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MEASLES ELIMINATION BY 2020: A STRATEGY FOR THE AFRICAN REGION

Report of the Secretariat

Executive Summary

1. The African Region adopted measles mortality reduction goals starting in 2001 and has been implementing the WHO-UNICEF recommended strategies. Successful implementation of these strategies resulted in a 92% reduction in the estimated number of measles deaths in the Region between 2000 and 2008.

2. Despite the significant reduction in measles mortality, the reality is that measles vaccination coverage, the quality of measles supplementary immunization activities and the quality of disease surveillance in the African Region have not yet reached the levels required to avert resurgence of measles. In 2010, 28 countries in the African Region experienced measles outbreaks.

3. Measles elimination is biologically and programmatically feasible, building upon the experiences of measles mortality reduction in the past decade. The elimination efforts should be entirely led by countries, and implemented to strengthen immunization systems and promote equity of service delivery.

4. The priority interventions should include improving immunization coverage through systematically implementing a combination of approaches, providing a second opportunity for measles vaccination, conducting sensitive disease surveillance, building the capacity of health workers, improving the quality of immunization monitoring data, conducting sustained advocacy and mobilizing local and international partners, and scaling up operational research.

5. This document proposes a strategy for the elimination of measles by 2020 in the African Region. The Regional Committee examined and adopted this strategy and the related resolution.

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INTRODUCTION

1. Measles elimination is defined as the absence of endemic measles cases for a period of twelve months or more, in the presence of adequate surveillance. Global measles eradication is the sum effect of measles elimination in all WHO regions.

2. The Millennium Development Goal 4 (MDG 4)[1] aims to reduce under-five mortality by two-thirds by 2015 compared with the 1990 level. Vaccination against measles will reduce measles mortality and contribute to the attainment of MDG4.

3. The African Region has adopted measles mortality reduction goals and has been implementing the WHO-UNICEF recommended strategies since 2001.[2,3] These strategies include increasing the coverage of measles-containing vaccines (MCV) in routine immunization; providing a second opportunity for measles immunization through Supplementary Immunization Activities (SIAs); establishing case-based surveillance including laboratory confirmation; and improving case management.

4. The strategies for measles mortality reduction have been implemented through collaboration between national governments and partners, and in a manner that promotes integrated delivery of child survival interventions. The successful implementation of the measles mortality reduction strategies resulted in 92% reduction in the estimated number of measles deaths in the African Region between 2000 and 2008.[4]

5. The African Regional Measles Technical Advisory Group (TAG) proposed a pre-elimination goal of reducing measles mortality by 98% by 2012 compared with 2000 estimates, reducing measles incidence to less than five cases per one million inhabitants annually in all countries, and attaining the targets for the main surveillance performance indicators. The two main measles surveillance performance indicators are: (i) non-measles febrile rash illness rate (target of at least 2 per 100 000 population); and (ii) the proportion of districts that have investigated at least one suspected case of measles with blood specimen per year (target of 80% or more per annum).

6. In 2010, the Sixtieth session of the WHO Regional Committee for Africa adopted Resolution AFR/RC60/R4: Current status of routine immunization and polio eradication in the African Region: challenges and recommendations. The resolution expressed concern about the fragility of the gains in measles mortality reduction and requested Member States to increase immunization financing, strengthen immunization research and improve the quality of implementation of strategies for the control of vaccine-preventable diseases.[5]

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1 http://www.who.int/topics/millennium_development_goals/child_mortality/en/ last accessed on 1 March 2011.

2 WHO, Resolution AFR/RC52/R2: Regional strategy for immunization during the period 2003–2005. In: *Fifty-second session of the WHO Regional Committee for Africa, Harare, Zimbabwe, 8–12 October 2002, Final Report,* Brazzaville, World Health Organization, Regional Office for Africa, 2002 (AFR/RC52/19), pp. 8–9.

3 WHO, Resolution AFR/RC56/R1: The regional strategic plan for the Expanded Programme on Immunization 2006–2009. In: *Fifty-sixth session of the WHO Regional Committee for Africa, Addis Ababa, Ethiopia, 28 August–1 September 2006, Final Report,* Brazzaville, World Health Organization, Regional Office for Africa, 2006 (AFR/RC56/24), pp. 7–10.

