



1. Project Data

Project ID P096131	Project Name ZM-Malaria Health Booster SIL (FY06)	
Country Zambia	Practice Area(Lead) Health, Nutrition & Population	Additional Financing P120872
L/C/TF Number(s) IDA-41260,IDA-48510,TF-91376,TF-92280	Closing Date (Original) 31-Jan-2010	Total Project Cost (USD) 50,000,000.00
Bank Approval Date 15-Nov-2005	Closing Date (Actual) 30-Jun-2013	
	IBRD/IDA (USD)	Grants (USD)
Original Commitment	20,000,000.00	7,050,000.00
Revised Commitment	48,595,698.17	6,577,821.68
Actual	49,125,235.67	6,577,821.68
Sector(s) Sub-National Government(38%):Health(29%):Central Government (Central Agencies)(18%):Social Protection(15%)		
Theme(s) Malaria(33%):Health system performance(17%):Other human development(17%):Participation and civic engagement(17%):Administrative and civil service reform(16%)		
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2. Project Objectives and Components

a. Objectives

Original Project Objectives: The objectives of the project were to increase access to, and use of, interventions for malaria prevention and treatment by the population of Zambia, within the context of the Recipient's National Malaria Control Program (the Program) [Financing Agreement, 12/12/2005]. The statement of objectives in the PAD is consistent with that of the Financing Agreement.

Revised Project Objectives: The objectives were revised on 8/31/2009 as follows: "to increase coverage of interventions for malaria prevention and treatment and other key maternal and child health interventions." The restructuring revised the associated outcome targets and the definition of outcome indicators, and added a maternal and child health objective. Both ICR and ICRR consider "access to and use



of" as the equivalent of "coverage."

- b. Were the project objectives/key associated outcome targets revised during implementation?

Yes

Did the Board approve the revised objectives/key associated outcome targets?

Yes

Date of Board Approval

31-Aug-2009

- c. Components

Original Components: The project had three components.

Component 1: Strengthening the health system to improve service delivery (Appraisal US\$13.42 million; Actual US\$59.86 million).

(a) Strengthening the health system. The project was to support service delivery through the district basket pooled funding, providing for: (i) additional financing for non-salary recurrent costs of district malaria action plans; (ii) insecticide-treated bed nets; (iii) indoor residual spraying, insecticides, equipment, training, guidelines, and community outreach; (iv) rapid diagnostic tests, microscopes, training, and development of protocols; (v) case management and intermittent presumptive treatment of pregnant women; (vi) strengthening human resource capacity through training, and provision of transportation and communications equipment; and (vii) supporting activities to be undertaken by other government, private and non-profit actors.

(b) Improved environmental health management. This subcomponent aimed at addressing health care waste from malaria control activities through technician training, vehicles and equipment, renovating research facilities, and environmental and vector susceptibility studies.

Component 2: Community Malaria Booster Response (Appraisal US\$3.0 million; Actual US\$3.36 million).

This component was to provide small grants to local non-governmental organizations, community-based organizations, and communities to boost demand for and appropriate use of malaria prevention and treatment interventions.

Component 3: Program Management (Appraisal US\$2.1 million, Actual US\$7.98 million).

This component was to provide support to facilitate implementation, procurement and financial management, and monitoring and evaluation, and to the Results-Based Financing (RBF) pilot implementation team.

Revised Components:

At restructuring, the project retained the same components and added the following activities in component 1 to achieve the added objective on maternal and child health interventions: (i) provision of a free package of preventive and curative services, primarily antenatal, delivery, and postpartum care for pregnant women, services for children under 5 years, and family planning services through results-based payments, and provision of reproductive health commodities, equipment, and training; (ii) strengthening staff capacity at the Ministry of Health to provide and supervise the RBF package; and (iii) external validation of results. Under Component 3, the project provided for the appointment of an independent fiduciary review agent to strengthen oversight in response to corruption investigated by the Ministry of Health.

- d. Comments on Project Cost, Financing, Borrower Contribution, and Dates

The original project cost at appraisal was estimated at US\$20 million provided through an IDA credit. A Trust Fund of US\$6.85 million from the Russian Federation was mobilized on 2/22/2008 to co-finance project activities. A grant of US\$16.76 million was provided by the Multi-donor Health Results Innovation Trust Fund on 08/31/2009 to broaden the PDO in support of maternal and child health interventions under the RBF mechanism. At that time, the project closing date was extended from 1/31/2010 to 1/31/2012. An Additional Financing Credit of US\$30 million was provided on 12/12/2010 to sustain progress towards achieving the objectives, and to address a resurgence of malaria in parts of the country. At the time of that Credit, the closing date was extended to 6/30/2013 in consideration of implementation delays related to the corruption investigation. The Health Results Innovation Grant was delinked from the Malaria



Booster Project on 1/31/2013 to allow the malaria operation to close on 6/30/2013, and the closing date of the maternal and child health RBF was extended from 1/31/2013 to 7/31/2014. On 7/23/2014, the RBF closing date was further extended by three months until 10/31/2014 to enable activities to be fully completed. The total actual cost of the project aggregated at US\$72.33 million, and there was no Borrower contribution.

