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Rapid Diagnostic Tests for Malaria in Burkina Faso

An Assessment of Use and Management

By:

Sheick Oumar Coulibaly (Université de Ouagadougou)
William R. Brieger (Jhpiego)

With

Yacouba Ouedraogo (MCHIP)

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Table of Contents

Abbreviations and Acronyms	ii
Acknowledgments	iii
Executive Summary.....	iv
Background	1
Objectives of the RDT Assessment	3
Methodology	4
Study Population and Sample	4
Techniques and Data Collection Tools.....	5
Findings	6
Training.....	6
Trainers	6
Curriculum	6
Training Logistics.....	6
Training Bottlenecks Identified.....	7
Future Training Needs.....	8
Supply, Storage and Distribution	8
Storage Conditions.....	9
Stock Records.....	9
Summary of Supply Chain Bottlenecks	9
Supervision	10
Monitoring and Evaluation/Health Information	10
Health Worker Acceptance	11
Community Response.....	13
Discussion and Conclusion	14
Next Steps.....	14
References	16
Annex A: Schedule of Work	17
Annex B: Persons Met and Consulted	18
Annex C: Details of Health Services/Facilities Visited and Main Respondents at Peripheral Level	19
Annex D: Data Collection Guides	20
Annex E: Sample Regional RDT Training Schedule	30

Abbreviations and Acronyms

ACT	Artemisinin-based Combination Therapy
ASC	<i>Agent de Santé Communautaire</i> (Community Health Agent)
CAMEG	<i>Centrale d'Achat des Médicaments Essentiels et Génériques</i>
CHR	<i>Centre Hospitalier Régional</i> (Regional Hospital)
CISSE	<i>Chargé de l'Information Sanitaire, et de la Surveillance Epidémiologie</i> (Regional/District Epidemiologist)
CMA	<i>Centre Médical avec Antenne Chirurgicale</i> (District Hospital with surgical ward)
COGES	<i>Comité de Gestion</i> (Health facilities management committee)
CNRFP	<i>Centre National de Recherche et de Formation sur le Paludisme</i>
CSPS	<i>Centre de Santé et de Promotion Sociale</i> (Primary Health Care Facility)
DRS	<i>Direction Régionale de la Santé</i> (Regional Health Directorate)
DRD	<i>Dépôt Répartiteur de District</i> (District Pharmacy Store)
DS	<i>District Sanitaire</i> (Health District)
GFTAM	Global Fund to fight AIDS, Tuberculosis and Malaria
HRP2	Histidin Rich Protein 2
IB	<i>Infirmier Breveté</i> (second grade nurse)
ICP	<i>Infirmier Chef de Poste</i> (Person in Charge of CSPS)
IDE	<i>Infirmier Diplômé d'Etat</i> (first grade nurse)
MCD	<i>Médecin-Chef de District</i> (District medical officer)
MCHIP	Maternal and Child Health Integrated Project
MOH	Ministry of Health
NMCP	National Malaria Control Program
PEP	<i>Préparateur d'Etat en Pharmacie</i> (Pharmacy assistant)
pLDH	Plasmodium Lactate Deshydrogenase
RDT	Rapid Diagnostic Test
SFE	<i>Sage Femme d'Etat</i> (Midwife)
TDR	<i>Test de Diagnostic Rapide</i> (RDT)
TL	<i>Technicien de Laboratoire</i> (Lab technician)
USAID	United States Agency for International Development
TOT	Training of Trainers
WHO	World Health Organization

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Executive Summary

USAID's malaria program conducted an assessment in April 2009 to examine the situation of malaria prevention and control in Burkina Faso (USAID, 2009). The assessment results led to the development of a program to support the government of Burkina Faso with malaria prevention and control. The National Malaria Control Program (NMCP) has adopted a major shift in case management of malaria: malaria diagnosis now requires testing at the primary health care facility (CSPS) level and microscopy at the referral hospital level. To render this new approach operational, training began in 2008, and rapid diagnostic tests (RDTs) were introduced in peripheral health facilities in 2009. In the first year, RDTs were introduced in six health regions, comprised of 29 health districts, or approximately half of Burkina Faso's regions and health districts. The use of RDTs has since been rolled out to all regions.

To better identify strengths and weaknesses related to diagnostic capacities among providers and at health facilities and to propose pertinent solutions, a protocol was developed to assess diagnostic capacities from a sample of the health centers identified above. Findings from this assessment will inform the Ministry of Health through the NMCP (managerial level), trainers and supervisors (operational and care provider levels) with the relevant information for emphasis during training and supervision of providers. Additionally, findings will guide the focus of a future comprehensive representative assessment.

