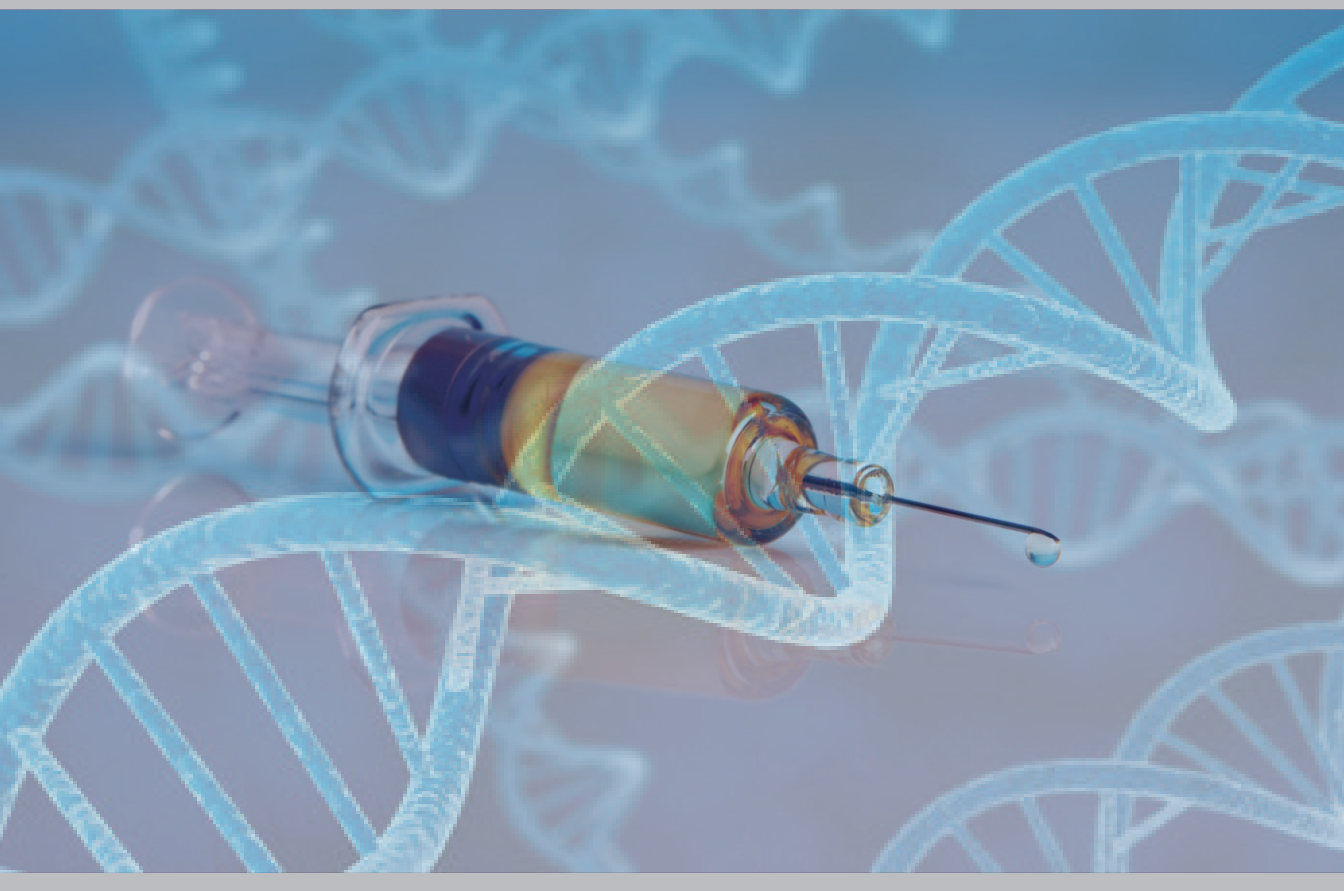
The Nigerian Academy of Science:

Vaccines and Immunization Advisory Committee



First Meeting Report

THE NIGERIAN ACADEMY OF SCIENCE
PMB 1004, University of Lagos Post Office, Akoka,Yaba, Lagos, Nigeria
Tel: (+234) 1-8508381
Website: www.nas.org.ng
Email: admin@nas.org.ng

