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SCALING-UP COMMUNITY HEALTH IN MADAGASCAR: PRIORITIZATION AND COSTING OF THE HEALTH SERVICE PACKAGES

Photo by USAID Mikolo / S. Rakotoniaina

Background

Despite significant progress towards achieving its Millennium Development Goals (MDGs), Madagascar was unable to meet many of its targets. The Government of Madagascar has identified community health as a priority for improving health outcomes and is therefore updating its National Community Health Policy and Strategy. The aim is to harmonize existing community health programs and set standards for the package of community health services.

To guide this process, Management Sciences for Health (MSH), with support from UNICEF Madagascar, identified evidence on the current bottlenecks within the community health system, the future costs and required financing, as well as the expected health benefits of equitable access to community health interventions.

Context

With high poverty rates and worsening economic conditions after the 2009 political crisis, Madagascar was unable to achieve a number of its MDGs that were previously considered achievable, particularly in reducing infant and maternal mortality. The infant mortality rate is 62 per 1000 live births[1] with the majority of deaths attributed to preventable causes: 18% to pneumonia, 10% to diarrhea and 6% to malaria.[2] Malnutrition also contributes to child morbidity and mortality, with 47.4% of children under five years of age suffering from chronic malnutrition and 8.6% suffering from acute malnutrition. The maternal mortality rate remains high at 478 deaths per 100,000 live births. In the absence of effective access to obstetric care, the majority of maternal deaths are due to complications during pregnancy and childbirth.[3]

To achieve its Sustainable Development Goals (SDGs) by 2030 and to address its human resources shortage and limited access to quality services, Madagascar is focused on strengthening its community health system. In 2009, the Ministry of Public Health (MOH) released its National Community Health Policy to enable communities to implement health and development activities, optimize the use of priority social protection services and harmonize interventions at the community level. In 2017, the MOH began revising this policy and elaborating a community health strategy to better define the role of community health agents and harmonize standards for the package of community health services, financial incentives and non-financial, reporting, and supervision of community health programs.

Community Health System Bottlenecks

The main barriers to providing quality community health services[i] include:

- At the political and institutional level:
  - The 2009 policy is outdated and there is no operational plan in place to guide programming;
  - Insufficient resources and lack of dedicated funding mechanisms for community health;
  - Lack of reporting on community activities;
  - Fragmentation and poor coordination between community health programs.
- Supply of services:
  - Stock-outs of community health commodities – sometimes for months at a time - which limit the availability of services;
  - Inadequate numbers of community health agents in some areas;
  - Lack of financial and non-financial incentives for community health agents.
- Demand for services:
  - The inability to pay for medicines by some patients, which prevent community health agents from replenishing their stock of commodities.
- Service quality:
  - Low levels of supervision, insufficiently trained supervisors, and a lack of transportation for conducting supervision visits.

Identification and Prioritization of Community Interventions

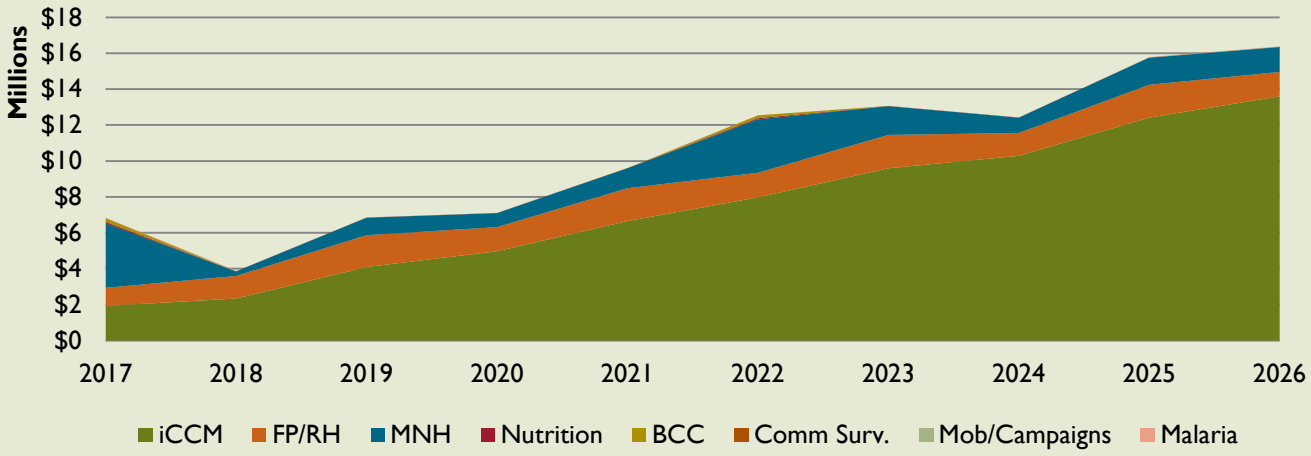
Two packages of community health services were modeled. The "basic package," corresponding to the community health services and activities currently supported by the MOH and focuses on priority interventions for child health, maternal and newborn health (MNH), and family planning and reproductive health (FP/RH).[ii] The "expanded package" includes services in the basic package as well as additional services for FP/RH and maternal and newborn health.[iii] This represents a package that the MOH could offer in the future.