The general objective of the exercise was to assess malaria diagnostic capacities, procedures and actual use in health centers (peripheral and referral centers). This report constitutes an inventory of malaria RDT use and management in a context of their introduction aimed at improving malaria control in Burkina Faso. It contains the findings of field visits in different health regions, districts and facilities and meetings with stakeholders. The report follows the structure of the protocol developed for data collection and the presentation of preliminary results.

The visits to the field were carried out in July 2010 by a team including: an independent consultant, Dr. Sheick Oumar Coulibaly; a NMCP representative, Mr. Idrissa Zeba; Jhpiego headquarters Senior Technical Advisor for Malaria, Dr. William Brieger; Jhpiego/Burkina Program Officer, Mr. Yacouba Ouedraogo; and a medical student from the University of Ouagadougou, Miss Ida Paule Thiombiano. It consisted of visiting three health regions, five health districts and 10 health facilities. The team met approximately 80 people and conducted interviews with more than 40 respondents. This report is drawn from interviews, documentation review and observation. The assessment was primarily qualitative in nature in order to give an overall picture of malaria diagnostic services and the process of RDT supply, storage and use.

The assessment's main findings include a lack of use of RDTs by health care providers to manage and treat malaria and a significant need for retraining. In addition, to ensure standardized use of RDTs, job aids must accompany training and the RDT component of the national malaria case management guidelines should be strengthened and disseminated. In conclusion, it is recommended the ministry should promulgate an official policy on RDT use, disseminate it and enforce it through sufficient supervision.

Background

In Burkina Faso, as in most malaria endemic African countries, malaria is reported to be the main cause of morbidity and mortality among children and adults. More than three million cases of malaria are reported annually for a population of about 15 million. Malaria represents about 35% of all patient consultations, 41% of all hospitalizations and 38% of deaths in the country. Malaria transmission is seasonal in much of the country. Figure 1 shows the three main transmission zones.

Pregnant women and children under five years are most vulnerable to malaria, which provokes elevated rates of maternal anemia and low birth weight. According to the National Malaria Control Program (NMCP), in children under five years of age, malaria constitutes 45% of patient visits, 55% of hospitalizations and 57% of deaths (NMCP, 2007). It is estimated that only 27% of simple malaria is properly treated within 24 hours.

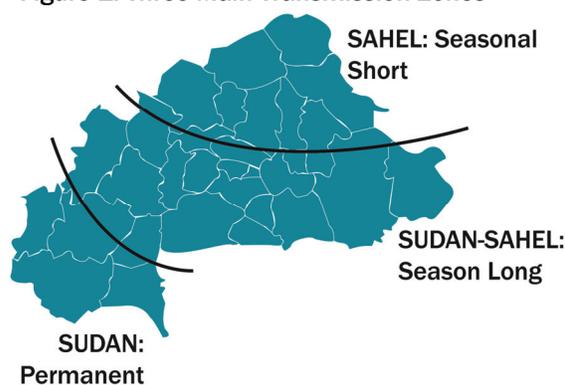
Preventive behaviors are not widespread, especially among those at highest risk: utilization rates of insecticide-treated bed nets among pregnant women are estimated at 28% and among children under five only 23%. Following findings of higher rates of chloroquine resistance, the Burkina Faso national treatment policy changed in 2005 to the use of Artemisinin-based Combination Therapy (ACT) in adults and children and quinine in pregnant women. In training materials arising from this policy, rapid diagnostic tests (RDTs) were also addressed. (NMCP, 2005).

Due to lack of ACTs for large scale use, the implementation of the new policy was rolled out slowly with the support of country health partners such as the World Health Organization (WHO), U.S. Agency for International Development (USAID) and the United Nation's Children Fund (UNICEF). To emphasize the quality of malaria case management, and also to protect the ACT from the threat of resistance and avoid excess use for presumptive treatment, the new policy promotes the use of RDTs prior to treatment, including in peripheral health facilities and communities where microscopy is not available. Until supplies of RDTs are increased, the policy of RDT use is being applied only to persons aged more than five years.

In 2006, the NMCP started receiving RDTs from its partners, first through the Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM) and, more recently, from USAID. RDTs were first rolled out in six pilot regions in 2008 using supplies acquired through GFATM. Cascade training in 2008 began with the formation of a national core training team. Training of regional trainers followed in the pilot regions. Regional training teams provided training to district level trainers. The district trainers then trained at least one person, usually the officer-in-charge (*Infirmier Chef de Poste*, or ICP) from each front-line health facility. Since 2010, USAID has made RDTs available for all regions and training has occurred in other regions using the same cascade approach.