Academy House
8A, Ransome Kuti Road
University of Lagos
Lagos, Nigeria

ISBN:

THE NIGERIAN ACADEMY OF SCIENCE

The Nigerian Academy of Science (NAS) was founded in 1977. It is the foremost independent scientific body in Nigeria dedicated to the development and advancement of evidence-based science, technology and innovation in Nigeria. NAS is uniquely positioned to bring scientific knowledge to bear on the policies and strategic direction of the country and institutionalize proven methods of consistently impacting policies in the country with scientific evidence. It is an honorific and service-oriented organization founded on the core values of merit, integrity, independence, objectivity, and the pursuit of excellence.

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Uche Isiugo-Abanihe
Department of Sociology, University of Ibadan, Ibadan

Lekan Asuni
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PREFACE

The Nigerian Academy of Science is an independent body of scientists with diverse expertise, who work to promote excellence in science; offering un-biased, evidence-based advice for the development of Nigeria. The mission of NAS is to strengthen the nation's ability to apply scientific knowledge for finding solution to national problems and challenges; leading to improvement in the quality of life for every Nigerian. Core values of the NAS include adherence to merit, pursuit of excellence, integrity, volunteerism, service orientation, relationship building and commitment.

The NAS is able to fulfil her mission by

I. Providing advice on specific issues of a scientific or technological nature, presented to it by the government and its agencies as well as private organisations.
II. Bringing to the attention of government and its agencies, problems of national interest, that science and technology can help solve.
III. Establishing and maintaining the highest standards of scientific endeavour and achievement in Nigeria.

To help achieve the above, the NAS has established a tradition of convening workshops, conferences, and fora on issues on national interest, with policy briefs and reports as outcomes of these meetings. More recently, the NAS has also begun forming advisory committees, comprised of experts on issues of national interest and concern.

In the light of the perennial national immunization coverage challenges, NAS has identified the need to establish an independent advisory committee on vaccines and immunization. The inadequacy of routine immunization coverage continues to have deleterious consequences for the health of the Nigerian child, and ultimately the nation. The National Primary Health Care Development Agency (NPHCDA) has expressed its full support and commitment to work with the NAS advisory committee on this very important national issue. This report summarises the discussions at the maiden meeting of the committee.

ACKNOWLEDGMENTS

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Institute of Medicine, U.S National Academies, Washington D.C

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International Vaccines Access Centre, Johns Hopkins Bloomberg School of Public Health, USA

Christian Acemah
Institute of Medicine, U.S National Academies, Washington D.C

The review of this report was overseen by NAS leadership, who was responsible for making certain that an independent examination of this report was carried out in accordance with institutional procedures and that all review comments were carefully considered. Although the reviewers provided many useful comments, they were not asked to endorse the final draft of the report.
NAS gratefully acknowledges the African Science Academy Development Initiative (ASADI) of the U.S. National Academies for providing the initial funding for this committee.

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LIST OF ACRONYMS

AEFI	Adverse Effects Following Immunization
BCG	Bacille Calmette-Guerin (vaccine)
DPT	Diphtheria Pertusis &Tetanus (vaccine)
EPI	Expanded Programme on Immunization
FCT	Federal Capital Territory
FMoH	Federal Ministry of Health
GAVI	Global Alliance for Vaccines and Immunization
Hep B	Hepatitis B (vaccine)
Hib	Haemophilus Influenza type B Vaccine
LGAs	Local Government Areas
MCV	Measles Childhood Vaccine
MDG	Millennium Development Goal
MenAfricVac	Meningococcal A Conjugate Vaccine
NAS	The Nigerian Academy of Science
NPHCDA	National Primary Health Care Development Agency
NPI	National Programme on Immunization
OPV	Oral Polio Vaccine
RI	Routine Immunization
TT	Tetanus Toxoid (vaccine)
UNICEF	United Nations Children's Fund
VDPV2	Vaccine Derived Polio Virus
WHO	World Health Organisation
WPV	Wild Polio Virus

SUMMARY

The Global Vaccines Action Plan (GVAP) for the Decade of Vaccines (2011-2020) calls for countries to take primary ownership and responsibility for establishing good governance and providing effective immunization services to their people. It also affirms that immunization against vaccine-preventable diseases is an individual, community, and governmental responsibility (WHO, 2012). To ensure that Nigeria achieves the objectives of the GVAP, the Nigerian Academy of Science (NAS) is establishing a Vaccines and Immunization Advisory Committee (VIAC).

