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FRAMEWORK FOR THE IMPLEMENTATION OF THE IMMUNIZATION AGENDA 2030 IN THE WHO AFRICAN REGION

Report of the Secretariat

EXECUTIVE SUMMARY

1. With more than 30 million children under five years of age suffering from vaccine-preventable diseases (VPDs) every year in Africa, VPDs remain a major threat. While Africa has seen tremendous progress towards access to immunization, coverage of the third dose of diphtheria-tetanus-pertussis containing vaccine (DTP3) and the first dose of measles-containing vaccine (MCV1) remain far below the 2019 target. This calls for continuous and targeted investment in immunization and primary health care (PHC). Investing in immunization strengthens health systems and advances universal health coverage (UHC).

2. Immunization coverage in the African Region is lagging behind the 90% target set in the Regional Strategic Plan for Immunization (RSPI) 2014-2020. Between 2013 and 2019, immunization coverage of DTP3 increased from 70% to 74%, while coverage of MCV1 decreased from 70% to 69%. Except for the certification of the Region as being wild polio-free, none of the disease elimination goals have been achieved. The African Region is now home to about 7.3 million zero-dose children with 86% of them located in 10 Member States. The advent of COVID-19 and subsequent disruption of essential health services has worsened the status of essential immunization delivery. Several immunization campaigns and new vaccine introductions have also been postponed.

3. The African Region has developed this Regional framework for the implementation of the Immunization Agenda 2030 (IA2030) through a rigorous consultative process. Its development was based on the global vision and aligns well with the Regional Committee resolution on UHC. The framework also captures the impacts of COVID-19, and the lessons learnt from the response to the pandemic and associated service disruptions.

4. The Regional framework for the implementation of the Immunization Agenda 2030 envisions a region where everyone, everywhere and at every age fully benefits from vaccines for good health and well-being. This vision is anchored on the current status of immunization and its challenges in the Region. These include the suboptimal coverage of key antigens, the promising progress made in introducing new vaccines, and the progress made against disease elimination and eradication targets. The Regional framework aims to achieve key targets by 2030 through addressing the system-wide constraints of immunization within PHC. It recognizes the potential impact of demographic transitions, population movements and climate change on the epidemiology of VPDs and immunization coverage. Therefore, it seeks to tackle the inadequate preparedness in responding to

VPD outbreaks, while addressing the growing vaccine hesitancy in the Region.

5. The Regional framework prioritizes core system-level strategic actions to meet its target of leaving no one behind and ensuring universal access to immunization. These interventions include strengthening health systems, building optimal political and community leadership, optimizing service delivery to target zero-dose and under-immunized children, and enhancing data systems for decision-making. Furthermore, the key actions proposed include building resilient immunization systems and strengthening capacity for vaccine logistics, regulation, safety monitoring and local manufacturing.

6. The Regional Committee examined and adopted the priority interventions and actions proposed.

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Paragraphs

ABBREVIATIONS

ADI	Addis Declaration on Immunization
AEFI	adverse events following immunization
COVID-19	coronavirus disease 2019
cVDPV	circulating vaccine-derived poliovirus
DTP	diphtheria-tetanus-pertussis
DTP3	diphtheria-tetanus-pertussis containing vaccine, third dose
EPI	Expanded Programme on Immunization
Gavi	The Vaccine Alliance
GPEI	Global Polio Eradication Initiative
GVAP	Global Vaccine Action Plan
HPV	human papillomavirus
IA2030	Immunization Agenda 2030
MNT	maternal and neonatal tetanus
MCV1	measles-containing vaccine, first dose
MCV2	measles-containing vaccine, second dose
NITAG	National Immunization Technical Advisory Group
PCV	pneumococcal conjugate vaccine
PHC	primary health care
RSPI	Regional Strategic Plan for Immunization
RCV	rubella-containing vaccine
SARS-CoV-2	severe acute respiratory syndrome coronavirus 2
SDGs	Sustainable Development Goals
UHC	universal health coverage
UNICEF	United Nations Children's Fund
VPD	vaccine-preventable disease
WHA	World Health Assembly
WHO	World Health Organization
WPV	wild poliovirus
YF	yellow fever