USAID's malaria program conducted an assessment in April 2009 to examine the situation of malaria prevention and control in Burkina Faso (USAID, 2009). The assessment results led to the development of a program to support the government of Burkina Faso with malaria prevention and control. USAID's annual Malaria Operational Plan focuses on programmatic and operational

Figure 1. Three Main Transmission Zones



weaknesses, needs and suggested approaches in the following areas: provision of commodities; prevention and treatment of malaria; diagnostics of malaria, including use of RDTs.

In response to these priority areas, the USAID malaria program is placing emphasis on health systems strengthening and capacity development for malaria control. Jhpiego, through the Maternal, Child Health Integrated Program (MCHIP), has been identified by USAID to provide technical and programmatic support to address malaria prevention and control comprehensively with a focus on diagnostics, treatment and malaria in pregnancy. MCHIP works in close collaboration with NMCP and the Family Health Directorate, as well as other Roll Back Malaria Partners in Burkina Faso, including WHO, GFATM, Plan Burkina Faso, DELIVER and Research Triangle Institute.

The three levels of the national health pyramid (central, 13 regions and 63 districts which contain nearly 1600 health facilities) are the focus of interventions coordinated with the Ministry of Health (MOH). At the district level, the partnership includes district health teams and health management committees (COGES) from health facilities. Emphasis is being placed on pregnant women and children under five who bear the heaviest burden of malaria.

The preparatory phase of the program included a baseline assessment carried out jointly by USAID, MCHIP and DELIVER in October 2009. The assessment results revealed weaknesses in training and supervision of providers in diagnosis of malaria, specifically use and interpretation of RDTs and decision-making for treatment. These results corroborate those of the USAID assessment from April 2009.

It should be noted that the NMCP has adopted a major shift in case management of malaria: malaria diagnosis requires a test at the primary health care facility (CSPS) level and microscopy at the referral hospital level. To render this new approach operational, training began in 2008 and RDTs were introduced in peripheral health facilities in 2009. In the first year, RDTs were introduced in six health regions, comprised of 29 health districts, or approximately half of Burkina Faso's regions and health districts. The use of RDTs has since been rolled out in all regions.

In total, 647 CSPSs in the pilot regions were expected to use RDTs in 2009. To better identify strengths and weaknesses related to diagnostic capacities among providers and at health facilities and to propose pertinent solutions, a protocol was developed to assess diagnostic capacities from a sample of the health centers identified above. Findings will inform the MOH through the NMCP (managerial level), trainers and supervisors (operational and care provider levels) with the relevant information for emphasis during training and supervision of providers. Additionally, findings will guide the focus of a future comprehensive representative assessment.

Objectives of the RDT Assessment

The general objective of the exercise was to assess the malaria diagnostic capacities, procedures and actual use in health centers (peripheral and referral centers). The specific objectives included the following:

1. Document the type of human resources available in health centers and the capacity for malaria diagnostics.
 - This involved identifying the staff in charge of RDT use and determining their capacity to use the tests, as a function of their background and prior training/experiences. It also assessed how RDTs are used in case management of clients.
2. Determine the service readiness of health centers for implementing RDTs.
 - This objective focused on the material, logistical and human resources required to ensure adequate and reliable diagnostic testing. It included an assessment of the management of commodity stocks for diagnostic tests (supply, stocks, management documents, reporting), as well as RDT knowledge and performance.
3. Analyze the RDT technical skills capacity in health centers (test use, collection system, data analysis and reporting).
 - This objective involved providing critical and objective judgment of the diagnostic test practices of providers. Providers were the object of non-participative observation to identify if the process they are following is technically sound.
4. Document the current quality assurance mechanism in health centers as it applies to malaria diagnostics (internal control, internal and external supervision, continued training and capitalizing on these).
 - To achieve this objective, particular attention was paid to all procedures and mechanisms implemented by the health center and referral facilities to ensure/maintain the quality of testing at each step of the process (supply, storage, delivery to the center/facility, use of test, use of test results).
5. Document the use of RDTs during the previous six months in health centers.
 - This objective was achieved through a document/record review completed at the facility level.
6. Assess the capacity of referral level laboratory facilities to provide microscopy and supervision in support of health facility malaria case management.
 - This objective focused on the material, logistical and human resources required to ensure adequate and reliable microscopy and supervision at the referral level.
7. Provide suggestions/recommendations to improve malaria diagnostics through the identification of relevant information to be emphasized during training of supervisors and supervision of providers trained by Jhpiego.

