

EpiVacPlus: Improving the Performance of Immunization Programs through On-the-job Training and Technical Support

Paris Dauphine University's collaboration with Agence de Médecine Préventive (AMP) to develop the managerial skills of District Medical Officers in Western Africa.



Source: Agence de Médecine Préventive (AMP)



Source: Agence de Médecine Préventive (AMP)



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Introduction about the Partners

Agence de Médecine Préventive (AMP)

Founded in 1972, the Agence de Médecine Préventive (AMP) is a nonprofit organization dedicated to promoting preventive medicine and public health worldwide.

AMP collaborates with diverse public- and private-sector partners to support countries in developing sustainable and effective immunization policies and strengthening their public health infrastructure.

Our work focuses mainly on the following activities:

- Conducting field-based research in vaccinology and epidemiology
- Providing technical and logistical support to strengthen immunization services
- Supporting the development of sustainable health policies and systems
- Developing human resources for health

AMP mission

AMP is dedicated to improving the health and well-being of those most in need across the globe. Along with our public- and private-sector partners, we aim to:

- Enhance scientific knowledge in support of evidence-based health policies
- Support the introduction and use of vaccines
- Strengthen immunization service delivery and logistics
- Develop human and institutional capacity through tailor-made training programs
- Promote innovation in field vaccinology

AMP values

Our core values reflect what is most important to us as an organization. They shape our culture and define how we act on a daily basis.

Impact—Making a measurable difference in the field

Collaboration—Creating lasting relationships built on trust with national, regional, and international institutions and other stakeholders

Excellence—Striving to meet and deliver the highest standards of quality

Integrity—Respecting the needs and interests of our stakeholders and committing to the highest ethical and scientific research standards

Innovation—Supporting the development and implementation of pioneering technologies and methodologies that are contextually appropriate.

Université Paris Dauphine

Université Paris Dauphine is a leading teaching and research institution in France. It operates campuses in Paris, in Tunis and in London. More than 500 professors and researchers work for this institution, along with 450 administrative staff and 1500 part time professional lecturers. Considered a "Grand Etablissement" since 2004 and EQUIS accredited since 2009, Dauphine is recognized as one of the premier European teaching and research universities in the organization and decision sciences.

Today, Dauphine's three strategic objectives are:

- Building strategic academic partnerships with prestigious French institutions notably under the PSL initiative for excellence,
- Strengthening Dauphine's international perspective,
- Reinforcing and diversifying our financial resources.

Dauphine is a founding member of the Paris Sciences and Letters (PSL) initiative for excellence.

Executive Summary

The vaccination coverage in Africa remains fragile. This region fell well short of the WHO targeted 80% of countries achieving at least 80% coverage nationwide. One major reason explaining why African countries lag behind other countries in terms of vaccination coverage is the limited effectiveness of the different National Public Health Organizations.

AMP (Agence de Médecine Préventive), a NGO founded in 1972, has been active for more than 40 years on immunization and vaccination in Africa. AMP realized in the 1990's that the biggest problem in Africa to succeed in immunization and vaccination was not the access to vaccines but the weaknesses of the delivery system.

AMP has thus designed the EpiVacPlus Program. This program targets the key medical actors in Africa for vaccination: the District Medical Officer. To enable District Medical Officers to implement effective practices in vaccination, AMP decided in 2002 to partner with Paris Dauphine University to deliver a specific one-year Training Program in Public Health and Management combining courses with on-site learning and supervision.

The operating principles for EpiVacPlus included:

- Annual funding from the Agence de Médecine Préventive (AMP) for the Program,
- National Health Authorities from the participating West African countries propose candidates (mostly District Medical Officers) for the Program,
- Representatives of Agence de Médecine Préventive and Paris Dauphine University would do a selection among the proposed candidates. Candidates being selected would then become trainees in the Master 241 EpiVacPlus from Paris Dauphine University,
- A one-year learning program for the trainees with distant learning and on-site supervision.

EpiVacPlus' learning method clearly emphasizes on-site learning. This on-site approach is possible through distant learning as the trainees continue their medical duties and through on-site supervision three times a year. This on-site approach follows one-month full time training with courses in vaccinology, Public Health Economics and management in Ouidah (Benin). The supervision mixes a blend of peer and expertise review and its design minimizes the disruption to the Medical Officers availability for their medical activities and at the same time favours an authentic, practical, field-rich approach. This approach is directly inherited from the Agence de Médecine Préventive's culture in Africa, a hands-on approach.

From 6 countries that initially operated EpiVacPlus, 11 countries are now implementing the Program. Since 2002, 556 trainees have joined the Program and the EpiVacPlus Community of Practice is made of 320 Program's trainees. The vaccination coverage is significantly better in EpiVacPlus Districts than in non EpiVacPlus Districts.