The modeling of these two service packages was carried out for the period of 2017-2026 for two different coverage levels: medium coverage and high coverage, which refer to the expected levels of service utilization. In the medium coverage scenario, it is assumed that community health agents cover 5% of the needs in terms of the number of services provided in 2017 until reaching 50% coverage in 2026.[iv] In the high coverage scenario, it is assumed that coverage in 2016 would reach 90%.

Cost and Financing of Community Health Interventions

For the basic package, the majority of recurrent costs[v] are for MNH, integrated community case management (iCCM), FP/RH and behavior change communication (BCC), estimated at a total of $6.8 million in 2017. In 2026, the majority of recurrent costs are for iCCM, FP/RH, and MNH, for a total of $10.4 million in the medium coverage scenario and $16.4 million in the high coverage scenario.

Recurrent costs by program ($US): Basic package – high coverage



i. Identified through a literature review and interviews with a wide range of community health stakeholders.

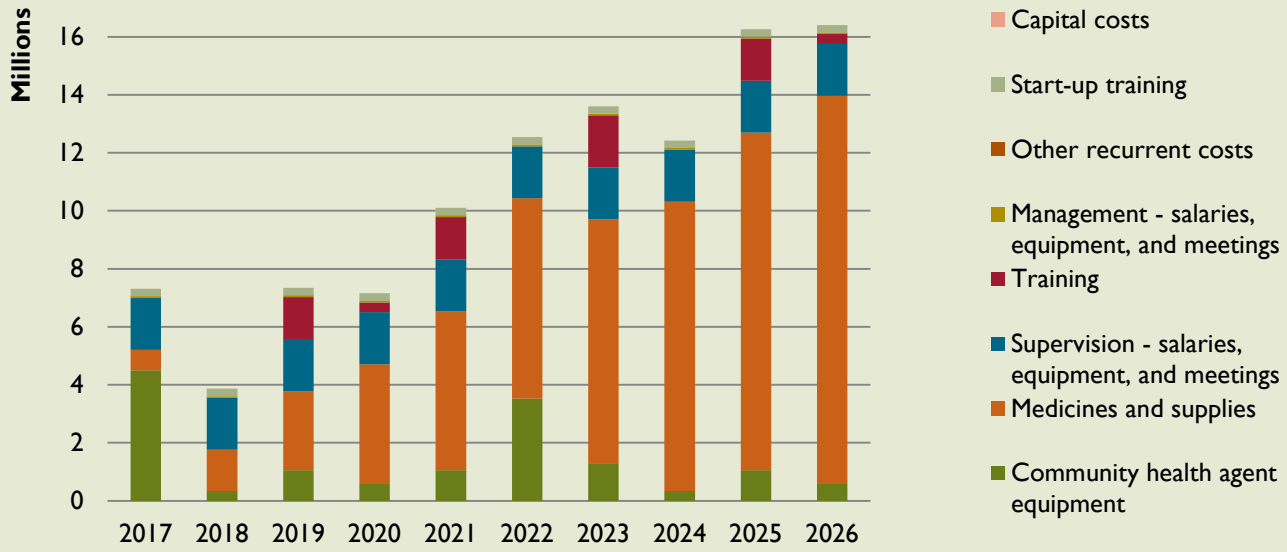
ii. The basic package includes education/outreach activities (BCC, community surveillance, campaign mobilization) and service delivery activities (iCCM, FP/RH, MNH, and nutrition), as well as reporting.

iii. The expanded package consists of the basic package as well as additional services for FP/RH, MNH, and the testing and treatment of malaria for children 5-15 years.

iv. With the exception of FP/RH interventions for which coverage assumptions vary by service.

v. Recurrent costs are costs incurred each year (e.g. drugs and supplies, management, supervision, meetings, training, etc.). Start-up costs are those incurred when starting a new program (i.e. on a on-time basis) and are not repeated every year. These costs include those incurred for start-up meetings, the development of monitoring and evaluation plans, acquisition of initial equipment, initial training, etc.