INTRODUCTION

1. Immunization is one of the most cost-effective public health interventions. More than 30 million children under five years of age suffer from vaccine-preventable diseases (VPDs) every year in Africa.[1] Of that number, over half a million die from these VPDs annually, accounting for 58% of all global deaths.[2]

2. Despite new vaccine introductions and modest improvements between 2013 and 2019, coverage remains below the 90% target. Most regional immunization goals as stated in the Global Vaccine Action Plan (GVAP) 2011–2020 and the Regional Strategic Plan for Immunization (RSPI)[3] 2014–2020, have not been achieved.

3. The COVID-19 pandemic and the associated overstretching of health service capacity have disrupted routine immunization services. This interruption may continue due to the repurposing of health workers for COVID-19 vaccine roll-out, and further delay the achievement of immunization goals. However, investments made to strengthen immunization services integrated in primary health care (PHC) could build resilience once pandemic peaks resolve and COVID-19 vaccines are rolled out more extensively. This Regional framework directly addresses the challenges of the COVID-19 pandemic and other public health emergencies and leverages emerging opportunities to strengthen health systems into the post-pandemic future.

4. With a global and regional commitment to move towards universal health coverage (UHC), a global immunization strategy, the Immunization Agenda 2030 (IA2030) was endorsed by Member States in August 2020 during the Seventy-third World Health Assembly.[4] The IA2030 was developed with extensive input from Member States, civil society organizations, the scientific community and vaccine delivery partners. Anchored on the strengths and lessons learnt from GVAP and RSPI, the IA2030 prioritizes the needs, perspectives and emerging priorities of Member States.

5. This Regional framework defines the implementational aspects of the IA2030 as applied to the African Region. It provides the basis upon which success of such implementation is to be evaluated.

CURRENT SITUATION

6. **Immunization coverage pre-COVID-19:** Coverage of the third dose of diphtheria-tetanus-pertussis containing vaccine (DTP3) and the first dose of measles-containing vaccine (MCV1) was 74% and 69% respectively, in 2019. The coverage for both antigens was 70% in 2013. Nineteen Member States[5] achieved the RSPI target of 90% DTP3 coverage. Fifteen

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1 World Health Organization (2019). Investment case for vaccine-preventable disease surveillance in the African Region 2020-2030. Geneva: World Health Organization (https://www.afro.who.int/publications/investment-case-vaccine-preventable-diseases-surveillance-african-region-2020-2030, accessed 3 March 2021).

2 WHO Regional Office for Africa (2018). Immunization Business Case for Africa. Brazzaville: WHO Regional Office for Africa (https://www.afro.who.int/publications/business-case-who-immunization-activities-african-continent-2018-2030, accessed 4 March 2021)

3 World Health Organization (2019). Global Vaccine Action Plan 2011-2020; SAGE working group report. Geneva: World Health Organization.

4 World Health Assembly (2020). Decision WHA73(9): Immunization Agenda 2030. Geneva: World Health Organization.

5 Algeria, Botswana, Burkina Faso, Burundi, Cabo Verde, Comoros, Eritrea, Eswatini, Ghana, Kenya, Malawi, Mauritius, Rwanda, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, Uganda and Zimbabwe.

Member States[6] achieved the RSPI target of 90% for MCV1 coverage. In 2019, there were an estimated 7.3 million zero-dose children, of which 86% are located in 10 Member States.[7]

7. **Immunization coverage during the COVID-19 pandemic**: Member States reported disruptions of immunization services with a drop in the number of the monthly average doses administered in 13 out of the 15 Member States[8] assessed. The impact on fixed-site and outreach vaccination services has been substantial. Supplementary immunization activities and new vaccine introductions were also postponed. However, all Member States subsequently started conducting catch-up activities to improve performance.