NAS held a maiden meeting of the NAS-VIAC on the 15th of November 2012 in Lagos to discuss the rationale and work of the newly formed committee. Some identified individuals chosen to be members of the committee had been previously screened by the NAS, for their suitability and expertise, and invited to attend the meeting upon their acceptance to be part of the committee. The NAS-VIAC will provide technical, impartial, evidence-based, and credible advice on vaccine and immunization issues to the Federal Ministry of Health (FMoH) and the National Primary Health Care Development Agency (NPHCDA). The focus of the committee will include the following areas:

I. Policy guidance.
II. Routine immunization.
III. New and under-utilised vaccines.
IV. Monitoring and evaluation.

To set the stage for the work of the committee, a presentation on the current status of Nigeria's immunization program (as at July 2012) was given by Dr. Joseph Oteri on behalf of the National Primary Health Care Development Agency (NPHCDA). The presentation outlined the following:

- Significant variations in the immunization coverage performance in Nigeria over the past decades, with DPT3 coverage peaking at 81.5% between 1988 and 1990, and falling to less than 25% in the late nineties. Current coverage figures this year between January and July 2012 stand at 38% (NPHCDA, 2012)

- NPHCDA is also currently working on the following immunization interventions:
    - Polio eradication
    - Yellow fever prevention
    - Measles follow-up campaign
    - Meningococcal A vaccinations

- Identified areas of challenge for the NPHDCA:
    - Vaccine Stock-outs
    - Lack of stable and adequate funding,
    - Persistently poor performing local governmental areas (LGAs)
    - Poor coordination of intervention activities between government and international agencies,
    - Monitoring programs for success, and
    - Lack of adequate skilled personnel.

It was decided that a work plan for the following year (2013) is to be developed for the newly established NAS Advisory Committee on Vaccines and Immunization. The first task of the Committee would be to review the major challenges affecting routine immunization in the country. The Committee also agreed that working closely with NPHCDA would be a critical factor for success of the committee's work.

INTRODUCTION

The Nigerian Academy of Science (NAS) is the foremost independent scientific organisation in Nigeria, promoting the growth, acquisition, and dissemination of scientific knowledge throughout the country. One of the ways the Academy fulfils its duties is by providing evidence-based advice on specific problems of a scientific nature to the Nigerian government, agencies, and private organisations.

Immunization is a vital component of disease prevention and control and is, therefore, an essential investment for the future. Though Nigeria has improved her immunization coverage over the last few years, challenges still abound. For example, in 2010, DPT3 coverage in the country was 69% compared to the African average of 77% (WHO-UNICEF 2012), and the under-five mortality rate stands at 143 per 1000 live births, with more than half of these occurring from vaccine-preventable diseases (UNICEF, 2012). Nigeria is also one of only three countries in the world – and the only country in Africa – that has never interrupted polio transmission despite interventions that have been successfully employed to eradicate polio in other nations.

The Global Vaccines Action Plan (GVAP) for the Decade of Vaccines (2011-2020), calls for countries to take primary ownership and responsibility for establishing good governance and providing effective immunization services to their people. In addition, it affirms that immunization against vaccine-preventable diseases is an individual, community, and governmental responsibility (WHO, 2012). To ensure that Nigeria achieves the objectives of the GVAP, NAS is establishing a Vaccines and Immunization Advisory Committee (VIAC). The overall objective of the NAS-VIAC is to assist the country in meeting Millennium Development Goals (MDGs) 4 (reducing child mortality) and 6 (combating diseases) through achieving high immunization coverage levels, and significantly reducing deaths from vaccine-preventable diseases. The committee will provide technical, impartial, evidence-based, and credible advice on vaccine and immunization issues to the Federal Ministry of Health (FMoH) and the National Primary Health Care Development Agency (NPHCDA).