Total costs by category ($US): Basic package – high coverage

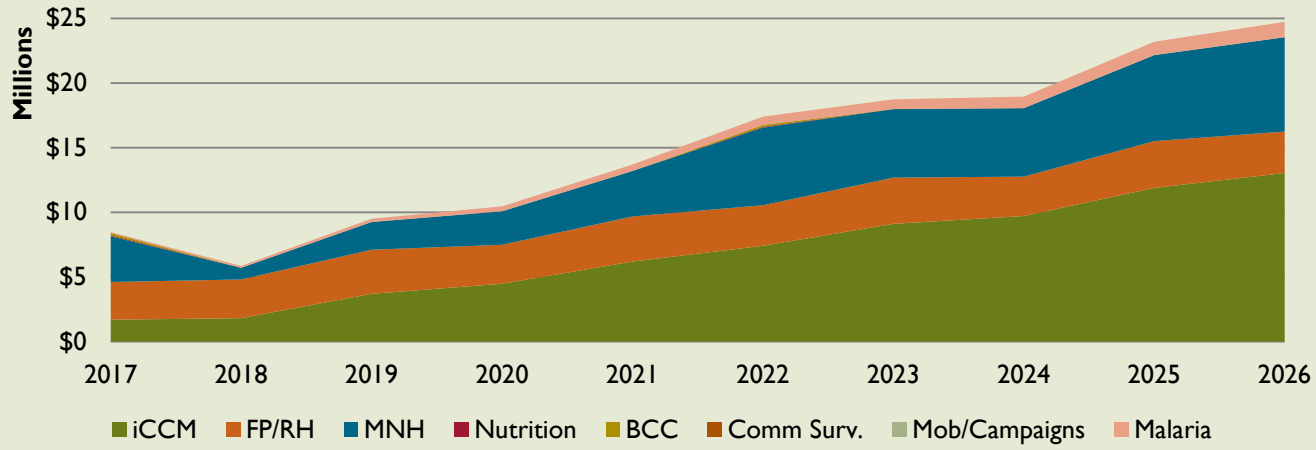


In 2017, the total costs are comprised mainly of equipment for community health agents, followed by supervision visits, and medicines and supplies. From 2020 until 2026, the majority of costs consist of drugs and supplies followed by supervision visits and equipment for community health agents.

For the expanded package, the majority of recurrent costs are for MNH services, followed by FP/RH, and iCCM in 2017. By 2026, the majority of costs are for iCCM, MNH, and FP/RH in both scenarios. By 2026, the total recurrent costs would be $15.9 million in the medium coverage scenario and $24.7 million in the high coverage scenario.

In both coverage scenarios, the majority of total costs relate to equipment for community health agents[vi] followed by medicines and supplies and supervision visits in 2017. From 2018 until 2026, the majority of costs consist of medicines and supplies followed by supervision visits.[vii]