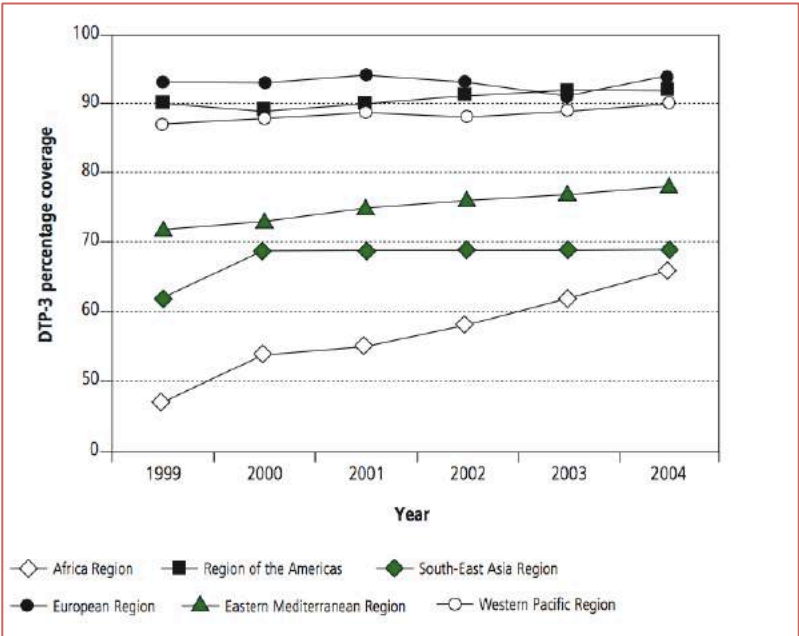
EpiVacPlus is a multi actors initiative with actors focusing for instance on vaccination technique training. Its results must be understood as the results from all these actors' efforts. At the same time, the efficient partnership between Agence de Médecine Préventive and Paris Dauphine University has demonstrated that management practices, particularly Human Resources management, are key to success in immunization and vaccination.

The Challenge

Vaccines are the most inexpensive means of improving health and lowering illness and mortality caused by infectious diseases in the developing world. The World Health Organization’s (WHO) has launched several programs that focused on the six major diseases of childhood (diphtheria, pertussis, tetanus, polio, measles, and tuberculosis). These programs succeeded in dramatically raising immunization coverage in developing countries from 5% in the 1970s to more than 80% of the birth cohort in the 1990s (Pang, 2009).

The WHO analysis specifically focuses on vaccination in Africa as the immunization coverage on the continent lags behind the treatment on other continents. Table 1 below illustrates the difference in vaccination coverage.

Table 1: Diphtheria – Tetanus – Pertussis 3 (DPT-3) percentage coverage by WHO regions, 1999-2004



Source: World Health Organization (WHO)

Yet, in spite of significant effort and advances, the vaccination coverage in Africa remains fragile. This region fell well short of the targeted 80% of countries achieving at least 80% coverage nationwide (Arevshatian & al., 2007).

Current vaccination achievements in Africa and further progress remain particularly susceptible to economic constraints. For instance, the different economic crises in various parts of the world in the 1990s had strong negative effects on vaccination coverage (Arevshatian & al., 2007). Vaccination progress has also relied on the large increase in donor funding and the sustainability of this funding cannot be taken for granted. Vaccination in Africa has to increasingly take into account the economic performance and the efficiency of the programs to

guarantee further progress. An example: the Research & Development costs of the different vaccines have risen in the last decades; thus, the cost of vaccination programs has increased, as well as the cost of ineffectiveness of the vaccination programs.

One major reason explaining why African countries lag behind other countries in terms of vaccination coverage is the limited effectiveness of the different National Public Health Organizations. Effective public health interventions that could contribute to a reduction in the high disease burden exist, but weak health systems mean coverage of interventions remains low. With country-to-country variations, this weakness of health systems often relates to leadership and governance; staffing; medical products, vaccines and technologies; information; financing; and service delivery (WHO, Regional Office for Africa).

AMP (Agence de Médecine Préventive) was founded in 1972 with the mission to help countries prevent and control endemic and vaccine-preventable diseases. AMP supports countries in assessing and overcoming major barriers to their immunizations services. AMP realized in the 1990's that the biggest problem in Africa to succeed in immunization and vaccination was not the access to vaccines but the weaknesses of the delivery system (poor organisation, inefficient supply-chain, important waste in vaccines). The experience provided over 40 years of intervention and support, particularly in Africa, has also forged AMP's philosophy: action and assistance need to be conducted and implemented with direct contact to populations, with and for field medical actors.

AMP has thus designed and developed the EpiVacPlus program. This program targets the key medical actors in Africa for immunization and vaccination: the District Medical Officer.

EpiVacPlus aims to address the human resources for health crisis by developing and implementing innovative and high-quality training programs combining classroom and distance learning, professional supervision, and research support. These programs are implemented through professional and academic partnerships.