The following will be the main focus of the committee :

i. Policy guidance: Review current immunization policy and strategy in Nigeria, and provide guidance on the formulation of new realistic and implementable strategies for the control of vaccine-preventable diseases through immunization.

ii. Routine immunization: Assess routine immunization performance and provide advice and guidance for the improvement and sustenance of a high

level, equitable immunization programme in Nigeria.

ii. New and under-utilised vaccines: Provide guidelines for the introduction and rational use of new and under-utilised vaccines.

iv. Monitoring and evaluation: Offer advice on the monitoring of the country's immunization programme to ensure accurate and appropriate measurement of the impact of immunization policies and interventions

ESTABLISHING A VACCINES AND IMMUNIZATIONS COMMITTEE

Before the first Vaccines and Immunization Committee meeting, the NAS secretariat prepared a slate for selecting potential committee members, covering diverse areas of expertise. It was important that the committee be multidisciplinary; with each member representing important sectors critical to the committee's ability in fulfilling its mandate.

The members nominated for consideration were selected from government, academia/research, civil society, and developmental organisations. However, their nominations were based on their individual expertise and merit, and not as representatives of their affiliated institutions. Potential members were also screened for bias and conflict of interest. So as not to deny the committee of valuable expertise due to any perceived bias or conflict of interest that may exist, it was decided that the committee would have two groups of members; core and non-core/associate members. The non-core/associate members are individuals with apparent biases or conflicts of interest, but whose contribution is considered vital to the work of the committee. They may not be invited to every committee meeting, and may be expected to recuse themselves when issues directly impacting them are being discussed at any meeting.

Potential committee members were contacted and asked to indicate their willingness to be part of the initiative. The committee is expected to exist in perpetuity, until otherwise stated by the NAS. Members will serve on the committee for renewable tenures of two years. In line with the NAS policy, committee membership is voluntary, and there will be no remuneration for members, though their cost of attending meetings will be covered by the Academy. Meetings will be held quarterly, with the NAS taking responsibility for organising and hosting all committee meetings, as well as preparing agendas and notices for meetings, and ensuring all necessary documents for discussion and/or comments are sent to committee members well ahead of the meetings.

Committee Objectives

The main objective of the committee is to provide technical, impartial, evidence-based and credible advice on vaccine and immunization issues in Nigeria, with the overall goal of improving immunization coverage in the country, and reducing the morbidity and mortality figures from vaccine-preventable diseases. Specific functions of the committee will include:

- Review the current immunization policy and strategy in Nigeria, and determine optimal, evidence-based national immunization policies.

- Provide guidance to the Federal Ministry of Health and the National Primary Healthcare Development Agency on the formulation of strategies for the control of vaccine-preventable disease through immunization, and strategies for research and development of new vaccines and vaccine delivery techniques.

- Provide guidance to the Federal Ministry of Health in the event of the constitution of a National Immunization Technical Advisory Group (NITAG) as well as provide technical services to the NITAG.

- Advise the appropriate authorities (at the national and state level) on the monitoring of the immunization programme so that impact can be measured and quantified.

The committee will be expected to come up with a short report/policy brief periodically which will be disseminated widely among relevant stakeholders.

The NAS-VIAC First Meeting

The NAS held the maiden NAS-VIAC meeting on the 15th of November 2012. The meeting was held in Lagos, and had in attendance individuals who had been invited to be members of the committee, some members of the NAS council, as well as members of other African Science academies. The open session of the meeting discussed the role of science academies in policy advice, as well as the need for the NAS to establish an advisory committee on vaccines and immunization in Nigeria at this time. There was also a presentation on the nature of immunization advisory committees. A closed session followed, which had only committee members and advisors present. At this session, the committee chairman further explained the rationale for establishing the committee and the terms of reference for the committee members. Committee members were again briefed on the importance of constituting the committee, and discussions centred on the objectives and tasks of the committee. Presentations were made on the roles national academies can play in issues of national interest and the interventions they could make in nation-building and influencing policy-making on vaccine use and immunization. The key presentation for the meeting was one on the current status (as of July 2012) of immunization in the country by Dr. Emmanuel Abanida, the Director of Disease Control and Immunization at the National Primary Health Care Development Agency (NPHCDA). He was represented by Dr. Joseph Oteri, Head of Routine Immunization/GAVI focal person at the NPHCDA. The NPHCDA is the national body responsible for vaccines and immunization in Nigeria. This presentation was important for this meeting to lay the foundation/basis for the work of the committee. The presentation, which had the most recent national immunization figures, is summarised below.