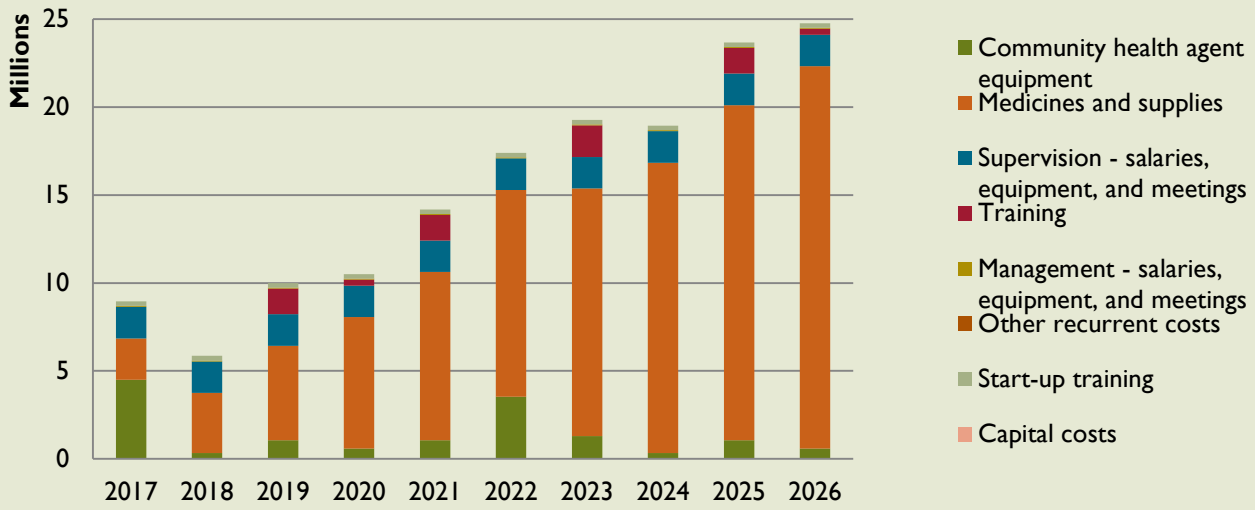
Recurrent costs by program ($US): Expanded package – high coverage



vi. The relatively high cost of equipment in 2017 is related to the fact that they are purchased the first year and then gradually replaced the following years.

vii. Medicines and supplies account for 54.5% of the total cost in 2018 and 81% of the total cost in 2026 in the medium coverage scenario and 88% of the total cost in the high coverage scenario. Medicines and supplies are variable costs that increase with the number of services provided.

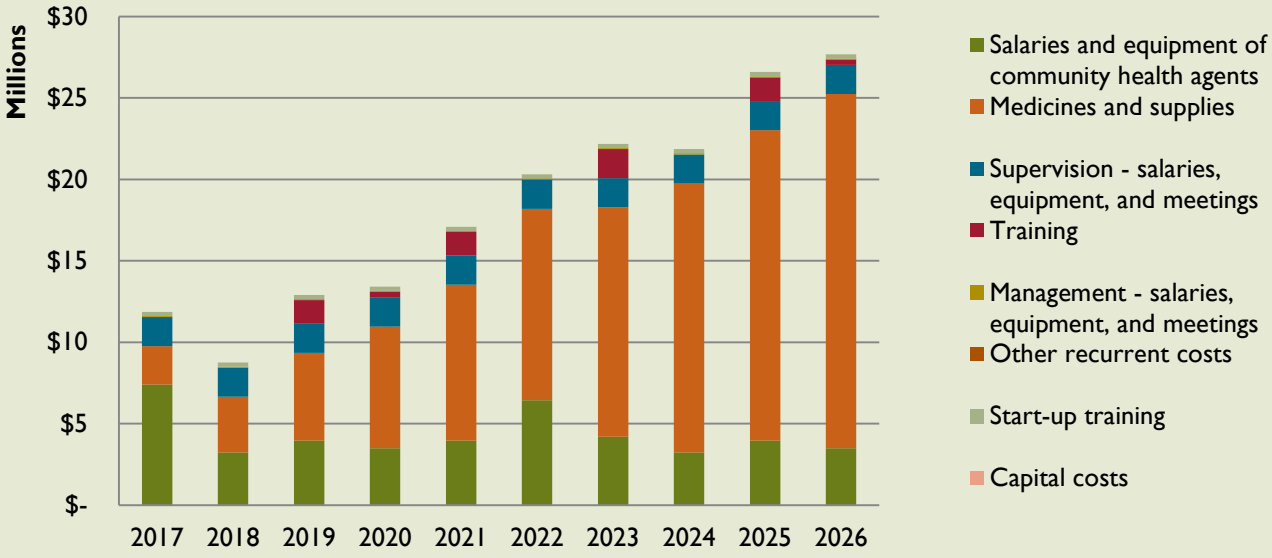
Total costs by category ($US): Expanded package – high coverage



Although the majority of community health agents in Madagascar are unpaid volunteers, there is growing recognition that financial incentives, such as a monthly stipend, can motivate community health agents and help to promote quality service delivery.[4] For illustrative purposes, this study modeled the payment of financial incentives (20,000 Ariary per month / community health agent) to demonstrate the impact of this policy on program costs.

The introduction of financial incentives would have a significant impact on the total costs of the community health program. The total cost of the program would increase from $8.9 million in 2017 to $11.9 million in 2017. By 2026, the total cost of the program would increase from $24.8 million to $27.7 million with financial incentives.