8. **New vaccine introduction:** By the end of 2019, all except seven Member States[9] introduced pneumococcal conjugate vaccine, and rotavirus vaccine has been introduced in all but eight Member States.[10] Fifteen[11] of the 47 Member States have introduced human papillomavirus (HPV) vaccine and 14 Member States[12] have introduced hepatitis B vaccine birth dose. By the end of 2019, except for Ethiopia, South Sudan and Uganda, all yellow fever high-risk countries had introduced routine yellow fever (YF) vaccination at national level.

9. **COVID-19 vaccine introduction:** COVID-19 vaccine roll-out prioritizes high-risk adult populations. These large populations are out of reach of the conventional PHC delivery strategies that target infants through adolescents. Achieving higher coverage requires leveraging investments in data systems, community engagement, life course-focused immunization and empowered district health teams. This will enable extending the strengths of existing systems to address strategic priorities of IA2030.

10. **Malaria vaccine implementation programme:** The RTS,S/AS01 malaria vaccine pilot implementation commenced in Ghana, Kenya and Malawi in 2019. Approximately 360 000 children were immunized per year under the pilot programme[13] in the three countries, while building evidence to inform decisions on subsequent use of the new vaccine across Africa.

11. **Elimination of measles, rubella and maternal and neonatal tetanus**: In addition to the reduction of MCV1 coverage due to the COVID-19 pandemic, regional coverage levels for the second dose of measles-containing vaccine (MCV2) are very low at 33%. Twenty-nine Member States[14] have introduced rubella-containing vaccine (RCV). By the end of 2019, all except six Member States[15] had been validated for national-level elimination of maternal and neonatal tetanus.

12. **Polio eradication**: In August 2020, the Region was certified as having interrupted indigenous wild poliovirus circulation. In the past year, the Region has noted a surge in

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6 Botswana, Burundi, Cabo Verde, Comoros, Eritrea, Ghana, Lesotho, Malawi, Mauritius, Rwanda, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone and Zambia.

7 Angola, Cameroon, Chad, Democratic Republic of the Congo, Ethiopia, Guinea, Nigeria, South Africa, South Sudan and United republic of Tanzania.

8 **Decrease**: Angola, Burundi, Central African Republic, Eritrea, Gabon, Ghana, Guinea, Kenya, Nigeria, Rwanda, Senegal, South Sudan and United Republic of Tanzania; **No decrease**: Chad and Democratic Republic of the Congo

9 Cabo Verde, Chad, Comoros, Equatorial Guinea, Gabon, Guinea and South Sudan

10 Comoros, Congo, Côte d'Ivoire, Gabon, Guinea, Niger, Senegal and South Sudan,

11 Botswana, Côte d'Ivoire, Ethiopia, Gambia, Kenya, Liberia, Malawi, Rwanda, Senegal, Seychelles, South Africa, Uganda, United Republic of Tanzania, Zambia and Zimbabwe.

12 Algeria, Angola, Benin, Botswana, Cabo Verde, Côte d'Ivoire, Equatorial Guinea, Gambia, Mauritania, Mauritius, Namibia, Nigeria, Sao Tomé and Principe and Senegal.

13 World Health Organization (2020). Malaria Vaccine Implementation Programme. Geneva: World Health Organization (https://www.who.int/news-room/q-a-detail/malaria-vaccine-implementation-programme, accessed 4 March 2021).

14 Algeria, Angola, Benin, Botswana, Burkina Faso, Burundi, Cabo Verde, Cameroon, Congo, Côte d'Ivoire, Eritrea, Eswatini, Gambia, Ghana, Kenya, Lesotho, Malawi, Mauritania, Mauritius, Mozambique, Namibia, Rwanda, Sao Tome and Principe, Senegal, Seychelles, Togo, United Republic of Tanzania, Zambia and Zimbabwe.