Source: Agence de Médecine Préventive (AMP)

AMP's belief, based on its field experience in developing countries - particularly in Africa - is that the efficiency of the immunization and vaccination directly depends on good management in the district medical structure through the District Medical Officer.

To enable District Medical Officers in Africa to implement effective practices in vaccination and immunization, AMP decided in 2002 to partner with Paris Dauphine University to deliver a specific one-year Training Program in Public Health and Management combining courses with on-site learning and supervision.

The Commitment

Agence de Médecine Préventive identified the District Medical Officer as the key target to succeed in improving immunization and vaccination. Agence de Médecine Préventive and Paris Dauphine University believed that the management practices of the District Medical Officers could be improved through an appropriate Training initiative. They also believed that such an initiative would leverage four areas:

- Human Resources Management at the District Medical Office,
- Data and Information Management (epidemiology, data quality)
- Financial Management at the District level,
- Supply Chain Management and particularly cold chain management for the vaccines.

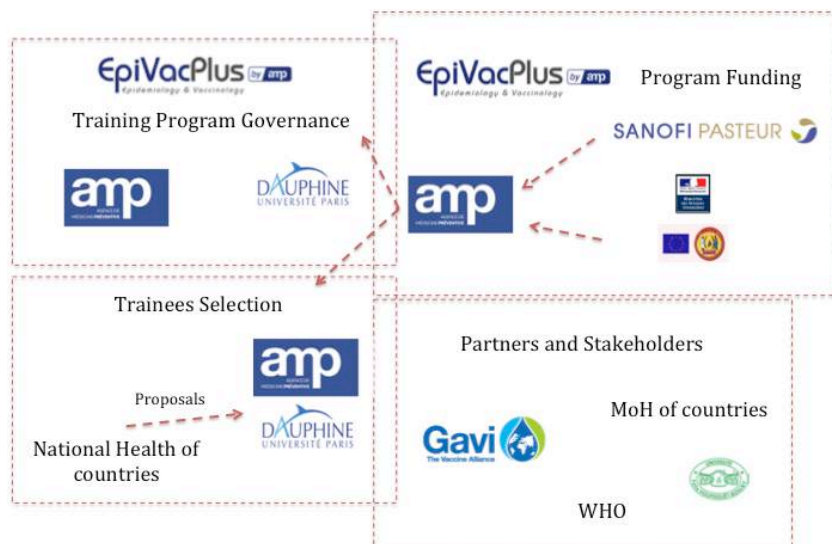
The District Medical Officer is a Public Health worker. S/he is usually responsible for a team: a treasurer, an accountant, medics and nurses. S/he sometimes has doctors working under his/her authority. S/he usually works in a rather important Health Center and when there is a district hospital in his/her zone, there are several doctors working in the hospital under his/her supervision. A District Medical Officer is thus managing the Public Health of the district. In the health field, a District Medical Officer is simultaneously a doctor and a manager. For instance, some of his/her managerial tasks are related to planning and organizing a vaccination campaign or an epidemiologic survey.

Agence de Médecine Préventive thus connected with its international partners and the different National Health Authorities to launch the Program foundations. These initial contacts succeeded as the Program was designed in 2002.

The operating principles for EpiVacPlus - defined in 2002 and 2003 during two seminars in July 2002 and March 2003 at Hotel Nord Sud in Grand Bassam, Ivory Coast - included:

- Annual funding from the Agence de Médecine Préventive (AMP) for the Program,
- National Health Authorities from the participating West African countries would propose candidates (mostly District Medical Officers) for the Program,
- Representatives of Agence de Médecine Préventive and Paris Dauphine University would do a selection among the proposed candidates. Candidates being selected would then become trainees in the Master 241 EpiVacPlus from Paris Dauphine University,
- Agence de Médecine Préventive (AMP) would fund the education fees, transportation costs and per-diem,
- A one-year learning program for the trainees with distant learning and on-site supervision.

The roles and responsibilities among the EpiVacPlus Program different actors are visible in the diagram below.



The initial partnership between Agence de Médecine Préventive (AMP) and Paris Dauphine University was at the same time strong, well balanced but also rather uncertain about its future. Individuals from both organizations shared a common belief about the importance of management as an enabler for improvement in immunization and vaccination. Their areas of expertise were obviously complementary: field know-how, contacts with the national Public Health authorities, contacts with international partners and funders for AMP and competencies in management and Public Health Economics for Paris Dauphine University. But at the same time, the chances of success were rather uncertain: this initiative targeted the local actor and not the national actor and it was the first initiative to focus on management and efficiency rather than budget granted and number of vaccines' doses available.

This global initiative was thus complex. It was even more complex as it was designed from its early conception as a multi-countries initiative. This multi-countries paradigm is pertinent in vaccinology, as the human contamination has never been stopped by national frontiers.