3. Relevance of Objectives & Design

a. Relevance of Objectives

Relevance of the original and revised objectives is rated high as they were responsive to the main preventable cause of premature death and morbidity in the country. The broadening of the revised objectives to include maternal and child health was highly relevant, as pregnant women and children were a priority group under the original malaria objectives, which remained aligned with country conditions and needs. Before appraisal, malaria was the leading cause of morbidity and the second highest cause of mortality in the country, especially among children and women. The infant mortality rate was 95 deaths per 1,000 live births, the under-five mortality rate was 168 deaths per 1,000 live births, and the maternal mortality ratio was very high at 729 deaths per 100,000 live births. Malaria accounted for 50,000 deaths every year, and for 37% of all outpatient hospital visits. Its incidence had tripled in the three previous decades and constituted a challenge to human development as it was a major cause of absenteeism from work and schools, and loss of wages. The project targeted all of Zambia's population in 72 districts, all of which have endemic malaria.

The objectives were consistent with government policy and country conditions at appraisal. The Zambia Poverty Reduction Strategy Paper of the Ministry of Finance and National Planning (2002-2004) highlighted malaria as a priority area. In line with the National Health Strategic Plan (2006-2011) on "Working towards achieving the MDGs (Millennium Development Goals)," the country was committed to the MDGs, which include a specific focus on child mortality, maternal health, and malaria. The National Health Strategic Plan (2011-2016) retained the MDG theme and highlighted the importance of the Roll Back Malaria Program, as well as maternal and child health. The project objectives remain consistent with the National Malaria Strategic Plan 2011-2016. Maternal and child health, which are affected by malaria in Zambia, constitute a priority in the Sixth National Development Plan 2011-2015, the Roadmap for Accelerating Reduction of Maternal, Newborn and Child Mortality 2013-2016, and Zambia's Vision 2030. The objectives are also aligned with successive World Bank Country Assistance Strategies for 2004-2007, 2008-2011 (extended to 2012), and 2013-2016, which note that the project has been an important part of the Bank's support to Zambia.

Rating
High

Revised Rating
High

b. Relevance of Design

Relevance of design under the original objectives is rated Substantial, as the design laid out a plausible results chain linking funding and planned activities to outputs and intermediate outcomes to outcomes. The distribution of insecticide-treated bed nets, residual indoor spraying of insecticides, rapid diagnostic tests, provision of drugs, and strengthened human resources would plausibly lead to increased access to malaria prevention and treatment as measured by children sleeping under insecticide-treated bed nets, pregnant women treated with intermittent presumptive therapy for malaria, and increase in household structures being sprayed with residual insecticides. However, the second component of the Community Malaria Booster Response, which aimed at motivating and mobilizing communities through non-governmental organizations, had limitations in terms of coverage, effectiveness, and contribution to the outcomes. The ICR states that there was no evidence that grants to non-governmental organizations and community-based organizations were likely to be the most effective or cost-effective way to increase demand and use of malaria interventions, and that a community health worker program might have been a better option (ICR, p. 24). Also, the component was difficult to implement and sustain as it required considerable oversight and administration. However, the amount of resources allocated to this component was relatively small, i.e., 15% of the original funding, and 7.6% of actual funding.

Relevance of design under the revised objectives is also rated Substantial. In addition to the above design aspects of malaria control, which



were maintained, the revised design also laid out a plausible results chain linking planned activities to outputs and intermediate outcomes to outcomes. The expansion and strengthening of antenatal and postnatal care, the enhancement of attended deliveries and skilled care at birth, addressing the unmet need for contraception, and immunizations would plausibly lead to the desired outcome for increased coverage of maternal and child health interventions in the pilot areas.

Rating
Substantial

Revised Rating
Substantial

4. Achievement of Objectives (Efficacy)

Objective 1

Objective

Increase access to and use of interventions for malaria prevention and treatment.