15 Angola, Central African Republic, Guinea, Mali, Nigeria and South Sudan.

circulating vaccine-derived poliovirus type 2 (cVDPV2), with 13 Member States[16] being affected. These outbreaks are being addressed through targeted mass immunization campaigns that complement efforts to strengthen PHC services.

13. **Elimination of meningococcal meningitis**: Since 2010, a total of 23 Member States[17] in the meningitis belt have conducted MenAfriVac immunization campaigns. Following these campaigns, group A meningococcal meningitis has been nearly eliminated in the Region. Currently, meningitis A vaccine has been introduced in the routine immunization programmes of 11 Member States[18] in the belt.

ISSUES AND CHALLENGES

14. **System-wide issues**: System-wide challenges hamper sustainable immunization coverage of the Region. These include lack of appropriate infrastructure, shortage of skilled human resources and weak supply chain systems. In addition, financing of immunization is heavily donor-dependent due to inadequate funding by Member States. These challenges have been exacerbated by the COVID-19 pandemic and may grow even worse on account of the intense demands of the COVID-19 vaccine roll-out. Another challenge lies in the limitations faced by district health teams in tailoring COVID-19 vaccination and other PHC services to the needs of communities; this prevents them from addressing such system-wide issues.

15. **Limited access to services:** Delivery of immunization services to hard-to-reach and marginalized populations remains a major challenge. Remote, rural, urban, poor and other vulnerable groups (such as internally displaced populations and refugees) experience significant barriers to accessing health services including immunization. Persistent conflicts and political instability have had damaging effects on health systems including immunization programmes.[19] This has been exacerbated by COVID-19 pandemic-associated reductions in vaccine outreach services.

16. **Inadequate use of data**: Despite their availability, data are not always used to inform programme management and decision-making at national and subnational level. Data quality is suboptimal due to limited human resource capacity and fragmentation of data collection tools. Health information systems are siloed and less integrated, which pose challenges to advancing the quality and use of data.

17. **Vaccine supply and management issues:** Global supply shortages, cold chain and vaccine management issues result in service interruptions, exacerbating missed opportunities for immunization. The high cost of new vaccines remains a major challenge for Member States, particularly those not supported by Gavi. Some COVID-19 vaccines require ultra-cold chain capacity, curtailing product choice for the Region.

18. **Demographic transitions, population movements and climate change**: Though demand for life-course vaccinations may be accelerated by COVID-19 vaccine deployment, as Africa's population grows and longevity improves, health systems will be challenged to deliver immunization services commensurate with population needs, including adult vaccination. The

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[16] Angola, Benin, Cameroon, Central African Republic, Côte d'Ivoire, Chad, Democratic Republic of the Congo, Ethiopia, Ghana, Nigeria, Niger, Togo and Zambia.

[17] Benin, Burkina Faso, Burundi, Cameroon, Central African Republic, Chad, Côte d'Ivoire, Democratic Republic of the Congo, Eritrea, Ethiopia, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Mali, Mauritania, Niger, Nigeria, Togo, Senegal, South Sudan and Uganda.

[18] Burkina Faso, Central African Republic, Chad, Côte d'Ivoire, Eritrea, Gambia, Ghana, Guinea, Mali, Niger, and Nigeria.

[19] Grundy J, Biggs B (2018). The impact of conflict on immunization coverage in 16 countries. International Journal of Health Policy and Management. 8(4): 211-221 (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6499911/, accessed 4 March 2021).

Region has high mobile populations and high levels of displacement due to conflicts and natural disasters. Augmented by climate change, these pressures are altering the ecology and propagation of infectious disease vectors, increasing the risk of outbreaks of such diseases as yellow fever, cholera and malaria.

19. **Vaccine hesitancy and confidence**: Limited awareness about the importance of immunization and increasing mobile phone penetration exacerbates vaccine disinformation, contributing to vaccine hesitancy. Hesitancy affects gender-specific HPV vaccines, measles-rubella campaigns and the impending COVID-19 vaccination. Prior to COVID-19, evidence from several countries highlighted the overall increase in vaccine hesitancy.