The expected results obtained from these objectives included documentation of the following:

1. Type of human resources available and their capacities for malaria diagnostics
2. The technical capacity of health centers for malaria diagnostic testing
3. The process for conducting tests in health centers
4. Management of commodity stocks for diagnostic tests
5. Use of RDTs over a six-month period

Methodology

The assessment was primarily qualitative in nature in order to give an overall picture of malaria diagnostic services and the process of RDT supply, storage and use. Data were collected through in-depth interviews, health worker performance observation and review of records. Some quantitative data was collected in terms of RDT use and supplies from existing clinic, district and regional records.

STUDY POPULATION AND SAMPLE

The assessment focused on the six regions where RDTs were first rolled out and where there was greater likelihood of determining their use and factors associated with use over a longer period of time. Due to the existence of three distinct epidemiological transmission zones, the assessment aimed to obtain information on RDT use in each zone as described in Table 1.

Table 1. Malaria Transmission Zones and Regions where RDTs were First Used

Zone	Region	Districts
Soudan Permanent	Cascades	Banfora, Sindou, Mangodara
	Hauts Bassins	Dandé, Lena, Karangasso Vigué, Orodara, Houndé, Dafra, Do
	South-West	Dano, Diébougou, Gaoua, Batié
Sahel Long	Boucle du Mouhoun	Boromo, Solenzo, Nouna, Dédougou, Tougan, Toma
Sahel Short	North	Titao, Séguénaga, Gourci, Yako, Ouahigouya
	Sahel	Dori, Sebba, Gorom Gorom, Djibo

One Region was chosen per zone for the assessment visits as follows:

- South-West Region: Gaoua (representative of the Sudan Permanent transmission zone)
- Boucle du Mouhoun Region: Dédougou (representative of the Sahel Seasonal Long transmission zone)
- Sahel Region: Dori (representative of the Sahel Seasonal Short transmission zone)

In each selected health region corresponding to one of the three transmission zones, two districts were selected giving a total of six health districts. In each selected district, one CSPS was selected. (See Annex A showing the assessment schedule and Annex C showing the regions, districts and facilities visited and respondents met). The actual sites were chosen based on practical and logistical reasons. Since it was not possible to visit two districts in Boucle du Mouhoun Region, two health facilities were visited in one district.

At the regional level, effort was made to locate the regional health director, the regional pharmacist and the regional officer in charge of health information and epidemiological surveillance corresponding to the regional epidemiologist. Regional hospital staff who may have been involved in RDT cascade training were also identified. The regional hospital was visited in the Sahel Region.

Within districts, the following district health management team members were identified: the medical officer, the person responsible for RDT supervision, the laboratory staff of district hospitals who may have been involved in cascade training, and the district drug store (*Dépôt Répartiteur de District*, or DRD) supervisor. At the CSPS level, the ICP was interviewed, and two providers (one trained by the district level trainers and one not formally trained) were interviewed and observed when performing RDT.

RDT supply and use records were reviewed where available at all three levels (regional, district and facility). Such records included letters showing receipt and disbursement of RDT supplies, summary forms for malaria treatment and RDT use and, at the frontline level, the actual registers where malaria case management was recorded for individual patients.

TECHNIQUES AND DATA COLLECTION TOOLS

Data collection was done through:

- Document review, particularly registers and reports (monthly, quarterly and annual activities);
- Observation of storage facilities and RDT use performance; and
- Interviews of national, regional, district and CSPS staff.

A data collection tool (Annex D) was developed in part from the Improving Malaria Diagnosis tools developed for USAID (for quantitative portions). It included interview guides, observation matrix and check lists. After being pretested in the Plateau Central Region (in the district of Ziniare), the assessment tool was found to be useful and appropriate in their pre-tested form.

Findings

The findings resulted from an analysis of information and data collected in all the selected regions and districts. No specific difference between facilities was noticed between the different malaria transmission zones and epidemiology.

TRAINING

Trainers

A core national RDT training team was formed and trained (see end of Annex E for composition of national training team) with participation from the NMCP, the National Public Health Laboratories and the CNRFP (*Centre National de Recherche et de Formation sur le Paludisme*) research and training center. This was followed by a series of training activities at the regional, district and CSPS levels, and on-site training within the CSPSs. This core team trained regional training teams in three batches during mid-to-late 2008. The choice of regional trainers varied, but included regional health directorate pharmacists and regional hospital laboratory pharmacists or/and technologists.