Agence de Médecine Préventive (AMP) committed to the EpiVacPlus Program funding (approximately one million USD per year). This commitment over the years from AMP has been key to the implementation and the success of this Program.

'When we designed the EpiVacPlus Program, although everything was not formalized, we shared the conviction that such an action-learning initiative, mixing vaccinology, Public Health Economics and management could and would make a real difference.'

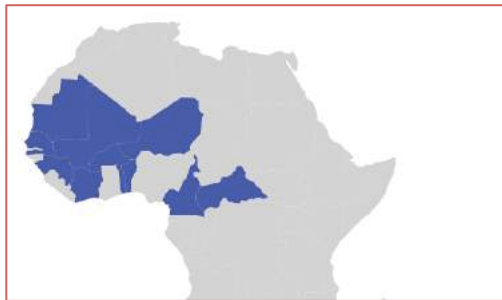
Anne de Blignères, initial EpiVacPlus Program coordinator for Paris Dauphine University

The Learning & Development Initiative

EpiVacPlus is a one-year training degree program in Applied Vaccinology and Management of Immunization Systems that is mainly targeted at District Medical Officers. In addition to specific knowledge in Applied Vaccinology provided to the trainees, the program provides fundamental and applied knowledge in Economics and Management of Public Health in Developing Countries. Its aim is to improve immunization systems, particularly at the district level, by strengthening participants' technical and managerial skills. The program's priority is to target Medical Officers from French-speaking sub-Saharan African countries, delivering a Master 2 degree from Paris Dauphine University for the trainees who graduate from the program.

The Program Design and its Delivery Structure

The design of EpiVacPlus takes into account the daily life of District Medical Officers in the different West African countries. These Medical Officers are overworked: a District typically includes 300,000 to 400,000 people and it spreads out over an immense geographical surface. The design of EpiVacPlus is also intended for a plurality of countries. It currently covers 11 West African countries (see map below of the countries that are part of the program).

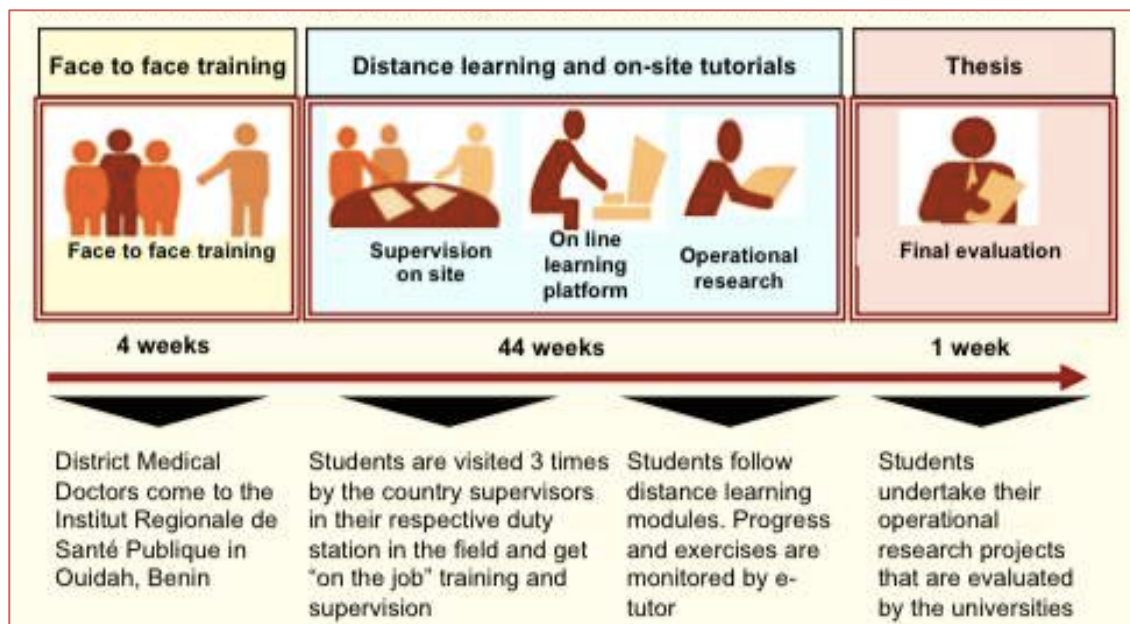


Source: Agence de Médecine Préventive (AMP)

Based on these different constraints, the design of EpiVacPlus favored initial group training in one central West African location for only four weeks where trainees would take the initial courses of the program followed by practical and on-site learning and tutoring. This design favors cost reduction, and provides efficiency without removing the District Medical Officers from their primary activity.

Ouidah (Benin) was chosen for the central location: the courses were taught at the Regional Institute of Public Health; the World Health Organization (WHO) manages this campus.