4 Global reductions in measles mortality 2000–2008 and the risk of measles resurgence WER. No. 49, 4 December 2009, p 509 – 516.

5 WHO, Resolution AFR/RC60/R4: Current status of routine immunization and polio eradication in the African Region: Challenges and recommendations. In: *Sixtieth session of the WHO Regional Committee for Africa, Malabo, Equatorial Guinea, 30 August–3 September 2010, Final Report,* Brazzaville, World Health Organization, Regional Office for Africa, 2010 (AFR/RC60/21), pp. 15–17.

7. This document proposes a strategy for the elimination of measles in the African Region by 2020.

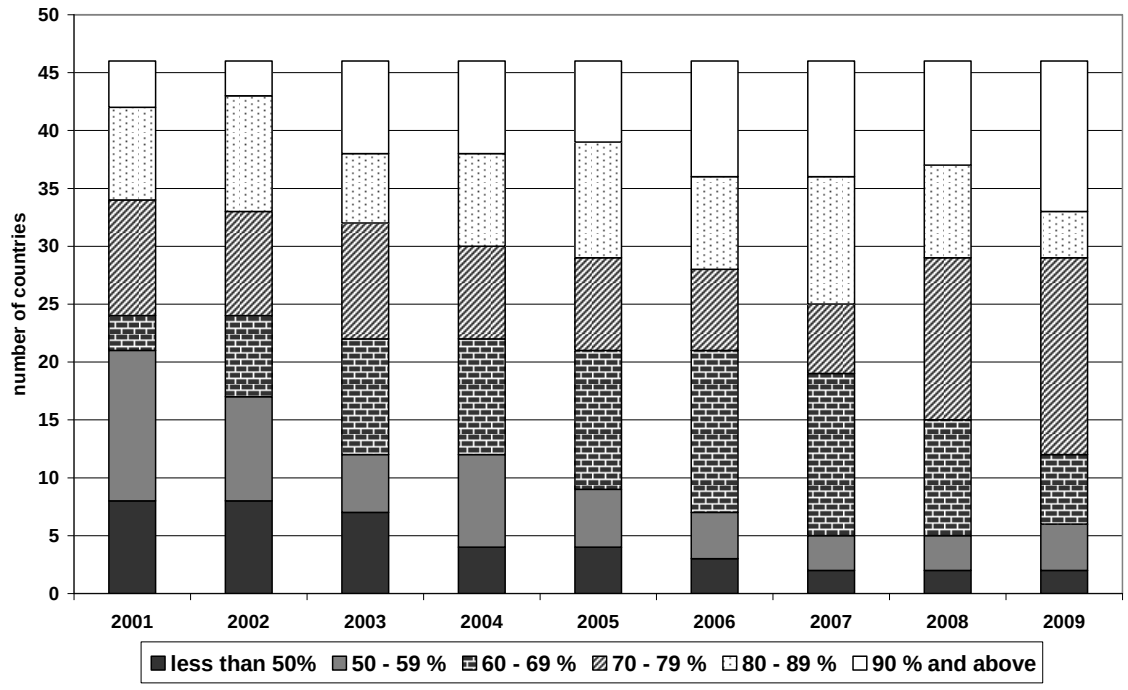
SITUATION ANALYSIS AND JUSTIFICATION

Situation analysis

8. Between 1980 and 1989, an average of one million suspected measles cases were reported in the African Region annually. This ten-year annual average dropped to 450 000 in the 1990s and to 250 000 between 2000 and 2009. Between 2006 and 2009, the average annual reported measles cases was below 100 000 for the whole Region.[6]

9. The WHO/UNICEF estimated coverage with the first dose of measles-containing vaccine (MCV1) in the African Region increased from 56% in 2001 to 69% in 2009.[7] Similarly, the number of countries with MCV1 coverage above 90% increased from four to thirteen and the number of countries with coverage below 50% reduced from eight to two (Figure 1).

Figure 1: Number of countries in the African Region by category of MCV1 coverage, 2001–2009 (WHO/UNICEF estimates).



10. Four hundred and forty-five million children in 43 Member States[8] were vaccinated through SIAs between 2001 and 2010. Measles SIAs have provided a platform for cost-effective delivery

[6] Measles cases reported by countries to the WHO (1980 – 2009). Immunization monitoring global summary. http://apps.who.int/immunization_monitoring/en/globalsummary/timeseries/tsincidencemea.htm last accessed on 1 Nov, 2010.