BRIEF ON NIGERIA'S IMMUNIZATION PROGRAMME (Presentation by the NPHCDA)

Background on Immunization in Nigeria

The Expanded Programme on Immunization (EPI) was established in Nigeria in 1979, targeting six diseases. To reflect national commitment and ownership of the programme, EPI was changed to the National Programme on Immunization (NPI) in 1996. Two more vaccines, yellow fever and measles were introduced later (see Table 1 for current immunization regimen in Nigeria). In 2007, the NPI was merged with the NPHCDA, where its functions are now being managed by the Department of Disease Control and Immunization.

Table 1: The current immunization regimen in Nigeria

Time of Vaccination	Type of Vaccination
Birth	BCG, OPV, Hep B
6weeks	Pentavalent* (DPT, Hep B, Hib); OPV or OPV, DPT, Hep B
10weeks	Pentavalent* (DPT, Hep B, Hib); OPV or OPV, DPT , Hep B
14weeks	Pentavalent* (DPT, Hep B, Hib); OPV or OPV, DPT, Hep B
9months	Yellow Fever, Measles

*Pentavalent vaccine containing the Hib antigen was introduced in June 2012 as a replacement for DPT and Hep B, and is currently being administered in 13 states and FCTs. Plans are in place to scale up to all states by March, 2013.

Routine Immunization Coverage Trends

There have been significant variations in the immunization coverage performance in Nigeria over the past decades, with DPT3 coverage peaking at 81.5% between 1988 and 1990, and falling to less than 25% in the late nineties (Figure 1). Current coverage figures this year, between January and July 2012, stand at 38% (Table 2 - NPHCDA, 2012).

Table 2: Routine immunization coverage performances in Nigeria as of July, 2012

Vaccine	Coverage (%)
BCG	74
MCV	72
Yellow Fever	35
DPT 3	38
OPV 3	67
Hep B3	53
TT2+	52

Source: NPHCDA, 2012.