Total costs per category ($US): Expanded package – high coverage with financial incentives



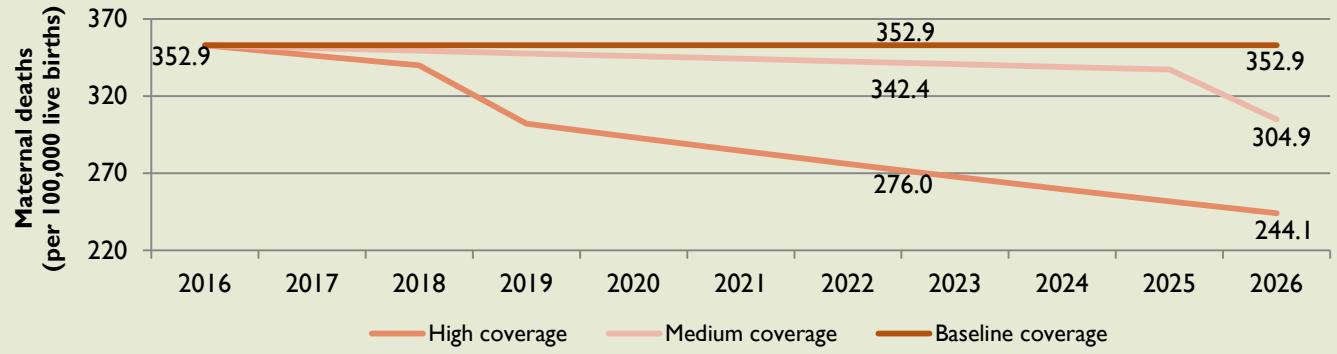
Potential Impact of Investing in Community Health

To estimate the potential impact (i.e. lives saved) of expanding the coverage of community health services in Madagascar, the study used the Lives Saved Tool (LiST) and FamPlan modules of the SPECTRUM software program.[5] The following impact estimates are illustrative and demonstrate the impact of scaling up high-impact interventions[viii] for which community health agents could provide or influence care-seeking behavior. The impact estimates shown in the following figures are based on illustrative coverage scenarios and are based on only some of the interventions included in the basic and expanded community health services packages which were included in the cost analysis.

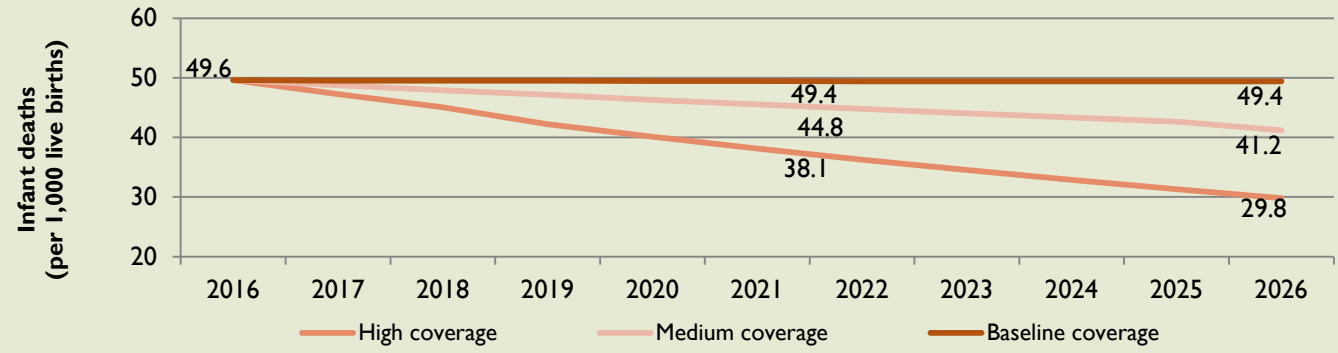
The study modelled three coverage scenarios and their impact on infant and maternal mortality from 2016-2026 using available national baseline coverage data. The annual increase in coverage rates have been interpolated from 2016 to 2026 resulting in a linear increase over the ten year period.