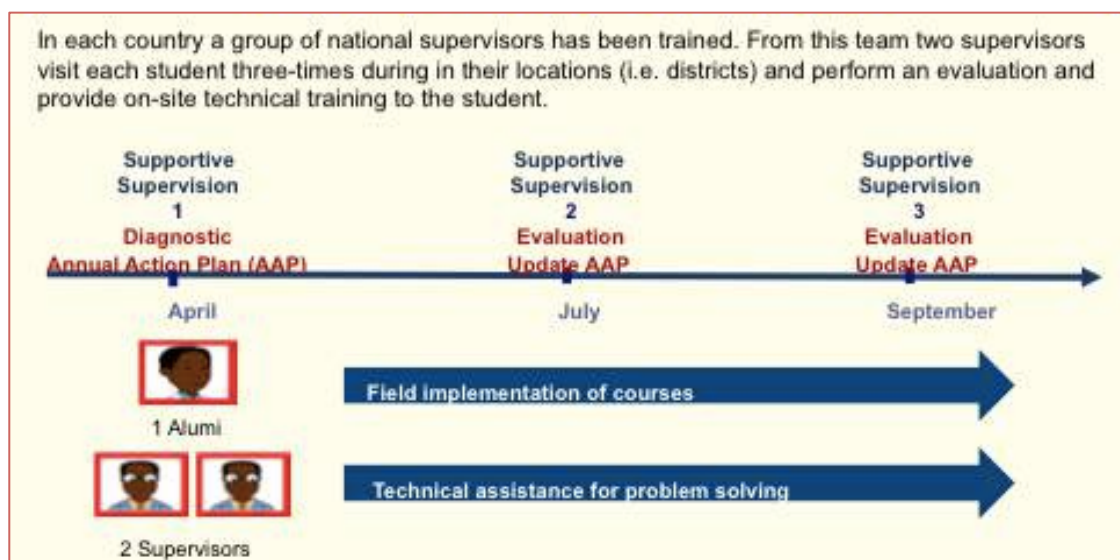
Consequently, for the District Medical Officers trained in the program, most of their training activities (eg learning, mentoring) take place on-site. Table 2 below illustrates the specificity of the delivery method.



Source: EpiVacPlus

The Learning Methods and the Learning Environment

EpiVacPlus' learning method clearly emphasizes on-site learning. This on-site approach is possible through distant learning as the trainees continue their medical duties and through on-site supervision three times a year. Table 3 below highlights the on-site learning process.



Source: EpiVacPlus

Another specificity of the learning method developed for EpiVacPlus is its supervision approach: a blend of peer and expertise review. This original approach results from a supervisors' team – usually three people - composed of

different profiles: typically one alumni from the program (thus a District Medical Officer) and two experts, usually one AMP member and one academic. Three times a year, this multi-profile team of supervisors will spend three days on-site with the trainee, assess and review his/her managerial skills and epidemiologic processes. The main areas for supervision are: Human Resources Management, Data and Information Management, Financial Management and Supply Chain Management.

Thus, the supervision design minimizes the disruption to the Medical Officers availability for their medical activities and at the same time favours an authentic, practical, field-rich approach. This approach is directly inherited from the Agence de Médecine Préventive’s culture in Africa, a hands-on approach.

The last specificity in terms of the learning method is its content and the distant learning process. This learning process contains a risk of lower than expected implication for the trainees. To reduce this risk, the audio – video tutorial (on a CDs format) content uses mandatory question quizzes in order to progress to the next chapter. It also relies on e-tutoring for some specific parts of the distant learning program.

The Selection Methodology for the Trainees

The National Health Authorities from the different countries involved in the program are responsible for proposing candidates for the program. Representatives from Paris Dauphine University, the Agence de Médecine Préventive (AMP) and the World Health Organization finalize the selection process of the applicants.

The quantitative selection rate is usually of one trainee out of two applicants.

The Program Indicators and the Learning Measurements

The program builds on a logical progression of the trainee’s knowledge and implementation of this knowledge. The different measurements designed at each stage of the Program check this progression. Table 4 below summarizes the measurements at each phase.

Program Phase	Learning Measurement	Indicators
Initial Management courses in Ouidah	Comprehension	Question quiz, Written assignment or Jury
Distant learning	Comprehension	Question quiz
Supervision	On-the-field operational implementation	Conformity to pre-defined check-list
Thesis	Capitalization of experience and knowledge progression	Success or fail evaluation

The Business Impact

This initiative, which aims to improve the immunization programs in Western Africa, has a 13-year record of activity and has thus clearly visible results. These results can be assessed at four different levels: vaccination coverage (Public Health impact), managerial efficiency at the Medical Districts, vaccination research and Public Health management knowledge, and the improvement of District Medical Officers' vaccination and managerial skills.