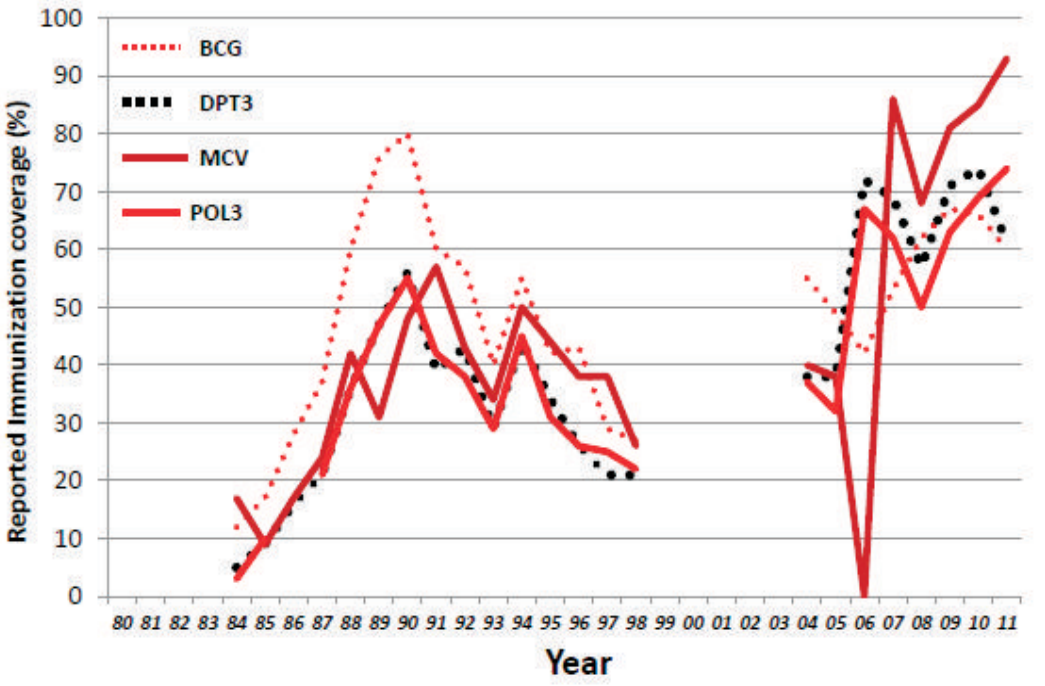

Figure 1: Immunization coverage for BCG, DPT3, Measles, and OPV3 in Nigeria from 1980-2011.
Source: Tomori, 2012.

NPHCDA Immunization Targets for 2012

The NPHCDA has set priorities for vaccines and immunizations for 2012. The top priorities on their list include:

I. Achieving 75% coverage on all vaccines.

II. Achieving a stepwise reduction in wild polio vaccine (WPV) cases until eradication is achieved in 2013, as well as reducing the number of missed children for the oral polio vaccines to less than 10% in low performing local government areas (LGAs).

III. Seeking GAVI support for Yellow fever and Measles campaigns for 2013.

IV. Carrying out campaigns for the commencement of MenAfricVac in phase two states, and achieving 80% coverage of tetanus toxoid (TT3) in campaign states.

2012 Activities on Routine Immunization

The NPHCDA has embarked on various activities throughout the country in order to meet set targets for 2012. Some of their activities included:

I. Prioritization of 414 of the existing 774 LGAs for focused intervention by states.
II. Development of routine immunization (RI) work plans for polio high risk LGAs.

- Update existing micro-plans using supplementary immunization activity micro-plans;
- Ensure vaccine availability; and
- Implement and monitor the 1-2-3 strategy, where facilities will conduct one fixed session per week, two outreach sessions per month, and three supportive supervision visits by LGA.

III. Regular data quality self-assessments (DQS), nationally, and quarterly by states.
IV. Monthly review meetings of local immunization officers in the states.
V. Monthly RI and logistic feedback shared with stakeholders.
VI. Organization of the Maternal Newborn, Child Health Week (MNCHW) in May and November 2012.

VII. Sensitization for the engagement of private service providers in poor performing states.

VIII. Introduction of new vaccines. The pentavalent vaccine was rolled out in June 2012, in 13 states and FCT with plans to scale up to 7 additional states by January 2013, and the remaining 16 states by March of the same year. GAVI has given approval to introduce Pneumococcal Conjugate Vaccine (PCV) in phases from 2013.

Specific Immunization Interventions

Polio Eradication Initiative

Nigeria remains one of only three countries in the world yet to interrupt endemic polio and achieve polio eradication. The country is responsible for 95% of the polio burden in Africa. Between January 1 and November 9 2012, Nigeria reported 101 cases of wild poliovirus (WPV) in eleven states. For comparison, in 2011, 50 WPV cases were reported in eight states within the same time frame. Katsina, Kano, and Kaduna states accounted for more than 60% of these cases in 2012. Six vaccine-derived polioviruse type 2 (VDPV2) cases were reported in two states as at 9th of November 2012, and 32 cases were reported in nine states for the same period in 2011.

Steps taken in 2012 for achieving polio eradication include:

I. Launching the presidential task force on polio eradication;
II. Working through bottom-up micro-plans with verification by community leaders and technical officers;
III. GIS mapping in high risk/poor performing states, such as Kano, Jigawa, Katsina, Sokoto, and Zamfara;
IV. Improving team remuneration; and
V. Increasing local and international capacity building efforts.

Yellow Fever, Measles and MenAfricVac Plans

Accelerated disease control programmes have been set in place in 2012 for Yellow Fever, Measles and MenAfricVac vaccines.