[7] Vaccination coverage figures according to WHO UNICEF coverage estimates for MCV1. http://apps.who.int/immunization_monitoring/en/globalsummary/timeseries/tsincidencemea.htm accessed on 1 Nov, 2010.

[8] All countries in the African Region except Algeria, Mauritius and Seychelles.

of high-impact child survival interventions including the supply of vitamin A, insecticide-treated bednets (ITNs) and anti-helminths.

11. As of December 2010, 40 Member States[9] have established case-based measles surveillance supported by a network of 44 national laboratories, using standard procedures and tools to confirm measles cases, and undertaking regular quality control exercises.

12. In 2010, the non-measles febrile rash illness rate was 4.1 per 100 000 in the Region, with 25 countries[10] (63%) meeting the target. In addition, 29 countries[11] (73%) met the target of 80% or more of districts investigating measles cases.

13. In 2010, 28 countries[12] in the Region experienced measles outbreaks with a cumulative total of 223 016 reported cases and 1193 ensuing deaths. These outbreaks were due to the shift of epidemiological susceptibility to include older age groups, suboptimal routine immunization coverage and gaps in SIAs coverage. In some countries in Southern Africa, resistance to immunization from certain religious communities contributed to large-scale outbreaks.

14. The problems identified in regard to the quality of immunization monitoring and surveillance data include inaccuracies in denominators, and gaps in the documentation and verifiability of immunization coverage data. Furthermore, surveillance and outbreak data are incomplete.

15. Detailed data is lacking as regards the reasons for the failure of immunization services to adequately reach target populations, underscoring the need for further operational research to identify the underlying reasons and the best approaches to address these weaknesses.

16. In 2009 and 2010, in 21 of the 30 follow-up measles SIAs, countries raised less than 50% of the operational costs from local sources. Such resource gaps have led to postponements of SIAs and undermined the quality of SIAs.

Justification

17. In 2008, it was estimated that measles killed around 28 000 children annually in the African Region,[13] representing a significant decrease in measles mortality in the Region. However, these gains would be lost and measles deaths would increase again if Member States do not maintain high immunization coverage.

18. Feasibility studies done at the global level indicate that measles eradication is biologically and technically feasible and is cost-effective and beneficial to health systems strengthening.[14]

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9 All countries in the African Region except Algeria, Comoros, Guinea-Bissau, Mauritius, Sao Tome and Principe and Seychelles.

10 Botswana, Burkina Faso, Burundi, Cameroon, Central African Republic, Congo, Ethiopia, Gabon, Gambia, Ghana, Kenya, Lesotho, Malawi, Mali, Mozambique, Namibia, Nigeria, Mali, Rwanda, Senegal, South Africa, Swaziland, Togo, Uganda, Zimbabwe.

11 Botswana, Burkina Faso, Burundi, Cameroon, Central African Republic, Congo, Cote d'Ivoire, Democratic Republic of the Congo, Eritrea, Ethiopia, Ghana, Kenya, Lesotho, Malawi, Mali, Mozambique, Namibia, Niger, Nigeria, Rwanda, Senegal, Sierra Leone, South Africa, Swaziland, Tanzania, Togo, Uganda, Zambia and Zimbabwe.

12 Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Central African Republic, Chad, Cote d'Ivoire, Democratic Republic of the Congo, Ethiopia, Guinea, Lesotho, Liberia, Malawi, Mauritania, Mozambique, Namibia, Niger, Nigeria, Mali, Senegal, Sierra Leone, South Africa, Swaziland, Togo, Zambia and Zimbabwe.

13 Global reductions in measles mortality 2000–2008 and the risk of measles resurgence WER. No. 49, 4 December 2009, p 509–516.

14 Global technical consultation to assess the feasibility of measles eradication. Washington DC. 28–30 July 2010.

19. Regional measles elimination can build on the successes in the implementation of measles mortality reduction strategies and the lessons from the Polio Eradication Initiative.[15] Measles elimination will foster the integration of child survival interventions and contribute towards the strengthening of immunization systems by enhancing the skills of health workers, strengthening vaccine management systems, mobilizing communities, and reaching out to populations that do not normally benefit from routine service delivery.