We also want to highlight some specific Program results or characteristics. The Program has been resistant to political crisis in several countries participating EpiVacPlus (eg Ivory Coast). It has also succeeded into more countries than initially expected: 6 countries were initially involved and 11 countries are nowadays operating EpiVacPlus.

> Results in terms of improved vaccination coverage, which was the ultimate initial objective

The Business Impact of EpiVacPlus is clearly visible as part of AMP governance, which must as a non-profit organization show results and achievements to secure its resources.

The statistics collected from the different Medical Districts in the countries where EpiVacPlus has been implemented show very strong vaccination coverage improvement in the EpiVac Medical Districts (districts where the District Medical Officers have been EpiVac trained).

These results are shown below in two different tables (5 and 6): Table 5 showing that the best vaccination coverage is found in EpiVac Medical Districts and Table 6 showing that the lowest vaccination coverage is found in non EpiVac Medical Districts.

	Districts EPIVAC (n= 345)	Non EPIVAC Districts (n= 377)	Prevalence ratio	Confidence interval 95%	P value
Coverage Penta 1 \geq 80% (n=577)	307	270	3,20	[2,13 – 4,79]	$< 10^{-3}$
Coverage Penta 3 \geq 80% (n=501)	273	228	2,47	[1,77 – 3,45]	$< 10^{-3}$
Coverage VAR \geq 80% (n= 435)	233	202	1,80	[1,33 – 2,43]	$< 10^{-3}$
Coverage VAT 2+ \geq 80% (n=315)	172	143	1,62	[1,20 – 2,18]	$< 2.10^{-3}$
Drop out rate Penta 1/3 \leq 10% (n=452)	236	216	1,61	[1,18 – 2,18]	$< 3.10^{-3}$

Source: EpiVacPlus, Period 2002-2010

Table 5 takes into account the vaccination coverage superior to 80% of the total target population (children). It records four different vaccination indicators: Penta 1, penta 3, VAR and VAT. Penta vaccination (Pentavalent vaccine, against 5 diseases : Haemophilus Influenza type B, whooping cough, tetanus, hepatitis B and

diphtheria), VAR vaccination (against measles) and VAT vaccination (against TT, tetanus toxoid). Penta 1 refers to the first dose of the Penta vaccine and Penta 3 refers to the third dose of the Penta vaccine.

For all four vaccination indicators tracked, Epivac Districts have better results compared to non Epivac Districts.

	Districts EPIVAC (n= 345)	Non EPIVAC Districts (n= 377)	Prevalence ratio	Confidence interval 95%	P value
Coverage Penta 1 < 50% (n= 24)	0	24	0,04	[0,01 – 0,28]	< 10 ⁻⁴
Coverage Penta 3 < 50% (n= 38)	4	34	0,11	[0,04 – 0,33]	< 10 ⁻³
Coverage VAR < 50% (n= 56)	15	41	0,37	[0,20 – 0,68]	< 3.10 ⁻³
Coverage VAT 2+ < 50% (n=135)	46	89	0,49	[0,33 – 0,73]	< 10 ⁻³
Drop out rate Penta 1/3 > 10% (n=270)	109	161	0,61	[0,45 – 0,84]	< 3.10 ⁻³

Source: EpiVacPlus, Period 2002-2010

Table 6 takes into account the vaccination coverage inferior to 50% of the total target population (children). It records the same four different vaccination indicators as the first table. It underscores that non Epivac Districts have less effective results than Epivac Districts.

> Results in terms of managerial efficiency at the Medical Districts

The principal managerial impact of the Program can be observed and monitored in the Human Resources Management at the District level. Human Resources Management are the main component of the three supervisions that are implemented for each trainee in the Program. Some HR activities or HR variables (Training of the different medical actors at the District level, effective Motivation of the different medical actors, effective job descriptions, effective use of the work planning) are systematically checked. The compliance (from the first supervision to the third supervision) to these requirements is more than 70%.

> Results in terms of vaccination research and Public Health management knowledge

In the context of the EPIVAC program, participants conduct translational research on immunization issues and other Public Health priorities in the districts for which they are responsible.

These studies, which are carried out with the support of program supervisors and trainers, are part of operational research theses that students present to an international jury at the end of the program.

Reports based on supervision data are also developed. They draw on the supportive supervised visits to districts (meta analysis) on topics such as: service delivery, logistics, supply and quality of vaccines, advocacy and communication,

management, sustainable funding, and capacity building of human resources and institutions.

Over the years of the EpiVacPlus program, a very consistent body of knowledge has been developed. This knowledge is based on the 545 Academic studies that the trainees have produced. It is also based on the 1921 Supervision reports that have been produced and made available.

Table 7 below provides examples of themes that were developed through Academic studies and through the Supervision reports.

