

U.S. President’s Malaria Initiative (PMI) Approach to Health Systems Strengthening

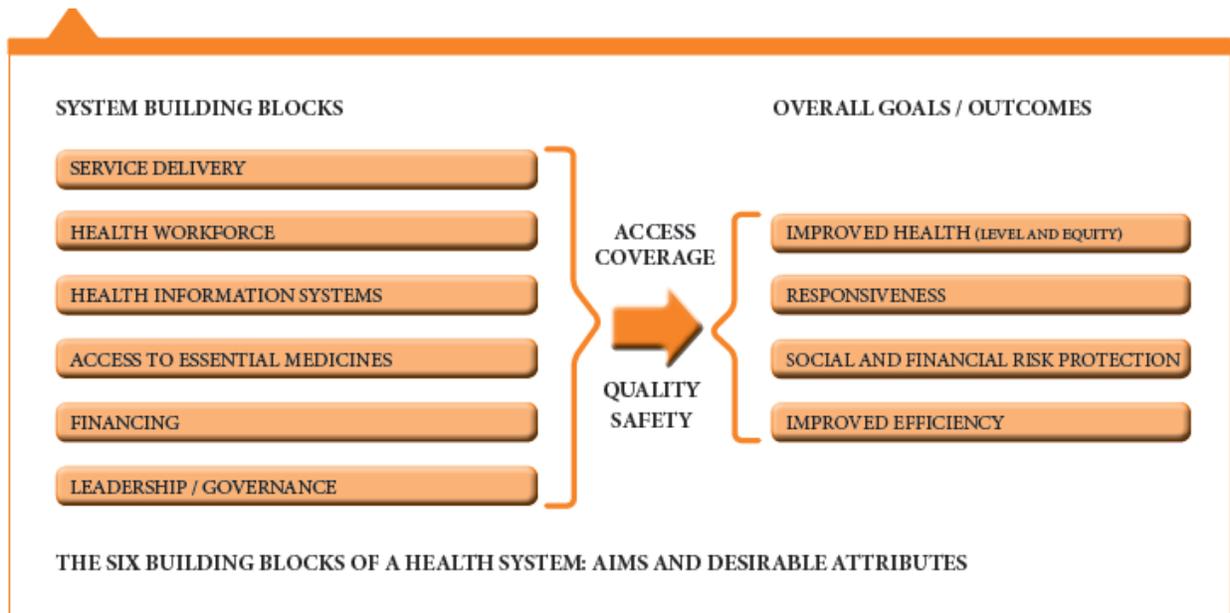
What is Health System Strengthening?

Strengthening health systems means supporting equitable and efficient delivery of health services. Addressing constraints affecting the flow of health supplies, information, and services contributes to strong health systems and leads to improved health outcomes.

The World Health Organization (WHO) has developed a framework comprised of six building blocks for health systems strengthening: service delivery, health workforce, health information systems, access to essential medicines, financing, and leadership/governance.

These building blocks strengthen health systems by improving health care access, coverage, quality, and safety, leading to key outcomes of improved health, efficiency and responsiveness.

The WHO Health Systems Framework



Source: WHO 2010. *Monitoring the building blocks of health systems: a handbook of indicators and their measurement strategies.*

PMI activities in Health System Strengthening

Across all PMI focus countries, weak health systems are a major constraint to the planning, implementation, monitoring, and sustainability of malaria control efforts. PMI considers support for capacity building for national malaria control programs (NMCPs) to be an essential part of health system strengthening. While the focus remains on malaria, PMI supports key health system building blocks in focus countries, with an emphasis on delivery of services, developing the technical and leadership skills of the health workforce, improving health information systems, and increasing access to essential

malaria commodities. In addition, PMI supports the development of research capacity to enable countries to gather needed information to update national policies and programs and to address barriers to scale up of malaria control interventions.