Rationale

Outputs

- Malaria drugs, Artemisinin-based Combination Therapies, rapid diagnostic tests, and training of community health workers were provided.
- Over 6 million insecticide-treated nets/long-lasting nets, equipment, supplies, and insecticides for indoor residual spraying, as well as operational costs, were provided.
- Epidemic preparedness guidelines were revised, updated, printed, and distributed to provincial offices targeting all public health facilities. The project trained additional community health workers using revised curricula that included diagnosis and treatment of acute malaria cases, to further improve case management.
- The project supported the Ministry of Health's capacity to increase intermittent presumptive treatment, and provided training to microscopy technicians and other front-line health workers on the use of rapid diagnostic tests. It provided operational costs through the basket funding for training of health staff in handling malaria in pregnancy, and training on protocols of the intermittent therapy, case management for infants, children, and pregnant women in the first trimester, testing of all febrile cases using rapid diagnostic tests, and detection of anemia.
- In order to strengthen logistics and supply chain management, the project financed the scale-up of the Essential Medicines and Logistics Improvement Program, including system design, hardware, and software. It also provided forklifts, delivery vehicles, operational costs, and a racking system to increase the holding capacity of medical stores.
- The project supported the implementation of the National Health Care Waste Management Plan.
- The project provided small grants to support community subprojects in the following areas: environmental management, training in key malaria messages, distribution of insecticide-treated bed nets, improving access to health care with transportation, and income generating activities.

Outcomes

The percentage of children who slept under an insecticide-treated bed net increased from a baseline of 30% in 2006 to 41% in 2008, attaining the target of 40%. Over the whole project period, the rate reached 57% by 2013, attaining the revised target of 55%. Enhanced malaria prevention was also reflected by the increased use of residual spraying of homes. People who slept in appropriately sprayed structures increased from a baseline of 40% in 2006 to 60% in 2008, attaining the target of 60%. The percentage of pregnant women who received a complete course of intermittent presumptive treatment for malaria increased from a baseline of 45% in 2006 to 66% in 2008, exceeding the target of 55%. Over the whole project, this rate reached 73% in 2013, slightly short of the revised target of 75%. The above outcomes reflected the "utilization" aspect of the objective, but since "use" presupposes "access" in the context of the above malaria interventions, the outcomes are deemed to be suitable to assess the attainment of the objective to increase "access and use." Both prevention and treatment aspects were Substantially achieved.



Rating
Substantial

Revised Objective
Increase coverage of interventions for malaria prevention and treatment.

Revised Rationale
Outputs
The same outputs shown above.

Outcomes
The revised objective statement did not materially change the original objective since "coverage" is meshed with "access and use," but the revision changed the associated outcome targets and the definition of outcome indicators. In line with the government program change, insecticide-treated or retreated bed nets were changed to long-lasting insecticide-treated nets; a "complete" course of presumptive treatment for pregnant women was modified to "at least two doses"; and residual spraying was assessed by households that were reported as sprayed within the previous 12 months.
The percentage of children who slept under a bed net increased from a baseline of 40% in 2008 to 57% in 2013, slightly above the target of 55%. The percentage of households reported as sprayed within the previous 12 months increased from a baseline of 23% in 2010 to 29.1% in 2013, slightly above the target of 26%. The percentage of pregnant women who received at least two doses of intermittent presumptive treatment for malaria increased from a baseline of 55% in 2008 to 73% in 2013, close to the target of 75%. Increased coverage for both prevention and treatment was Substantially achieved under the revised targets.

Revised Rating
Substantial

Objective 2

Objective
Increase coverage of interventions for maternal and child health.

Rationale
This objective was added at restructuring. See the discussion and rating under Revised Objective below.

Rating
Not Rated/Not Applicable

Revised Objective
Increase coverage of interventions for maternal and child health.

Revised Rationale
Outputs



- The project financed the implementation of the RBF pilot for maternal and child health, including consultant services.
- The project procured and distributed Emergency Obstetrics and Newborn Care equipment, and vehicles for the RBF team and technical focal points in the districts.
- Training was provided to frontline health workers on Emergency Obstetrics and Newborn Care.
- Training on the RBF mechanism was provided to the central ministry, project implementation staff, and focal points in the districts.

Outcomes

There was an overall uptake of maternal and child health interventions. The percentage of women delivering in health facilities by a skilled birth attendant in the RBF pilot eligible districts increased from a baseline of 31% in 2010 to 72% in 2014, exceeding the target of 36%. When compared with control districts that did not have incremental support, there was a difference of 13 percentage points. Postnatal care showed an 8-percentage point increase relative to control districts. The number of women using any type of contraception in RBF eligible districts increased from a baseline of 47,600 women in 2010 to 110,800 in 2014, exceeding the target of 66,600 women. The number of immunized children increased from a baseline of 49,766 children in 2010 to 67,283 children in 2014, exceeding the target of 64,696. However, there were concerns about the reliability of the RBF data (ICR, p. 19; see Section 10b). The objective was achieved and is rated Substantial.