- Baseline coverage scenario: The rates of maternal and infant mortality remain unchanged and by 2026, a total of 13,075 maternal deaths and 202,150 infant deaths would occur with virtually no change in mortality rates.
- Medium coverage scenario: The coverage of health interventions increases to 50% by 2026 with the exception of family planning services which increase to a 45% modern contraceptive prevalence rate by 2026. From 2016 to 2026, the maternal mortality ratio would decrease from 352.9 to 304.9 and the infant mortality rate would decline from 49.6 to 41.2. By 2026, an estimated 49,773 deaths would be averted including 3,379 maternal lives and 46,394 infant lives.
- High coverage scenario: The coverage of health interventions increase to 90% by 2026 with the exception of family planning services which increase to a 50% modern contraceptive prevalence rate by 2026. From 2016 to 2026, the maternal mortality rate would decrease from 352.9 to 244.1 and the infant mortality rate would decline from 49.6 to 29.8. By 2026, an estimated 84,891 deaths would be averted including 5,975 maternal deaths and 78,916 infant deaths.

Maternal death rate (per 100,000 live births)[ix]



Infant mortality rate (per 1,000 live births)



viii. The models considered changes in coverage for the following:; folic acid supplementation/fortification; ectopic pregnancy management; intermittent preventive treatment of malaria during pregnancy (IPTp); Iron supplementation in pregnancy; skilled birth attendance; health facility delivery; clean postnatal practices; chlorhexidine; complementary feeding - education and supplementation; household insecticide treated bed net or households protected by indoor residual spraying; oral rehydration solution; zinc for treatment of diarrhea; oral antibiotics for pneumonia; artemisinin compounds for treatment of malaria (ACTs); treatment for acute malnutrition; and family planning (modern contraceptive prevalence rate of women in union).

ix. According to Johns Hopkins University, LiST impact projections sometimes show sharp declines in mortality which are likely due to the modeled percentage for institutional or health facility deliveries. The sharp declines in maternal mortality are likely due to the percentage of births cross a certain threshold which correspond to greater reductions in maternal mortality.

Recommendations and Conclusions

Community health agents in Madagascar provide high-impact health interventions and are essential for achieving universal health coverage (UHC) and the SDGs. This analysis demonstrates that improving the coverage of community health services would have a significant impact on saving lives.

The scale-up of the community health program, however, requires addressing bottlenecks within the community health system, particularly in view of the projected changes in the need for medicines and supplies, or in terms of supervisions.

Technical and financial commitments from the government and donors are also critical to the sustainability of the program. The total amount of resources required varies between $7.3 million and $8.9 million in 2017 depending on the package of services. Assuming community health agents would receive Ar 20,000 per month in remuneration, the cost of the program would increase to $11.9 million.

By 2026, the amount of resources needed would range from $10.5 million to $24.8 million depending on the package of services and the coverage scenario. The total cost would be $27.7 million if the program includes the payment of financial incentives.

The study estimated the funding evolution in a scenario in which the government's contribution would reach 50% of the total funding in 2026. In this scenario, it is assumed that by 2017, the latter would be comparable to the government's contribution to the financing of the sector, i.e. 20%, 80% of the expenditure being financed by external aid. Under these assumptions, the government's contribution to community health financing would reach $5.2 to $12.4 million in 2026 depending on the scenario.

Co-financing of community health program (modeled scenario)

Package of services	Source of financing	2017	Medium coverage 2026	High coverage 2026
Basic package	Government	1,462,107 20%	5,245,105 50%	8,203,345 50%
	Partners	5,848,429 80%	5,245,105 50%	8,203,345 50%
Expanded package	Government	1,791,582 20%	7,955,949 50%	12,385,083 50%
	Partners	7,166,328 80%	7,955,949 50%	12,385,083 50%

References

1. United Nations Economic Commission for Africa, African Union, African Development Bank and United Nations Development Programme, "MDG Report 2014: Assessing Progress in Africa toward the Millennium Development Goals."
2. DHS 2018, MDG survey 2013 and WHO/CHERG 2012 as cited in UNICEF Madagascar. Demonstration Project on the Integration of Pneumonia Treatment with Malaria Case Management at the Community Level in Madagascar: Costs and Cost-Effectiveness analysis.
3. United Nations Economic Commission for Africa, African Union, African Development Bank and United Nations Development Programme, "MDG Report 2014: Assessing Progress in Africa toward the Millennium Development Goals."
4. USAID African Strategies for Health. Community Health Worker Incentives: Lessons Learned and Best Practices from Madagascar. November 2015.
5. SPECTRUM Software program available at: http://www.avenirhealth.org/software-spectrum.php

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