Delivery of services

Delivery of health services is being strengthened via integrated case management of common diseases at the community level and sustainable, local provision of prevention measures. Examples of PMI-supported activities include:

- To reach populations with limited access to health care, many PMI countries have adopted integrated community case management (iCCM) for treatment of malaria, pneumonia, and diarrhea at the community level. iCCM expands the reach of public health services by training and employing community health workers equipped to diagnose and treat children with standardized algorithms. PMI's support of the Health Extension Worker program in Ethiopia through provision of commodities and iCCM training since 2007 has contributed to significant reductions in all-cause mortality in children under five years of age. PMI has supported similar scale-up of iCCM in 13 focus countries. Such programs in Senegal, Rwanda, Madagascar and Malawi now cover the entire target population.
- With PMI's support, over 28,000 local personnel were trained to carry out spraying operations in FY 2013, increasing in-country capacity for planning and effective implementation of IRS across PMI countries. Furthermore, in many countries where PMI supports IRS, Ministries of the Environment increasingly play a leading role in overseeing compliance with environmental regulations.

Health workforce

Developing technical and leadership skills of the health workforce ensures the delivery and sustainability of high quality health services. PMI supports the training of ministry of health staff and health workers at all levels of the health system. For example:

- PMI supports the CDC's Field Epidemiology and Laboratory Training Program in 12 focus countries in Africa (Angola, DRC, Ethiopia, Ghana, Kenya, Mozambique, Nigeria, Rwanda, Tanzania, Uganda, Zambia, Zimbabwe) and in the Greater Mekong Subregion (Burma) to build a cadre of ministry of health staff with technical skills in the collection, analysis, and interpretation of data for decision-making and epidemiologic investigations. For example, 29 students in Tanzania have now graduated from the two-year, competency-based Master of Science program in Applied Epidemiology and Public Health Laboratory Management, most of whom are currently employed at government institutions.
- In FY 2013, more than 60,000¹ health workers were trained in malaria treatment with ACTs, and over 25,000 were trained in diagnosis of malaria. Malaria training was conducted as part of integrated Community Case Management (iCCM) in 13 countries, where health workers were simultaneously trained to diagnose and treat the other main causes of childhood fever, diarrhea

¹ Counts of health workers trained may include some health workers being trained on more than one occasion.

and pneumonia. In addition, over 16,000 health workers were trained in effective delivery of Intermittent Preventive Treatment of malaria among pregnant women (IPTp).

- In Malawi, PMI supported implementation of a national plan to strengthen malaria diagnostic services. The program is designed to provide sustainable on-site supportive supervision and training for laboratory and clinical staff in microscopy and rapid diagnostic tests. To maximize efficient use of resources, malaria diagnostic supervision is integrated with the U.S. President's Emergency Plan for AIDS Relief's supervision and laboratory strengthening efforts for tuberculosis, and HIV and AIDS. To date, a core group of laboratory and clinical supervisors at the national and district levels has provided support for 182 of 190 facilities with a malaria diagnostic laboratory. Further rounds of outreach training have been planned to achieve and maintain 100% coverage of health facilities with a laboratory.

Health information systems

Strong surveillance systems are needed to collect and analyze routine malaria data. This information is used to improve service delivery in endemic regions and to identify and contain outbreaks. Data on drug and insecticide resistance is also critical for maintaining effective interventions. PMI invests in strengthening facility-based information systems, capacity to analyze and respond to epidemiological changes, and routine resistance monitoring across PMI focus countries. For example:

- In countries where there are strengthened facility data collection systems, such as Rwanda and Zambia, PMI continues to invest in capacity building of NMCP personnel to capture, use, and disseminate data. These activities include quality improvement of data collection and analysis, training workshops and technical assistance for NMCP personnel, and development of databases and networks for storing and processing routine data.
- PMI is collaborating with research institutions and NMCPs in all focus countries to monitor the susceptibility of mosquitoes to insecticides. Regularly updated information is used to help countries select effective insecticides for vector control interventions including IRS. To facilitate monitoring, PMI has supported the installation of container insectaries in Mozambique, Mali, Angola, and Liberia. These portable, climate-controlled spaces are used to rear and test mosquitoes for insecticide susceptibility and are particularly useful in situations where access to traditional entomological facilities is limited. For example, during a period of political unrest in Mali in 2012, the entomological monitoring program was suspended. Rapid deployment of a container insectary restored capacity for susceptibility testing and allowed IRS to continue as scheduled.
- PMI supports routine monitoring of the efficacy of antimalarial drugs in 17 of 19 focus countries in Africa (similar monitoring is funded by other donors in Burkina Faso and the Democratic Republic of Congo) and in a regional network of 36 sites in the Greater Mekong Subregion. Studies conducted by the Mekong network first heralded the emergence of ACT treatment failures and continue to provide early warning on the extent of drug resistance in the region.
- In Zanzibar (Republic of Tanzania), PMI and PEPFAR jointly supported the development of human resource information systems (HRIS). Data collected using HRIS were used to identify staffing vacancies in primary health care facilities. Unmet needs were identified for several