Revised Rating
Substantial

5. Efficiency

The original PAD's economic analysis did not include a cost-benefit analysis, but it outlined human capital loss from malaria infection and the potential gains from malaria control. Also, the project paper for the AF did not provide a quantitative economic analysis, but it noted that the package of malaria interventions had been estimated to have a benefit-cost ratio of 20:1 for populations in sub-Saharan Africa, and it provided a range of estimates on the cost-effectiveness of interventions in terms of cost per disability-adjusted life year saved.

The ICR's economic analysis suggests that the overall cost-benefit ratio of the program and its cost-effectiveness were favorable, with the following assumptions made: First, child malaria deaths averted were attributed to the whole malaria program, including IDA financing, which constitutes about 20% of the total malaria program. Second, every malaria death averted accounted for 95 disability-adjusted life years based on WHO's data for these ratios for low-income countries. Third, the calculation of benefits considered the per capita income (US\$1,705 in 2014) as recommended by the Disease Control Priorities and the Copenhagen Consensus. The internal rate of return under the baseline scenario was estimated at 154%. The results show that the baseline scenario yields a favorable cost-benefit calculation, with \$290 million in discounted spending yielding about US\$2,210 million in discounted benefits. The cost-effectiveness ratios were also favorable at about US\$500 to US\$820 invested per disability-adjusted life year, which is below the suggested threshold of one time per capita in defining cost-effective interventions. The favorable results arise mostly from the welfare benefits of reduced child mortality. The overall scenario that each averted child death constituted about US\$160,000 in welfare gains is consistent with findings of the Commission on Macroeconomics and Health. The economic analysis notes that donor funding, particularly to meet the relatively high costs of indoor residual spraying (averaging about US\$45 million per year, which was about 13% of the Ministry of Health annual budget over the period 2006-2013), would be needed for the next several years (ICR, p. 53).

The Impact Evaluation of the RBF pilot for maternal and child health included a cost-effectiveness assessment (contracted to Brandeis University) that found the RBF intervention to be a cost-effective approach to improving maternal and child health, compared with a "business as usual control group of districts." Without the quality adjustment, the estimated mid-point Incremental Cost Effectiveness Ratio was US\$1,031 per quality-adjusted life year gained. With the quality improvement included, the ratio was US\$863 per quality-adjusted life year gained. Both values are less than the GDP per capita of US\$1,759 in 2013. In addition to the control group of districts, the Impact Evaluation also compared RBF districts with other districts that received a similar package (titled C1 districts), but where the additional funding was unconditional and without salary bonus. The evaluation found that most of the services that increased in the RBF facilities showed similar improvements in the C1 facilities (ICR, p. 31). The ICR supposes that this may suggest that the RBF mechanism may not be as cost-effective as simply providing additional resources and inputs, or that the performance in the C1 districts could be due to a combination of factors and spillover effects, such



as learning from counterparts in other districts, and/or impact of equipment and additional resources on performance, and/or providers may have improved their performance in response to their awareness of being observed.

Several aspects of design and implementation contributed to project efficiency. The project effectively used the complementarity of other program partners and donors, and utilized the capacities of civil society and non-governmental organizations to complement public health system delivery, based on comparative advantage. The switch from bed nets that needed to be periodically treated with insecticides to long-lasting impregnated nets outweighed the additional cost of the long-lasting nets, as it saved the cost of re-treatment and replacement, with savings in distribution costs, malaria kits, and higher effectiveness against mosquitoes. The adoption of newly available malaria technologies, such as the use of Artemisinin-based Combination Therapies, in response to Chloroquine resistance, made treatment more effective. Also, the distribution of bed nets was efficiently targeted to areas that had seen the greatest resurgence of malaria cases the previous year. However, there were some shortcomings in the efficiency of implementation. Stock-outs of anti-malaria drugs were found to be widespread in 2008 (ICR, p. 26). A supply chain pilot was added with UK Department for International Development (DfID) funding to reduce drug stock-outs and to build capacity for supply planning and forecasting. The community grants were delayed and inadequately supervised (ICR, p. 13). Ministry-wide terminations and suspensions during a corruption investigation reduced personnel capacity in 2009, and the suspension of funding by donors temporarily disrupted the overall Ministry's activities and the functioning of pooled funding for districts around mid-course, also resulting in delays for large procurement packages. Budgeting and internal audit for the project were weak during the initial years (ICR, p. 21), but they improved after 2011. In conclusion, given high estimated returns and cost-effectiveness of interventions, but with some shortcomings in the efficiency of implementation, overall efficiency is rated Substantial.