Academic studies	Supervision reports
Themes such as: <ul style="list-style-type: none"> • Vaccination programs and vaccination efficiency, • Public Health Policies at the district level, • Community founding, • Monitoring and evaluation techniques. 	Themes such as: <ul style="list-style-type: none"> • Cost and budget of vaccination programs (including processes and tools to be implemented), • Human Resource Management at the district level, • Logistics and equipment management (eg cold chain management for the vaccines), • Techniques of information and communication towards the population targets.

> Results in terms of District Medical Officers vaccination and managerial skills improvement

Since 2002, 556 District Medical Officers (or other Public Health profiles) have been trained in the EpiVacPlus program. Among these 556 trainees, 545 have obtained their Diploma (98% of the trained population).

Among the District Medical Officer population that was trained, 320 trainees (56%) have joined the EpiVacPlus network and contribute to the development of the EpiVacPlus program and to its Community of Practice (CP).

One individual consequence for the District Medical Officers (DMO) following their participation in the program has resulted in promotions within their National Health Organization. Depending on the countries, between 10% and 15% of the DMO have been promoted.

In addition to these trainees, 64 national supervisors have also been trained through the program, in areas such as Fundamentals of Vaccination, Public Health Management and Techniques of Supervision Training. These supervisors did not receive a diploma but they received an EPIVAC Participation Certificate.

The testimonials below from two Medical Officers, Dr. Fanta Niare Dembele and Dr. Raymond Bernard Pallawo, highlight the progress of their managerial skills during the program.

Fanta Niare Dembele, MD, Mali
Epivac class of 2003



Support from the District Medical Officer

For Dr. Niare Dembele, EPIVAC was a positive experience from start to finish. This was due, in part, to the fact that she had the full support of the District Medical Officer. “He participated in all supervisions and provided his insights on immunization challenges at district level.” These collaborative sessions were critical for the development of Dr. Niare Dembele’s operational research thesis, which addressed wasted vaccine doses.

Improving my managerial skills

Several years down the road, Dr. Niare Dembele says her experience in EPIVAC has been valuable in many ways. “On a managerial level, I had no formal training. The program was a great asset in improving my management, supervision, and organizational skills—not to mention my overall understanding of immunization.” This new skill set has enabled to take on several challenging positions. Immediately following EPIVAC, she led a training program for trainers in the context of the introduction of Pentavalent vaccine.

Raymond Bernard Pallawo, MD, Cameroon
Epivac class of 2008



Getting a Handle on Immunization and Management Issues

Dr. Pallawo says he learned many valuable lessons through EPIVAC, both inside and outside the classroom. “I had some knowledge of immunization because I had received training during national immunization days (NIDs),” where he was often a supervisor. “But, regarding the technical aspects—types of vaccines, vaccine manufacturing, vaccine ordering, cold chain management, communication for immunization services, logistics, human resources management—I knew nothing.” Thanks to EPIVAC, Dr. Pallawo received training on immunization systems as well as management principles such as trust, delegation, and employee recognition.

Applying Lessons Learned to Address Vaccine Wastage

Dr. Pallawo quickly applied lessons learned in his district. He established new document procedures, which improved activity reporting and evaluation. For his operational research, he decided to tackle vaccine wastage. “In our district, indicators were not very good,” he said. “I saw that we had problems with vaccine wastage in particular so I set up a plan to reduce losses. The supervisor helped me a lot in defining the topic especially in the beginning, as we didn’t know what to address. Each month we talked about it.” Within a short period of time, Dr. Pallawo’s initiatives largely contributed to solving the problem of vaccine wastage in his district.

Concluding Remarks

EpiVacPlus was implemented in 2002 and it counts 11 West African countries within the program and 12 graduating classes of District Medical Officer trainees. Its results are impressive: more than 60% of the Medical Districts from the 11 countries are EpiVacPlus trained, with vaccination coverage in these Districts superior to 80%. EpiVacPlus has thus immunized 6 million children who would have otherwise been left unprotected. (Source: estimation from Agence de Médecine Préventive, AMP)

EpiVacPlus' success is based on combining District Medical Officers' skills and competencies with their Public Health and management processes. It has both a management dimension that is clearly visible in financial terms. Taking into account a reference of 60 USD for a fully immunized child (Le Gargasson & al., 2015) and a reference of 0,5 million children vaccinated yearly as a direct result from EpiVacPlus, in comparison to EpiVacPlus' annual funding of 1 million USD through the AMP, its cost to effect ratio is 1 to 30.

We would also like to highlight the fact that EpiVacPlus results should not be seen as the result of a sole management oriented approach, through the Agence de Médecine Préventive – Paris Dauphine University partnership. Rather, the EpiVacPlus results rely a great deal on the joint efforts of its various stakeholders and partners, particularly through the partnerships developed by Agence de Médecine Préventive with West African Universities in epidemiology and vaccination techniques that directly contribute to the District Medical Officer's efficiency and to EpiVacPlus results. Worthy of particular mention is the contribution of the University of Cocody (Abidjan, Ivory Coast) that is responsible for the MIVA Master 2 in Applied Vaccinology, part of the EpiVacPlus program.