20. Four of the six WHO regions[16] have already adopted measles elimination goals. The Region of the Americas has already achieved and maintained measles elimination since 2002 through high and sustained routine immunization coverage, high-quality measles SIAs, and sensitive surveillance.

THE REGIONAL STRATEGY

Aim, objectives and targets

21. The aim of this Regional strategy is to achieve the elimination of measles in all Member States in the African Region by 2020.

22. The specific objectives are:

(a) to reduce measles incidence in all countries;
(b) to increase access to immunization services in all districts;
(c) to improve coverage during all scheduled measles SIAs and outbreak response immunization activities;
(d) to improve the quality of measles surveillance, as well as the epidemiological and virological investigation of measles outbreaks in all countries.

23. Targets: By 2020, all countries in the African Region will achieve and maintain:

(a) measles incidence of less than 1 case per million population at national level;
(b) at least 95% measles immunization coverage at national level and in all districts;
(c) at least 95% coverage in all scheduled measles SIAs, and in outbreak response immunization activities;
(d) at least 80% of districts investigating one or more suspected measles cases within a year, and a non measles febrile rash illness rate of at least 2 per 100 000 population at national level.

Guiding principles

24. The guiding principles of this strategy are:

(a) **Country ownership and leadership** in the implementation of this regional strategy.

(b) **Allocation of adequate resources** and their efficient use to attain the targets on time and maintain the gains of the regional elimination.

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[15] Measles pre-elimination and the programmatic feasibility of measles elimination in the African Region. Paper presented at the Global technical consultation to assess the feasibility of measles eradication. Washington DC. 28–30 July 2010.

[16] WHO Regions of Eastern Mediterranean, the Americas, Western Pacific and Europe.

(c) **Strengthening of partnerships** at local and global levels, and fostering sustainable **intersectoral collaboration** given the need to institutionalize coordinated intersectoral action in order to improve health determinants.

(d) **Community ownership** by ensuring that communities and civil society are actively involved and play a pivotal role in the implementation of the elimination strategies.

(e) **Integration** of measles interventions into health services and using the opportunities created through the implementation of the measles elimination strategies to deliver additional high impact child survival interventions.

(f) **Equitable access to essential health services** especially to people living in border areas, migrant and nomadic communities and other underserved segments of the population.

Priority interventions

25. **Improve routine immunization coverage** through systematic implementation of a combination of approaches to reach everyone targeted for immunization. These approaches, including the Reaching Every District approach, the periodic Child Health Days and others, basically involve increasing community demand for immunization; improving service delivery through the use of information for programme management; expanding access to immunization including outreach services; and improving and strengthening vaccine management systems.

26. **Provide a second opportunity for measles immunization** through high quality measles SIAs and/ or the introduction of a second dose of measles immunization in the routine immunization schedule in eligible countries as a major strategic approach to maintain high population immunity. However, the target age group for SIAs and the interval between SIAs will have to be determined according to the local epidemiological patterns, the need to reduce the incidence of the disease in all age groups and build immunity levels so as to interrupt local transmission, and transmission driven by importations. Strategic approaches and best practices proven to lead to high performance of SIAs and high coverage will be promoted and widely implemented.

27. **Improve immunization monitoring data quality.** Immunization programme managers should assess the quality of immunization coverage data and conduct regular data quality checks using standard methods such as Data Quality Assessment and multistage cluster coverage surveys, as appropriate, and use such information to ensure better management of the elimination programme.

28. **Improve the quality of disease surveillance.** Sensitive surveillance will be required in order to monitor the epidemiological situation and guide the immunization strategy. The implementation of measles surveillance should build on the existing vaccine-preventable diseases surveillance network. The geographical scale and the programmatic scope of the detection, investigation and reporting of suspected measles cases will have to be strengthened.

29. **Enhance information sharing among Member States.** High quality surveillance will require that countries regularly exchange epidemiological information between the public and private sectors and particularly in border areas where measures need to be taken collaboratively to rapidly respond to measles outbreaks. The expanded role of the national measles laboratories in an elimination context should be supported especially in viral strain identification and characterization.

30. **Promote operational research.** In the process of implementing these priority interventions, increased investment in operational research will be needed. Standard epidemiological research will be required for better understanding of the characteristics of the un-immunized populations, the reasons for immunization default, overall quality of immunization services and the development of innovative approaches to addressing immunity gaps in underserved populations.