Efficiency Rating
Substantial

a. If available, enter the Economic Rate of Return (ERR) and/or Financial Rate of Return (FRR) at appraisal and the re-estimated value at evaluation:

	Rate Available?	Point value (%)	*Coverage/Scope (%)
Appraisal		0	0 <input type="checkbox"/> Not Applicable
ICR Estimate	✓	154.00	85.00 <input type="checkbox"/> Not Applicable

* Refers to percent of total project cost for which ERR/FRR was calculated.

6. Outcome

Under the original objectives, relevance of objectives is rated High as the objectives were responsive to the main preventable cause of premature death and morbidity in the country. The objectives are consistent with government policy and aligned with the Bank Country Assistance Strategy. Relevance of design is rated Substantial as it was consistent with the stated objectives with a plausible results chain linking funding and planned activities to outputs and intermediate outcomes to outcomes for increasing access and use of interventions for malaria prevention and treatment. But the smaller component of the Community Malaria Booster Response, which provided grants to non-governmental organizations to increase demand and use of malaria interventions, had questionable effectiveness and contribution to the outcomes. The objective to increase access and use of interventions for malaria prevention and treatment was substantially achieved for both prevention and treatment, and is rated Substantial. Efficiency is rated Substantial because the interventions were cost-effective, but with some shortcomings in the efficiency of implementation. The review findings are indicative of minor shortcomings in preparation and implementation under the original objectives, and therefore an outcome rating of Satisfactory.

Under the revised objectives, relevance of objectives is rated High as the objectives were responsive to country needs and conditions for both malaria and maternal and child health. The broadening of objectives to include maternal and child health interventions was also pertinent since pregnant women and children were a priority group under the original malaria objectives. Relevance of design is rated Substantial with a plausible results chain. The objective to increase coverage of interventions for malaria prevention and treatment was achieved and is rated Substantial, with the understanding that "coverage" was treated as the equivalent of "access to and use of" interventions. The objective to



increase coverage of interventions for maternal and child health was achieved and is also rated Substantial. Efficiency is rated Substantial as noted above under the original objectives. The review findings are indicative of minor shortcomings in preparation and implementation under the revised objectives, and therefore an outcome rating of Satisfactory.

According to IEG/OPCS guidelines, when a project's objectives are revised, the final outcome is determined by the weight of Bank disbursements under each set of objectives (33% under the original objectives, and 67% under the revised objectives):

- Under the original objectives, the outcome is rated Satisfactory (5) with a weight value of 1.65 (5 x 33%).
- Under the revised objectives, the outcome is rated Satisfactory (5) with a weight value of 3.35 (5 x 67%).
- These add up to a value of 5, which corresponds to a Satisfactory rating, indicative of minor shortcomings in the project's preparation and implementation.

- a. Outcome Rating
Satisfactory

7. Rationale for Risk to Development Outcome Rating

The risk that development outcomes will not be maintained is rated modest for several reasons. The government remains strongly committed to malaria control, although it continues to rely on international assistance. Substantial funding for malaria has been secured through 2017 from international partners such as the Global Fund to Fight AIDS, Tuberculosis, and Malaria, the United States Agency for International Development, and DfID. Technical and management capacities have been developed. Although global attention is progressively shifting to health systems strengthening, this shift does not preclude support to specific priority disease programs such as malaria control, since priority programs constitute important parts of the larger system. The Health Services Improvement Project approved in 2014 would further strengthen health delivery systems and utilization of maternal and child health services, while building on the progress already made under this project.

- a. Risk to Development Outcome Rating
Modest

8. Assessment of Bank Performance

- a. Quality-at-Entry

The Bank performed effectively in collaborating with the government and development partners to identify, facilitate preparation, and appraise the operation. The project's strategic relevance was high as the focus was on the largest contributor to Zambia's burden of disease. The Bank incorporated lessons learned from previous projects and from global experience into the design, namely the importance of decentralized approaches, human resources strengthening, coordination among a broad range of partners and stakeholders, and addressing cost barriers to poor households in accessing insecticide-treated nets. Project development was consistent with the Bank's fiduciary role. Preparation benefited from a Quality at Entry Review panel before appraisal. The project design was relevant to poverty and to pregnant women. Technical aspects were of high quality, and evidence-based approaches for disease control were used. Implementation arrangements were adequately prepared. Monitoring and evaluation arrangements were well designed, but additional consideration was needed in designing the small grants program for boosting the community response because of complexity in implementation and oversight. A Project Implementation Manual with detailed implementation guidelines was developed. Bank accounts were opened. Risks were adequately identified and mitigation measures were prepared, including for capacity development, procurement, and financial management. Environmental aspects were well prepared and utilized WHO assessment. Project preparation was effective in donor coordination and took account of the capacity and ownership of the government and the National Malaria Control Center. Overall, there were only minor shortcomings in the way the Bank identified, facilitated preparation of, and appraised the operation with the aim to achieve the planned development outcomes, consistent with a Quality-at-Entry rating of Satisfactory.