20. **Inadequate preparedness and response to VPD outbreaks:** Delayed detection, confirmation and notification leads to frequent and prolonged VPD outbreaks. VPD laboratory surveillance networks continue to rely on polio-funded infrastructure, which is being impacted by the resource ramp-down due to the imminent closure of the Global Polio Eradication Initiative (GPEI). As a result, Member States are facing challenges to implement and closely monitor coverage of supplementary immunization campaigns that are essential to successfully respond to VPD outbreaks.

VISION, GOALS, OBJECTIVES, MILESTONES AND TARGETS

21. **Vision:** A Region where everyone, everywhere, at every age, fully benefits from vaccines for good health and well-being by 2030.

22. **Goals:** Ensure good health and well-being for everyone by reducing mortality, morbidity and disability from vaccine-preventable diseases as well as by strengthening immunization within primary health care.

23. **Objectives:**

(a) Increase immunization coverage and equity;

(b) Sustain the wild polio-free status of the Region;

(c) Achieve and sustain regional elimination of maternal and neonatal tetanus, and accelerate progress towards regional elimination of measles, rubella and hepatitis B;

(d) Prevent and control other VPDs.

24. **Targets**

By 2030:

(a) All Member States have achieved a 90% coverage rate for all vaccines nationally, and in all districts;

(b) All Member States have achieved 90% coverage of COVID-19 vaccine in all high-risk populations;

(c) All Member States have maintained polio-free status and controlled cVDPV outbreaks;

(d) All Member States have achieved and maintained elimination of MNT; and

(e) At least 80% of Member States have been verified for elimination of measles and rubella and 70% for hepatitis B.

25. **Milestones:**

By 2023:

(a) At least 30% of Member States have attained 90% coverage for all vaccines nationally, and in all districts;

(b) All Member States have introduced COVID-19 vaccination, and achieved 70% coverage in prioritized risk groups;

(c) All Member States have maintained their polio-free status and contained all cVDPV outbreaks;

(d) At least 90% of Member States have been validated for elimination of MNT; and

(e) At least 40% of Member States have been verified for elimination of measles and rubella, and 20% for hepatitis B.

By 2028:

(a) At least 60% of Member States have attained 90% coverage for all vaccines nationally, and in all districts;

(b) All Member States have achieved 90% coverage of COVID-19 vaccine in high-risk populations;

(c) All Member States have maintained their polio-free status and controlled cVDPV outbreaks;

(d) All Member States have been validated for elimination of MNT; and

(e) At least 50% of Member States have been verified for elimination of measles and rubella, and 40% for hepatitis B.

GUIDING PRINCIPLES

26. **People-centred approach**: Place the African people at the heart of immunization and engage them with the design, management and delivery of immunization services that are shaped by, and responsive to the needs of individuals and communities.[20]

27. **Country-owned**: Ensure actions to improve immunization programmes are country-led and that international partners' support is tailored to the needs and unique context of each country. Member States have a responsibility for establishing good governance; communities and civil society should be actively involved and play a pivotal role in the implementation of the immunization strategic plan.

28. **Equity**: Equitable access to immunization services is a core component of the right to health. The benefits of immunization should be more equitably extended to all children, adolescents and adults, while closing the gender gap.

29. **Data-driven:** Timely and accurate data, evidence and research should be used to drive improvements in immunization performance, including data digitalization and real-time monitoring of vaccination activities.

30. **Building on partnerships and mutual accountability**: Build alliances to maximize impact on collective goals and increase coordination and alignment of activities among partners. This will build on complementarity and avoid duplication as well as foster mutual accountability among individuals, communities, stakeholders and governments.

[20] World Health Organization (2016). WHO framework on integrated people centred health services. Geneva: World Health Organization (https://www.who.int/servicedeliverysafety/areas/people-centred-care/framework/en/, accessed 5 March 2021).