EpiVacPlus is currently seeking opportunities for further development. Contacts have been made in some English speaking countries (eg Nigeria), raising new opportunities but also new challenges. The implementation of these new opportunities would likely have an impact on the design of the program, partner searches, as well as analysis of national approaches.

Another opportunity for EpiVacPlus is to strengthen the efficiency of the West African national Public Health systems. EpiVacPlus has been acting at the local level. It now has an opportunity to act at the local – national level. To succeed, the EpiVacPlus partners need to convince the national authorities, based on EpiVacPlus on-the-field results, to engage in a more formal and systematic deployment at all levels of the operational and managerial District Medical Officers practices that have been achieved. Such an initiative needs the active involvement of the national authorities in collaboration with the local actors. Its implementation would at the same time prevent any decrease of EpiVacPlus current results and it would also provide opportunity for further improvement.

Appendices

1. Video in English underscoring the importance of the distant learning for EpiVacPlus trainees and the process of the e-tutoring

<http://amp-vaccinology.org/video/2014-11-04/qu-est-ce-que-le-e-tutorat>


2. Audio in French from doctors Stoeckel, Aplogan and da Silva (all from Agence de Médecine Préventive, AMP) explaining on Radio France International the current situation of EpiVacPlus


<http://amp-vaccinology.org/video/2012-04-06/3rd-epivacnet-technical-conference>

3. Analytical table summarizing country by country, the current numbers of District Medical Officers trained and the contrast in numbers among Medical Districts between EpiVacPlus covered Districts and non EpiVacPlus Districts

	Training period	DMO Trained	Total Districts	Districts EPIVAC
Benin	2002-2012	65	77	57
Burkina Faso	2002-2012	65	63	63
Cameroon	2007-2012	31	179	31
Central African Republic	2008-2012	22	24	12
Ivory Coast	2002-2012	71	83	54
Guinea	2008-2012	22	38	20
Mali	2002-2012	58	59	36
Mauritania	2004-2007	25	53	24
Niger	2004-2007	31	42	30
Senegal	2003-2012	56	69	45
Togo	2003-2012	50	35	35
Total	2002-2012	496	722	407

4. Extracts from the supervision form

	
Outils de la supervision <ol style="list-style-type: none"> 1. Guide de supervision 2. Guide de visite des formations sanitaires 3. Trame d'état des lieux au niveau national 4. Liste des documents de référence du PEV au niveau national 5. Directives et trame pour l'identification des forces et faiblesses 6. Fiche thématiques 7. Trame de rapport de supervision 8. Directives et trame d'analyse des rapports de supervision 9. Guide de notation des stagiaires 10. Questionnaire d'évaluation de la supervision et des superviseurs 	Contenu <ul style="list-style-type: none"> - Etat des lieux et performances de la zone - Gestion des vaccins - Sécurité vaccinale - Mobilisation sociale - Surveillance des maladies cibles du PEV et des MAPI - Gestion des équipements - Budget - Gestion des ressources humaines - Financement du PEV
Techniques de supervision <ul style="list-style-type: none"> - Observation - Entretien - Questionnaire - Revue documentaire - Conseil/intervention 	

		
Durant les 3 supervisions in situ de chaque stagiaire, et conformément aux objectifs de la supervision, les superviseurs et le stagiaire procèdent aux activités suivantes classées par ordre chronologique :		
	Supervision 1	Supervision 2 & 3
Visite aux autorités	X	Seulement si nécessaire
Présentation des TDR et finalisation du programme de travail	X	X
Analyse de la situation (présentation par stagiaire, approfondissement par superviseurs et stagiaire)	X	X
Actualisation de l'état des lieux/analyse de situation		X
Visite d'une formation sanitaire	X	X
Elaboration du Plan de Résolution des Problèmes (PRP)	X	
Evaluation du niveau de réalisation du PRP		X
Actualisation du PRP		X
Identification d'un thème à développer lors de la supervision suivante	X	X (sup 2 uniquement)
Appui au stagiaire dans l'utilisation technique des CDROM de la Formation à Distance (FAD)	X	X
Appui au stagiaire dans l'élaboration de son Mémoire de Recherche Opérationnelle (MRO)	X	X
Restitution de la supervision avec le stagiaire et l'ECD	X	X
La visite d'une formation sanitaire contribue à la réalisation des activités listées ci-dessus, et en particulier à <i>i)</i> l'analyse de la situation, débouchant sur <i>ii)</i> l'élaboration du PRP, et à <i>iii)</i> l'évaluation de la réalisation du PRP, pouvant conduire à son actualisation.		

References

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