Quality-at-Entry Rating
Satisfactory

b. Quality of supervision

Since the operation was the first malaria booster project supported by the Bank, there was added interest and attention provided by Bank during the project's initial years. The Bank team undertook regular supervision missions. Supervision inputs and processes were adequate overall. The Bank was responsive to implementation challenges and proactive in mobilizing additional resources to support project objectives. Subsequent to drug stock-outs reported in 2008, the Bank secured a trust fund grant to explore solutions and drug distribution models to improve the availability of and access to combination therapies and essential drugs. The team was also instrumental in mobilizing resources from a Russian trust fund in 2007, a grant from the Health Results Innovation Trust Funds in 2009, and additional financing in 2010. The Bank Team was effective in supporting the subsequent Bank-assisted health operation and transition arrangements.

However, there were some supervision shortcomings in monitoring expenditures at the district level, supervising community grants, and reporting. Shortcomings in the storage of insecticides and the implementation of the health waste management plan were not adequately reported. Reporting on indicators was incomplete in the early years of project implementation (ICR, p. 17). In conclusion, given these moderate shortcomings, the quality of supervision is rated Moderately Satisfactory.

Quality of Supervision Rating
Moderately Satisfactory

Overall Bank Performance Rating
Moderately Satisfactory

9. Assessment of Borrower Performance

a. Government Performance

Note: The ICR has categorized the Ministry of Health, which was responsible for process functions, as part of the larger government.

Ownership and commitment were strong as demonstrated through policy support and budgetary allocations. The government engaged with stakeholders and pursued a well-coordinated involvement of the stakeholder donor group through the national partnership for Roll Back Malaria, and in the pooled basket funding for district health plans. The government proactively secured funding for malaria control through 2017 from international program partners (see Section 7). The Ministry of Health was closely engaged in project preparation, ensured readiness, and moved quickly to put staff in place. However, there were some shortcomings. The external auditors' report on matters arising from the audit for 2008 raised accountability issues. Investigations related to the corruption episode in 2009 revealed significant weaknesses in the Ministry's internal control and financial management. The Ministry took decisive action with zero tolerance in its handling of the corruption crisis. A financial management plan was agreed upon, and the plan's implementation started in 2010. There were delays in large procurement packages due to personnel disruptions. The Bank reported that financial management improved in 2011, and that most issues were resolved during 2012 and 2013. In conclusion, given the moderate shortcomings, the overall performance of the government is rated Moderately Satisfactory.

Government Performance Rating
Moderately Satisfactory

b. Implementing Agency Performance

The day to day implementing agency for program interventions was the National Malaria Control Center, which was supplemented by the RBF Implementation Support Team to manage the RBF pilot for maternal and child health. The National Malaria Control Center was committed and effective in implementing malaria interventions. The Center pursued program policies and activities that embodied best practice. The quality of its technical leadership was high. The Center worked smoothly with the Roll Back Malaria partners, and in coordinating joint annual reviews and malaria program planning. It ensured that the "biannual information system surveys" and resistance monitoring were completed on time, and also ensured that data was used to inform decisions. The Center website was up to date and highly informative. However, the small grants program did not perform effectively. Initially, it was managed by a team working



on AIDS control. When the grants management was transferred to the National Malaria Control Center, there was a surge in the number of grants, but implementation continued to lag for most of the project period (ICR, p. 14). The RBF pilot was managed by a dedicated team of consultants. The team succeeded in rolling out the RBF pilot to all ten districts, despite the disruptions and staff turnover that followed the corruption investigation at the Ministry of Health. The RBF team remained focused on the purpose of the pilot, but deficiencies were identified in data recording and verification (ICR, p. 19). In conclusion, given these moderate shortcomings, the overall performance of the implementing agencies is rated Moderately Satisfactory.