31. **Ensure capacity building.** Appropriate quantitative and qualitative studies should be carried out to assess the training needs of health workers in addition to capacity building activities to address gaps in the capacity of health workers to plan, implement and monitor routine immunization services, implement high quality supplementary immunization activities, and carry out sensitive disease surveillance.

32. **Carry out sustained advocacy and resource mobilization.** There is need to undertake strong advocacy for, and champion measles elimination, develop advocacy materials, and engage partners and donors through regular meetings to ensure adequate financing for the implementation of the measles elimination strategies. The experiences should be documented and best practices and lessons learnt disseminated.

33. **Mobilize partners and coordinate interventions.** It is important to continue to use the platform of the Interagency Coordination Committees (ICC) and other national and subnational forums to strengthen local partnerships and forge new ones when necessary. Member States should coordinate and lead the partnerships in a manner that will optimally utilize the inputs to achieve the measles elimination goal and contribute towards the strengthening of immunization systems.

34. **Ensure availability of quality and affordable vaccines and medicines.** There is need to strengthen the procurement, supply and management of vaccines and medicines while ensuring accessibility and affordability to the population, in order to achieve universal coverage and better case management.

Roles and responsibilities

Member States

35. Member States should:

(a) Adopt a measles elimination goal to be attained by 2020.

(b) Develop strategic plans towards measles elimination by 2020.

(c) Mobilize and allocate adequate resources to implement strategic plans.

(d) Adopt, adapt or develop and use standards to facilitate the implementation of strategies.

(e) Develop sustainable mechanisms for regular coordination of stakeholders and partners in the implementation of the strategies, including across borders.

(f) Conduct operational research on the various aspects of strategy implementation in order to ensure the attainment of the targets.

(g) Document lessons from the measles mortality reduction efforts and identify best practices for emulation and scale up.

(h) Mobilize, involve and empower communities to effectively use immunization services.

WHO and Partners

36. Taking into account the proposed priority interventions, WHO in collaboration with UNICEF and other partners including the Measles Initiative[17] should:

(a) Provide technical assistance to countries for the development of strategic and operational plans and for the implementation of the measles elimination strategies.

(b) Support Member States to conduct operational research to better guide the implementation of measles elimination strategies.

(c) Develop and make available updated standards, including immunization schedules, and guidelines for the implementation of interventions.

(d) Support Member States to mobilize the necessary resources to achieve measles elimination by 2020.

(e) Scale up support to countries for cross-border surveillance and management of measles outbreaks.

(f) Undertake advocacy among global partners and donors for increased resources.

Resource implications

37. Measles elimination will require high levels of national commitment and the financial support necessary for full implementation of comprehensive national immunization plans which include measles elimination. Measles elimination efforts should be integrated into the overall health system strengthening especially improving access to immunization services, ensuring safe immunization practices, and improving the capacity of health workers, laboratory networks, epidemiological surveillance and cold-chain systems.

38. It is estimated that a total of US$ 2.6 billion will be required to attain measles elimination in the African Region by the year 2020. Forty-six percent of these costs are related to the existing programmatic costs of conducting routine immunization services.

39. It will be important to continue to promote global and local partnerships, building on the Measles Initiative model. Member States should create viable mechanisms for coordination of partners in order to pool resources from local partners and make optimal use of the opportunities created by the private sector, civil society organizations, faith-based organizations and other sectors.

MONITORING AND EVALUATION

40. Monitoring of progress towards the elimination of measles in the Region will be done through ongoing monitoring of the coverage of routine measles immunization and monitoring of SIA coverage at national and district levels. In addition, the DPT1 – MCV1 dropout rate will be monitored and periodic coverage surveys will be carried out to validate administrative coverage

[17] The Measles Initiative is a partnership led by the American Red Cross, the United Nations Foundation, the U.S. Centers for Disease Control and Prevention, UNICEF and the WHO. Other member partners include Becton, Dickinson and Company, Bill & Melinda Gates Foundation, Canadian International Development Agency, Church of Jesus Christ of Latter-day Saints, GAVI Alliance, International Federation of Red Cross and Red Crescent Societies, the Izumi Foundation, the Kessler Family Foundation, Merck Co., the Vodafone Foundation, and governments of countries affected by measles.

of routine immunization and SIA doses. Data analysis will be done in a disaggregated manner in order to monitor the equity of service delivery across geographical areas and populations.