cadres of the workforce, including medical and clinical officers, public health nurses, and laboratory and pharmacy technicians. HRIS-based justifications for requests of additional staff enabled the Ministry of Health to secure funds to fill an additional 315 primary health care facility positions in 2011, 239 in 2012, and another 174 in 2013. Based on current vacancies identified using HRIS data, the government is now recruiting an additional 169 health workers.

Access to essential medicines and commodities

Working closely with Ministries of Health and National Malaria Control Programs, PMI supports supply chain management systems to ensure an uninterrupted supply of safe, high quality commodities including insecticide-treated nets, diagnostic tests, and drugs. Examples of PMI-supported activities include:

- PMI worked with Benin's Ministry of Health to reform its Central Medical Stores (CAME) and reduce stockouts of antimalarials at public health facilities and helped to design an electronic logistics management tool to improve the management of commodities. The tool has been adopted by 31 of 34 districts nationwide, with plans to expand to the remaining districts in 2014. Improved delivery of commodities was also accompanied by development of health leaders. After CAME became a financially autonomous not-for-profit organization in 2010, PMI supported a capacity building workshop to help provide the newly appointed management committee with skills for their new role.
- In Zimbabwe, PMI supports the Ministry of Health and Child Welfare to implement the Zimbabwe Informed Commodities Push system. This system automates data collection on malaria and tuberculosis commodities at health facilities and improves data accuracy and timeliness over the previous manual data entry process. The system has significantly reduced report turnaround time and improved the accuracy of consumption forecasts for ACTs. In 2012 the program was upgraded to accommodate a larger number of commodities and to integrate with Zimbabwe's Warehouse Management System to harmonize distribution of health supplies.
- To improve PMI's ability to respond to pending antimalarial stockouts, PMI maintains an ACT stock pile. The stock is available to fill immediate ACT gaps primarily identified through the application of two stock status tools, the PPMRm and the EUV. Both tools also provide information that strengthens the supply chain over the long-term. The PPMRm tracks commodities at the country's central level to improve forecasting and stock management. The EUV tracks stockouts at facilities to improve distribution of commodities within the country.
- Over 19 million long-lasting ITNs were distributed by PMI in FY 2013. In addition to mass campaigns, PMI supported continuous distribution methods and is testing various channels to maintain high, equitable, and sustainable net coverage. For example, net distribution in schools and by community organizations is being evaluated in Nigeria, dissemination of free nets for pregnant women is being piloted in Senegal, and electronic vouchers for highly subsidized nets have been introduced in Tanzania.

Building research capacity to inform health policies and programs

Building capacity for research that solves local health challenges is an important component of PMI's approach to strengthening health systems. PMI supports training of students and strengthens facilities

for malaria-related research. PMI strengthens research through activities at a number of local and national institutions, including:

- In Uganda, PMI funded the construction of an insectary and training facility at Gulu University. The insectary opened in 2012 and is used extensively for mosquito rearing and experimental studies, training students and staff in species identification, and research to track mosquito density, behavior, and infection rates. PMI is currently supporting the refurbishment of an integrated vector control laboratory in Rwanda, which includes research space for entomologists for the Rwandan national malaria program and students from Rwanda's School of Public Health who are interested in entomology.
- PMI is building capacity within the Zanzibar Malaria Control Program (ZMCP) to conduct molecular studies of malaria epidemiology which are currently outsourced to partner laboratories. Transitioning to an in-house laboratory will reduce costs and build local malaria research capacity. Equipment, education, and training are being provided so that molecular techniques can be used to identify insecticide resistance mutations in mosquitoes, determine malaria parasite prevalence, and assess mosquito feeding behavior through blood meal analysis.
- PMI supports the staff of University of Malawi's Malaria Alert Center to conduct operational research on malaria interventions. Current projects include an evaluation of cell phone messaging to assist health care providers with the management of malaria cases, an assessment of mosquito net longevity and durability, and efficacy studies of IPTp in the context of SP drug resistance.