Implementing Agency Performance Rating
Moderately Satisfactory

Overall Borrower Performance Rating
Moderately Satisfactory

10. M&E Design, Implementation, & Utilization

a. M&E Design

The project development objectives were clearly stated, and the indicators on core prevention activities were consistent with the stated objectives, although the project did not have an outcome indicator on treatment access. The results framework for both the original and revised objectives had a clear results-chain logic. It linked the inputs needed for malaria prevention and treatment to outputs, intermediate outcomes and outcomes. Under the original objectives, the indicators were measurable. The number of indicators and data collection methods were adequate. The M&E design was well embedded institutionally, with high stakeholder ownership for malaria monitoring. The project included a malaria indicator survey every two years to supplement the routine data. However, some of the results-based indicators for the RBF pilot were difficult to measure and verify, and some quality performance indicators, such as the availability of beds or specific equipment, were not under the control of the facility and its staff (ICR, p. 46). The M&E design for the RBF pilot included monthly and quarterly data reporting, a technical review carried out by independent consultants during implementation, a process evaluation, and an impact evaluation comparing pilot facilities with two control groups.

b. M&E Implementation

Planned M&E activities for malaria were completed effectively as scheduled. The National Malaria Control Center published the M&E plan on its website along with data from Malaria Indicator Surveys done in 2006, 2008, 2010, and 2012. Monthly malaria data from 10 sentinel districts across the country were collected for the Management Information System, which was upgraded to provide real-time data through rapid reporting piloted in nine facilities in early 2011. The project M&E also used the 2007 and 2013 Demographic and Health Surveys. In addition, the project undertook a National Malaria Health Facility Survey in 2011 to assess the quality of outpatient malaria case management in health facilities. The project also contributed to some improvements in the quality of routine district level reporting, and in integrating data collection. At the facility level, data was collected on paper forms, then aggregated and computerized at the district level, feeding into the national electronic data base. Data collection followed standardized survey tools and protocols developed by teams of international and national experts. The quality and reliability of the Malaria Indicator Surveys and the Demographic and Health Survey were high.

The RBF pre-pilot and pilot included a detailed process evaluation and technical evaluation. These were implemented as planned. During the pilot period, performance data were extracted directly from provider records and facility registers. Data on the quality of facilities and services was collected as planned through quarterly assessments by the supervising district hospital team. As stated previously, the ICR expresses concerns about the reliability of the RBF data. Although the management information system was favorably assessed by regional standards, weaknesses were identified in data management and technical capacity for data analysis.

c. M&E Utilization

M&E findings were used to introduce positive shifts in program strategies, and to use data to drive policy and program decisions. In response to monitoring data, the Zambia Malaria Prevalence Report 2010 recommended stratifying the country into three malaria



epidemiological zones. The indoor residual spraying, which previously focused on selected districts, started targeting malaria “hot spots.” Residual spraying was previously thought to be useful only in urban areas, but when new data showed its benefits in mud houses, it was expanded into rural areas as well. At the mid-term review, a decision was taken to shift the focus of the project to improving diagnosis and treatment of confirmed malaria cases rather than considering all fever cases to be malaria, and the guidelines of the Ministry of Health were modified accordingly.

Project M&E data were widely disseminated and shared with stakeholders, both domestic and international. The National Malaria Control Center made extensive use of data to monitor and adjust interventions. A number of analytical papers assessing malaria trends and the impact of program activities, authored by national staff, were published in scholarly journals during the project. The new Bank-assisted operation, the Health Services Improvement Project, relied on the M&E capacities strengthened by the project.

M&E Quality Rating
Substantial

11. Other Issues

a. Safeguards

Two safeguard policies were triggered by the project: Environment Assessment (OP/BP/GP 4.01) and Pest Management (OP 4.09). The ICR reported compliance with both. The project was classified under environmental category B.

Pest Management. The use of DDT for indoor residual spraying as part of an integrated malaria vector management plan is allowed by WHO and the Stockholm Convention, and the Bank allows the purchase and use of DDT if there is compliance with safeguard policies. The Vector Management Action Plan was publicly disclosed in the country and by the Bank in September 2005. An environmental assessment was not required because a detailed assessment was already completed by WHO, which concluded that Zambia’s vector control activities were acceptable. The Project also responded to WHO recommendations to enhance training and capacities. When alternative and safer insecticides became available, they were provided through the AF.

Health Waste Management. The project did not create any new categories of health care waste. The additional volume was handled as per the National Health Waste Management Plan, which was reviewed during appraisal and found to be satisfactory. The waste management plan was updated in 2009 and disclosed in 2010. For both pest management and health waste, there were instances when issues were reported about the adequacy of storage of insecticides and disposal of waste.

b. Fiduciary Compliance

Financial Management. The Ministry of Health was responsible for financial management. At appraisal, the financial management assessment concluded that the Ministry of Health operated in a weak financial management control environment (PAD, p. 20). Risk mitigation measures were developed to satisfy the Bank’s OP/BP 10.02 minimum requirements, and included an accounting system package integrated with the government financial management system, financial procedures guidelines, human resource development, and technical assistance. The Midterm Review in May 2008 concluded that accounting was working well, but that budgeting and internal audit were weak, and that financial reports were incomplete.