41. High quality measles case-based surveillance supported with laboratory confirmation of cases and outbreaks will provide the crucial information needed to monitor the epidemiological situation and the incidence of measles. In addition, to cater for the gaps in case detection and notification, epidemiological modeling will provide estimates of measles deaths. The standard measles surveillance performance monitoring indicators will be monitored regularly to ensure that surveillance remains sensitive. The distribution and circulation of measles viral strains will also be monitored through laboratory characterization of viral strains in every measles outbreak.

42. Operational research will be conducted to determine the causes of non-immunization and will be used to develop new approaches to improve the delivery of immunization services through the routine programme and SIAs and to introduce new and upcoming technologies for measles case confirmation and measles vaccine delivery.

43. Progress towards the regional measles elimination goal will be independently assessed in 2015 and the results will be used to re-align and refine the implementation of the strategy. A comprehensive end-term evaluation of the strategy and its impact on immunization systems will be conducted in 2020.

CONCLUSION

44. The WHO/UNICEF measles mortality reduction strategies have proven to be efficient in reducing measles deaths in the African Region. Measles elimination efforts will build on these experiences from the past decade in a manner that strengthens immunization systems especially through building the competences of health workers to plan, implement and monitor immunization services, and through strengthening the cold chain system and vaccine management practices. Operational research will be required for enhanced understanding and better implementation of strategies to improve and maintain high level immunization coverage.

45. The implementation of the regional measles elimination strategy will be supported by a committed global and regional partnership as well as broad-based local partnerships in order to ensure the availability and efficient use of resources.

46. The elimination of measles is biologically and programmatically feasible. However, it requires intensive implementation of priority interventions and adequate financing from both Member States and local and international partners.

47. The Regional committee examined and adopted this strategy.

RESOLUTION

MEASLES ELIMINATION BY 2020: A STRATEGY FOR THE AFRICAN REGION
(Document AFR/RC61/8)

The Regional Committee,

Having carefully examined the document "Measles elimination by 2020: a strategy for the African Region";

Recalling Resolutions AFR/RC52/R2 on the Regional strategy for immunization during the period 2003-2005; AFR/RC56/R1 on the Regional strategic plan for the Expanded Programme on Immunization 2006–2009; and AFR/RC60/R4 on Routine immunization and polio eradication in the African Region;

Appreciating the achievements made so far by Member States and partners in reducing measles mortality by 92% by 2008 as compared with 2000 estimates;

Noting the challenges concerning the accuracy of population estimates for the monitoring of immunization coverage;

Deeply concerned about the recent resurgence of measles in the African Region, and the fragility of the gains in measles mortality reduction;

Noting the changing epidemiological pattern of measles, with an increasing proportion of cases in young infants, older children and adults;

Recognizing the programmatic feasibility as well as the system-wide challenges of measles elimination;

Convinced that eliminating measles will contribute significantly to the attainment of MDG 4 and towards health systems strengthening;

1. ENDORSES the document aimed at the adoption of a measles elimination goal for the African Region;

2. URGES Member States:

   (a) to develop and implement national plans for the elimination of measles by 2020, in line with the Regional Strategic Plan;

   (b) to provide adequate financial and human resources for the implementation of national plans to sustain the gains in measles mortality reduction, in order to reach the measles pre-elimination targets by 2012, and ultimately attain measles elimination by 2020;

   (c) to mobilize national and international stakeholders from the public and private sectors, NGOs, bilateral and multilateral organizations including local communities and coordinate all activities in the measles elimination efforts;

   (d) to generate reliable and updated population data to be used for monitoring measles immunization coverage.

3. REQUESTS the Regional Director:

(a) to develop a Regional Strategic Plan for measles elimination;

(b) to provide evidence-based technical guidance on programmatic issues including the age for measles vaccination;

(c) to provide technical support to Member States for the development and implementation of national plans for the elimination of measles;

(d) to advocate for additional resources at national and international levels for the elimination of measles in Member States;

(e) to report to the Regional Committee beginning in 2012 and thereafter every two years on the progress made towards the elimination of measles.