccine. By the end of 2009, 47 Member States had introduced Hib vaccine into their routine immunization schedules and all Member States had introduced hepatitis B vaccine. Burden-of-disease and costing data are being used by national immunization technical advisory groups to develop comprehensive strategies for the introduction of pneumococcal and rotavirus vaccines. While these efforts support the introduction of new vaccines, they also greatly support the use of measles and rubella vaccine.

16. Although there have been many achievements, challenges in reaching the elimination goals still exist. Political commitment is needed at regional, national and subnational levels to influence public attitudes to vaccination and the measles and rubella elimination goals. Together with mobilization of the required resources, these are critical prerequisites to achieving and sustaining the current gains and accelerating efforts to reach the goals.

17. Many national immunization programmes are challenged by a combination of political and public complacency regarding the value of immunization. These challenges exist both in

countries undergoing health care reform and in those with stable and well-funded primary health care systems. In the absence of disease, immunization can lose priority. Over the past few years, there has been a slow decline in immunization coverage rates, especially at subnational level and among high-risk and vulnerable populations, leading to pockets of unimmunized or underimmunized[4] individuals, which can support disease transmission and cause outbreaks. This has been observed in many Member States in the western part of the Region, where measles outbreaks continue to occur, causing preventable illnesses and death.

18. These pockets exist for multiple reasons. Lack of access to health services in particular geographical or socioeconomic situations is a primary reason, and is compounded by the fact that there are few initiatives to reach these populations – a result of a lack of capacity, in many countries, to develop and refine communications to meet their needs. The focus of the public's attention has also moved from the risk, implications and severity of the disease to the safety of the vaccines. This is a result of misinformation about immunizations, cultural and religious beliefs, or the influence of anti-vaccination groups. Many Member States have developed initiatives to address barriers to immunization, including outreach services for hard-to-reach populations, estimating the size of these populations, and introducing mechanisms to trace children. Other countries have developed communication strategies to address vaccine safety concerns.

19. While high-quality surveillance systems for measles and rubella are functional in most Member States reporting to WHO on a monthly basis, there are still some that do not have a reporting mechanism for rubella. Furthermore, the performance of the systems and the quality of the data need to be strengthened. There are three Member States not reporting measles cases and 31 Member States not reporting rubella cases. The quality of poliomyelitis surveillance in the Region has also been declining with time, especially in the western part of the Region, reportedly due to lack of financial and human resources, and fatigue. Surveillance activities must be sustained through elimination and eradication initiatives.

The way forward: renewed commitment

20. The success of immunization programmes has led to disease control achievements, such as poliomyelitis-free status and drastic declines in vaccine-preventable diseases, especially measles and rubella. The regional strategy and tools for measles and rubella elimination are effective if implemented fully and appropriately, as is evidenced by the great progress made towards measles and rubella elimination in the Region, with some Member States interrupting endemic transmission of one or both diseases. The elimination goals targeted for 2010 are attainable; however, it is believed that the goals will not be met in the European Region by the end of 2010. Member States must ensure that the gains made to date are sustained and not jeopardized by the challenges described.

21. It is strongly believed that the goals can be achieved in the very near future, based on the success to date and the existing surveillance system infrastructure, and with the addition of proposed accelerated actions, including acquiring further data for decision-making. To reach the goals, renewed high-level political and societal commitment and mobilization of the required resources will be needed. For advocacy purposes, it is strongly encouraged that the issues be up for discussion at regional level and with Member States' governments and parliaments. Greater emphasis will be placed on leveraging global and regional resources and opportunities through existing partnerships with national institutes, the European Commission, European Union institutions such as ECDC, UNICEF, WHO collaborating centres, CDC, and other sources of global and regional expertise.

[4] Underimmunized is defined as having received less than two doses of a measles-containing vaccine.

22. Member States are requested to renew their commitment to the elimination goals. They should implement a multisectoral approach to ensure that the required resources are available, and use EIW as an advocacy tool to strengthen efforts to achieve the goals.

23. While many of the needed actions are long-term initiatives, measles and rubella elimination can be the impetus for implementing system changes. Demand should be created for safe, high-quality vaccines, to which all communities should have equitable access. A review should be made of the health workforce and its capacity for immunization. Through a review of the progress towards elimination in each Member State, barriers should be identified and specific components of the elimination strategy should be strengthened to overcome them. There should be an emphasis on immunizing susceptible populations, especially the high-risk and vulnerable populations that still lack adequate immunization coverage because of limited access to primary health care services for geographical, cultural, ethnic or socioeconomic reasons.

24. There is a need to restore the public's trust in immunization. Emphasis should be placed on addressing messages to anti-vaccination groups and populations that are hesitant of vaccines. Different communication initiatives must be developed and targeted towards the specific concerns, using an evidence-based approach. Strategies for creating demand for immunization among the public need to be developed and implemented. Member States need to address how to reach the unimmunized and underimmunized people using a multisectoral approach, including the use of civil society organizations to reach communities, where appropriate. To reduce measles susceptibility among defined age cohorts, additional immunization efforts will need to be considered by some Member States. The WHO Regional Office for Europe is committed to working with partners in the European Region to advocate for and support Member States in their efforts.

25. The Regional Office, in collaboration with its partners, will advocate political commitment and provide strategic vision and technical guidance to Member States. Special emphasis will be placed on those Member States facing challenges to achieving the elimination goals.

26. The Regional Office will establish a regional verification committee to document progress towards elimination. Member States will be asked to establish national verification committees to document their progress towards elimination.

27. Recognizing that: (a) reducing measles mortality will facilitate the achievement of the MDG targets globally; (b) rubella is an acknowledged and preventable cause of serious birth defects; and (c) Member States endorsed resolution EUR/RC55/R7 on strengthening national immunization systems through measles and rubella elimination and prevention of CRI in WHO's European Region, the WHO Regional Office for Europe gives the highest priority to achieving the regional elimination goals and sustaining the Region's poliomyelitis-free status.

28. The WHO Regional Office for Europe considers that if accelerated actions are conducted[5] and commitment is received, the Region will be able to eliminate measles and rubella by 2015.

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