Nigeria has the largest population at risk of infection with yellow fever on the African continent, with an estimated 2008 population of nearly 101.3 million people at risk for yellow fever infection. The set goal is to prevent risk of outbreaks by immunizing 80% of the at-risk population. This is to be achieved by vaccinating 90% of infants between the ages of 9 and 23 months, and vaccinating 66 million people between the ages of 9 months and 45 years between 2013 and 2016.

A measles follow-up campaign is being planned for 2013, and the objectives of this plan are to provide a second dose of the measles vaccine integrated with the OPV in children between 9 and 59 months (in 2013 and 2016), irrespective of their previous measles vaccination status. Other objectives include strengthening the health system in the broader context – staff capacity building and sustenance, micro planning at LGA, ward, health facility levels, outreach services, cold chain, and other systems, supply chain, waste management etc, as well as to strengthen the pharmaco-vigilance system for monitoring adverse events following immunization (AEFI). They also hope to be able to detect disease cases through field investigation and laboratory support of vaccine preventable diseases (measles, yellow fever, meningitis, etc.) along the system established for polio surveillance.

The Meningococcal A conjugate vaccine (MenAfricVac), was introduced in Nigeria in 2011

and coverage was planned in two phases: Phase one covered five states, Katsina, Jigawa, Gombe, Bauchi and Zamfara , with a reached population of over 15 million people aged one to twenty-nine years (NPHCDA,2012). Phase two will commence in December 2012, in Kano, Yobe, Borno and Sokoto, with a target population of 16.7 million people.

Major Challenges of the NPHCDA in 2012

The NPHDCA faces some major challenges in achieving set goals, including the following:

i. **Vaccine stock-out:** This has been a major challenge in 2012, and has been the major reason for poor immunization coverage percentages.

ii. **Funding:** Financing service delivery has been challenging as not enough funds are available for routine immunization, and amounts captured in the budget are often not released on time.

iii. **Vaccine cold-chain standard:** The transfer of vaccines from national to state level and beyond is a major challenge.

iv. **Persistently poor performing LGAs:** Their inadequate performance can be attributed to the poor links that exist between the health services and the communities in Nigeria. There are difficulties experienced in reaching some settlements due to the large land mass of the country as well as transportation and staffing issues. Also, community acceptance of vaccines, particularly the polio vaccine, remains a major challenge.

v. **Poor coordination of intervention activities:** There have been many immunization interventions at the national, state, and local government level by local and international donor agencies. However, there is no central coordination of these activities resulting in duplication of effort and in some cases confusion.

vi. **Monitoring for action:** Data collection, reporting, archiving, and analysis for further action/intervention have been challenging due to unreliability of data received at all levels.

vii. **Personnel:** A high proportion of the personnel administering the vaccines, especially in the rural and hard-to-reach areas, do not possess the necessary skills set needed for vaccine administration. There is also inadequate supervision of immunization activities nationwide and insufficient opportunities to learn from better performing staff using adult learning approaches such as peer-to-peer mentoring.

CONCLUSION- THE WAY FORWARD

The committee thanked the NPHCDA for an honest presentation of the current immunization status in the country. It further emphasized the need for constituting a vaccines and immunization advisory committee to those present, and the work cut out for this committee. The advantage of having such a committee hosted by a respected national institution such as the Nigerian Academy of Science was also highlighted, and this would also ensure that the committee's work is evidence-based and unbiased.

It was decided that a work plan for the following year (2013) be developed for the newly established NAS Advisory Committee on Vaccines and Immunization. The first task of the committee would be to review the major challenges affecting RI coverage in the country. The committee also agreed that working closely with the NPHCDA would be a critical factor for the success of the committee's work. Other factors deemed necessary for the success of the committee's work include

- Working with the Federal Ministry of Health, and providing them with regular updates on the committee's work
- Consistency and dedication from every member of the committee
- Outcomes of committee work be widely disseminated

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The Nigerian Academy of Science
PMB 1004, University of Lagos Post Office, Akoka,Yaba, Lagos, Nigeria
Tel: (+234) 1-8508381
Website: www.nas.org.ng
Email: admin@nas.org.ng

8A, Ransome Kuti Road
University of Lagos
Lagos, Nigeria

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