District training was conducted by regional teams in three batches. Each regional training team trained district trainers from late 2008 into 2009. District trainers also varied and included district hospital laboratory staff and pharmacists.

District trainers then trained ICPs in one or several batches depending on the size of the district. In a few cases, more than one person was trained per facility. Upon returning to their facilities from the training, ICPs organized orientation sessions for all the staff involved in malaria case management.

Curriculum

The basic regional training was a three-day event using slides for theoretical aspects, and practical sessions for actual RDT skill/use. All participants were given electronic copies of the slides, but neither printed copies of a Participant's Guide for malaria case management (including use of RDTs), nor an RDT use algorithm were provided.

There was no formal training of trainers (TOT) component to the training at any level to help participants learn and plan how to conduct training at the next level once they returned to their facilities.

Trainees expressed appreciation for the practical sessions. Some mentioned that the use of malaria RDTs had similarity with the HIV rapid test all CSPSs now perform.

Training Logistics

Trainees were given a compact disk that contained the slides and some relevant documents, including the national malaria case management guidelines (which have a section on RDTs). Printed training handouts and job aids were not provided. Some trainers printed out the RDT use algorithm (see Figure 2) found in the case management guidelines provided on the compact disk.

The regional TOT was designed to take three days. Regional-level training of district trainers replicated the process of the regional TOT. Annex E contains the schedule for the regional training that took place in Ziniare in August 2008. This was not a formal TOT in the sense that it stressed technical content rather than the process of how to conduct effective adult learning experiences.

Within districts one finds variation of how the training was carried out. Usually, three-day sessions were held with ICPs, in some cases at the end of training sessions on malaria case management. In Dedougou and Gaoua, RDT was integrated into a five- to seven-day case management revision training. Dedougou also held three training rounds covering at least one additional staff per facility. District trainer sessions replicated the structure of the regional training with theory, practice and electronic handouts.

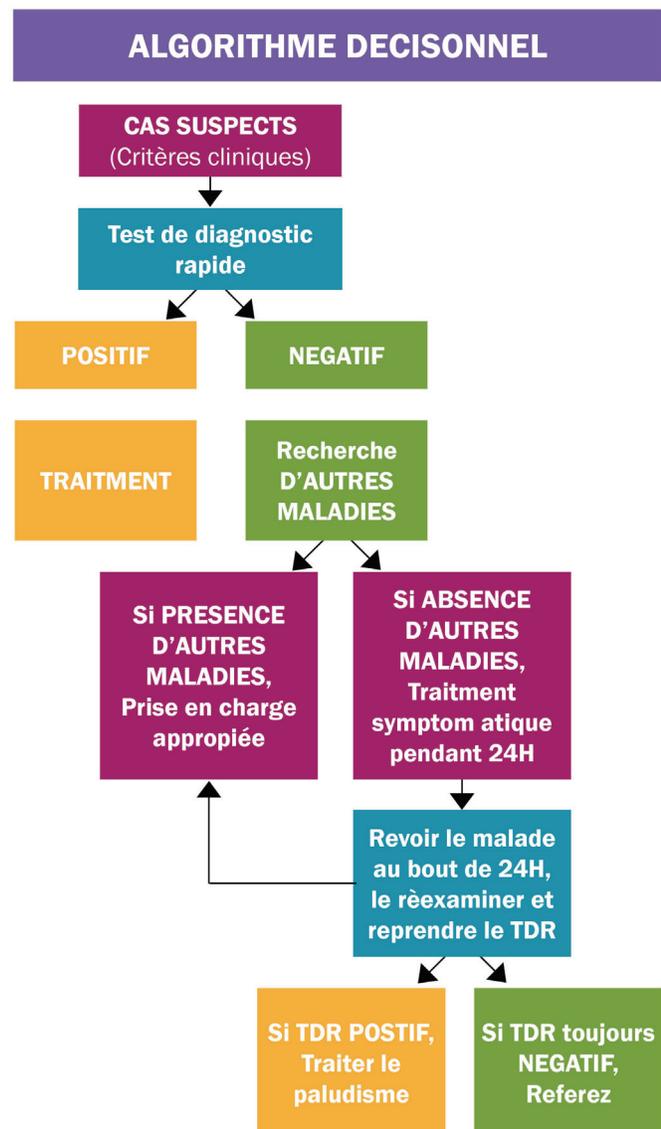
ICPs themselves oriented their staff in an afternoon, with a practical orientation. Training of ICPs again replicated the process, also without attention to methodology for orienting their workers.