31. **Sustainability** through appropriate levels of financing, financial management and oversight, based on evidence-informed decisions and implementation of innovative strategies.

32. **Innovation and technologies:** Adopt technological and programmatic innovations such as the Geographic Information System (GIS) and the use of drones to distribute vaccines in hard-to-reach geographical areas, so as to improve quality across all aspects of immunization, including documentation of best practices and lessons learnt.

PRIORITY INTERVENTIONS AND ACTIONS

33. This framework proposes the priority interventions and actions that underpin the IA2030 for the African Region. They are aligned with the global IA2030, the Sixty-seventh Regional Committee resolution on UHC and the Regional strategies for achieving UHC and the Sustainable Development Goals by 2030.

34. **Strengthening immunization programmes as an integral component of PHC and UHC**: Member States should strengthen their national immunization programmes within the overarching primary health care systems. This will require providing integrated and people-centred health services that can contribute to achieving UHC. It requires planning to be based on local service delivery gaps, and service provision to be improved through strengthening outreach and fixed-site services. Such integrated immunization systems strengthening will also help build the capacity to withstand pandemic-associated disruptions.

35. **Strengthening human resource capacity for health:** A systems-based approach should be applied to build strong, sustainable, and well-coordinated programmes delivering high-quality services. Motivated, appropriately trained and resourced health workers are critical elements of people-centred health services. Member States should implement comprehensive strategies to build the skills of the health workforce and improve its motivation, satisfaction and retention. Such strategies should also include actions to protect the safety of health workers at the workplace.

36. **Mobilizing political commitment**: Member States should mobilize political leaders to continue to implement the Roadmap for the Addis Declaration on Immunization (ADI).[21] This includes mobilization of sufficient financial resources for immunization to cover both vaccines and operations. Member States also need to establish functional National Immunization Technical Advisory Groups (NITAG), whose main role is to provide independent evidence-based recommendations for policy- and decision-making. This will be increasingly important as a wider range of vaccine products become available and decision-making becomes more complex.

37. **Investing to strengthen national capacities for leadership, management, coordination and accountability:** Member States should invest in strengthening national capacities for better leadership, management and coordination, within the increasingly complex and expanding immunization landscape. This will improve promotion of efficient, higher performing, integrated and resilient systems that are better positioned to deliver and sustain high-quality immunization services.

38. **Empowering individuals and communities:** Immunization should be valued by all people as a fundamental right, with ownership at all levels. Individuals and communities should actively support and seek immunization services. Members States should improve communication and

[21] WHO Regional Office for Africa, WHO Regional Office for Eastern Mediterranean (2017). The Addis Declaration on Immunization. Brazzaville: WHO Regional Office for Africa (https://www.afro.who.int/health-topics/immunization/the-addis-declaration-immunization, accessed 3 March 2021).

promote community engagement and collaboration for immunization. This will increase vaccine confidence, reduce hesitancy among communities and improve resilience to growing anti-vaccination influence.

39. **Increasing access to immunization services:** Increasing and maintaining equitable access to new vaccines and immunization should be a key priority to Member States, particularly among populations in areas with large numbers of unvaccinated (zero-dose) and under-vaccinated communities. Other underserved populations, including the urban poor and socially marginalized populations, should also be prioritized. Immunization services should be provided free of charge and out-of-pocket expenses need to be reduced by increasing outreach services and offering daily fixed-site services. High-quality immunization programme planning should also be conducted, financed and fully implemented in a timely manner.

40. **Accelerating access to, and introduction of new and under-utilized vaccines:** Member States should continue evidence-based prioritization of vaccines for introduction. They should plan to introduce new and under-utilized vaccines based on the evidence on disease burden, cost-effectiveness, community acceptability and the vaccine's impact in preventing deaths and disabilities. Such evidence will boost international efforts to support access to vaccines, especially for middle-income Member States and those graduating from Gavi support. A notable example is the support provided by WHO and UNICEF on transparent pricing and group procurement through the Middle-income Countries' Financing Facility.[22] Moreover, the advent of COVID-19 vaccines has demonstrated the importance of equitable access to vaccines for countries and specific populations. A strong advocacy and capacity building effort will need to be made to improve Member States' equitable access to new vaccines including those for COVID-19.