Corruption allegations at the Ministry of Health were made in June 2009. A forensic audit of the basket funding led by the Office of the Auditor General concluded that funds from several cooperating partners were affected. The government reimbursed the affected partners a total amount of US\$3.28 million, and many employees were suspended or prosecuted. The Government and the cooperating partners adopted a Governance Action Plan, and after the Plan progressed, several donor partners restarted disbursements. Pursuant to the forensic audit, the government and the Bank carried out extensive investigations that were completed in August 2010. These investigations identified ineligible expenditures. After reconciliation by the Office of the Auditor General, the Ministry of Finance repaid US\$0.4 million to the Bank. A financial management improvement plan was developed, financial management arrangements were revised, and implementation of that plan began in 2010. For the RBF, the payment schedules, quality adjustment calculation, and the maximum share that could be paid to staff were adjusted. The Ministry of Health hired a senior accountant for the project, and the Bank intensified its supervision of all aspects of financial



management and provided additional training on Bank guidelines. An Independent Fiduciary Review Agent was contracted to review financial management and procurement transactions, and to strengthen capacity at the Ministry. No further Bank funding was provided through the pooled funding mechanism for the districts, and payments were made directly to suppliers. Financial management improved starting in 2011. By 2013, most financial management issues were resolved, resulting in unqualified audits, timely reporting and replenishment requests, and adequate budgeting and record keeping.

Procurement. Early delays in procurement were noted and were resolved, including through the introduction of two procurement methods (National and International Shopping, and Procurement from United National Agencies under a Credit Agreement amendment in 2007) and through the provision of technical assistance and training in procurement, financial management, and project management. In 2009 and 2010, however, staff turnover that followed the corruption investigation resulted in constrained capacities, including the move of the malaria procurement officer to lead all the Ministry's procurement. Staff disruptions led to delays in large procurement packages, which persisted through 2013.

c. Unintended impacts (Positive or Negative)

None reported.

d. Other

12. Ratings

Ratings	ICR	IEG	Reason for Disagreements/Comment
Outcome	Satisfactory	Satisfactory	---
Risk to Development Outcome	Modest	Modest	---
Bank Performance	Moderately Satisfactory	Moderately Satisfactory	---
Borrower Performance	Moderately Satisfactory	Moderately Satisfactory	---
Quality of ICR		High	---

Note

When insufficient information is provided by the Bank for IEG to arrive at a clear rating, IEG will downgrade the relevant ratings as warranted beginning July 1, 2006.

The "Reason for Disagreement/Comments" column could cross-reference other sections of the ICR Review, as appropriate.

13. Lessons

The project provides a number of useful lessons (ICR, pp. 44-46), and the following lessons are drawn from the ICR and adapted by IEG:

Effective use of surveillance data in a malaria program contributes to program performance and to positive adaptations. As malaria resurged, the project adjusted the insecticides used for spraying in 2008 in response to vector resistance. Rather than spraying in selected districts, malaria hot spots were identified. Residual spraying, which was previously thought to be useful only in urban areas, was found to be beneficial in mud houses in rural areas as well. Rather than considering all fever cases to be malaria, new guidelines focused on improving diagnosis and treatment of confirmed malaria cases.

Adequate implementation of program interventions is dependent on full understanding of their purpose and on staff motivation. The project's reliance on the team of a separate AIDS control project to administer the small grants program produced disappointing results.



Results-based financing is inherently complex and requires a staged approach, with learning by doing and adjusting on the way. The project began with a pre-pilot in one district, followed by a larger scale pilot, which provided useful information on the potential wider expansion of the RBF mechanism.

14. Assessment Recommended?

No

15. Comments on Quality of ICR

The analytical quality of the report and its level of candor are high. The report is outcome-driven and provides a thorough analysis of the project results. The ICR meticulously assesses the results framework as well as monitoring and data quality. Attribution of observed results to the project, as well as other potential determinants of malaria outcomes, are analytically discussed. The quality of the evidence is high for malaria outcomes, and the ICR assesses well the reliability issues surrounding the data for the RBF pilot on maternal and child health. The report provides rich insights on the RBF pilot and comparisons with district control groups. The cost-effectiveness analysis is comprehensive and methodologically sound. The report identifies useful lessons directly derived from project experience. The ICR is coherent and consistent with the guidelines. The length of the text is understandable in view of the complexity of the project with extensive M&E that generated a large amount of data, which was presented efficiently and clearly.

- a. Quality of ICR Rating
High