41. **Integrating immunization services into other service delivery platforms throughout the life course:** Immunization policies and service delivery platforms should be strengthened for vaccination throughout the life course by delivering integrated packages. Member States need to strengthen collaborations across programmes within the broader health system as well as with other sectors to provide comprehensive people-centred services. The pandemic has brought the life-course approach into sharp focus. Since most COVID-19 deaths occur in older adults and persons with concurrent medical conditions, the current COVID-19 vaccine roll-out will provide an opportunity for expanding service and monitoring systems across different ages including older populations.

42. **Preparing and responding to outbreaks and emergencies**: Member States should build and strengthen integrated disease surveillance systems including laboratory capacity to rapidly identify pathogens, promptly investigate outbreaks and mount an adequate response. In addition, robust VPD surveillance will be essential to identify risks of outbreaks, monitor the effectiveness of immunization programmes and demonstrate the impact of new vaccine introductions. Member States should develop, fund and implement robust multisectoral preparedness and response plans to manage outbreaks including those of VPDs. Particular to COVID-19, Member States, while implementing comprehensive interventions, should introduce and roll out COVID-19 vaccines to their target populations at speed and equity, while also maintaining and scaling up immunization with existing antigens.

43. **Improving vaccine supply and logistics**: To prevent vaccine stock-outs and strengthen the vaccine supply chain, Member States should strengthen capabilities for forecasting, procuring and distributing vaccines and other immunization commodities. In addition, capacity for effective

[22] World Health Organization (2021). Immunization Agenda 2030. Geneva: World Health Organization (http://www.immunizationagenda2030.org/resources/middle-income-countries, accessed 4 March 2021).

immunization cold chain management and supply chain should be strengthened. Vaccine manufacturing capacity in the Region should also be analysed and developed.

44. **Strengthening vaccine regulation and safety monitoring**: Member States should establish and strengthen national regulatory authorities to streamline and harmonize practices to improve access and accelerate the introduction of new vaccines. Safety monitoring systems that collect safety signals and adverse events following immunization (AEFI) should also be strengthened. The demand for pharmacovigilance following COVID-19 vaccine roll-out will be high. Community expectations of safety surveillance will mean that systems for ascertaining AEFI will require substantial investment and participation. Safety surveillance systems will be crucial for ongoing community acceptance of other vaccines that are not in the Expanded Programme on Immunization (EPI), such as those for pregnant women and adults.

45. **Enhancing health information systems for action**: Member States should establish robust, integrated and user-friendly health information systems. Digital technologies hold great promise for enhanced collection, management and use of data to improve programming. Using web-based platforms for real-time data capture, alerts, automated reports and dashboard will promote better use of data at all levels. Utilization of quality data can assist local level microplanning that can form the basis for coverage improvement and accountability to communities. EPI staff can use the data to maximize effectiveness and efficiency, and identify areas requiring further investment.

46. **Improving quality and efficiency of services through research and innovations**: Innovation offers new opportunities to reach underserved populations and improve the quality of services. In addition, behavioural science informs the design of services by providing insights about individual and community immunization-related attitudes and behaviours. Member States should identify and scale up innovations and use the findings from implementation and behavioural science research to improve programme management and performance. Innovation, research and a culture of data use at local level will be important, and should form the basis of local advocacy for service improvement and strengthening of investment.

47. This Regional framework will be operationalized through a Regional strategic plan for immunization and national immunization strategies to be developed. Implementation will be monitored through accountability and evaluation platforms. Progress will be presented to the Regional Committee biennially.

ACTIONS PROPOSED

48. The Regional Committee examined and adopted the actions proposed.