Training Bottlenecks Identified

Problems linked to the training were identified from the assessment. The most notable are the following:

- No TOT module was included in the training sessions. Thus, there was no clear guidance on how trainers should conduct training at the next level.
- No formal handouts were given, although some trainers made photocopies of the RDT algorithm which were found in the appendix of the case management guidelines. Copies were seen on some clinic walls.
- Training did not attend to standardized RDT recording. In the field, clinics devised various means of writing RDT use into their treatment registers. The most useful appeared to be using a red pen to write “RDT+” or “RDT-” in the register.
- The TOT workshop agenda shows only 30 minutes of the three-day training was devoted to appropriate RDT storage conditions and the consequences of heat and humidity (Conditions de transport et de conservation des TDRs). As seen below, this content did not appear to have been internalized by the trainees at varying levels.
- The main message taken home from training was that a negative RDT does not necessarily mean a person does not have malaria. This exception has become the rule, such that health workers prefer to use their clinical judgment or clinical algorithms to treat “simple malaria.”

Figure 2. RDT Algorithm from Case Management Guide



- The need for differential diagnosis to determine and treat other causes of fever was not strongly featured in training. Thus, health workers, in their desire to provide help, naturally took the simplest route and gave the available anti-malarial drugs.

Although regional and district pharmacists play the most direct role in RDT provision to the frontline health facilities, these staff were not part of the TOT in all areas. In fact, regional and district hospital lab staff who do not use RDTs in their regional and district hospitals and have no role in CSPS/health facility supervision were most often trained as trainers. In confirmation of this concern, DELIVER mentioned receiving complaints from the regional pharmacists that they were not involved in the RDT training organized in their regions.

Future Training Needs

- Better job aids are needed to accompany training.
- The RDT component of the national malaria case management guidelines should be strengthened and disseminated to providers to ensure standardized use of RDTs.
- Skills on effective teaching/training methods are needed for those involved in TOT.
- ICPs need skills on how to train staff when they return to their facilities.
- All persons involved in integrated supervision need to learn about RDTs so they can pass this information on while supervising.
- A standardized approach to recording and reporting RDT is needed and should subsequently followed.
- More detailed training should be provided on proper and safe supply management and storage conditions, including expiration date monitoring (see findings below).



SUPPLY, STORAGE AND DISTRIBUTION

The first stocks of RDT arrived in 2009. These were pLDH type (detecting both *P. falciparum* and other species, green boxes), provided through GFATM and were delivered by CAMEG (*Centrale d'Achat des Médicaments Essentiels et Génériques*). The initial quantities distributed were low and unable to guarantee long-term coverage.

In June 2010, USAID stocks (HRP2 type, detecting only *P. falciparum*, blue boxes) arrived in two batches and were delivered directly through the MOH to Regional Pharmacy Stores as CAMEG had no space. Stocks were allocated to districts based on recorded number of 2009 malaria cases. Districts collected from their regions.

Both types of RDTs were found during the assessment. Although there were none of the original RDTs that detected *P. falciparum* and *P. vivax* at the regional and district levels, several clinics had these in their distinctive green boxes. These old stocks were slated to have lasted three to six months originally, but had been in the clinics for at least a year. The expiration date on those boxes was September 2010, but frontline health staff was unaware that the date was written on the box, let alone was fast approaching. The new falciparum-only RDTs in their distinctive blue boxes had not reached all districts and clinics, but were stockpiled in the regional pharmacy stores. Since some of the old stock was still unused, there apparently was not strong pressure for collecting new supplies from the region or district stores. The stock provided in June to the regions was said to be enough to last for one quarter if used appropriately, but at current use rates, these may still be sitting on shelves next year.

Storage Conditions

The storage temperature range mentioned on the products boxes was 1° to 40°C. The assessors found a variety of storage conditions that were not ideal: from keeping in the refrigerator to keeping in hot conditions, sometimes exceeding 40°C. Few stores had air conditioners and/or fans, and some had louver windows but not fully opened. In one location, the pharmacist sat in an air conditioned office while the RDTs were located in a store with solid metal locked windows and doors. While one clinic kept RDTs in a refrigerator, most said there was no refrigerator or, if there was one, there was no room in it. In the CSPS, RDT boxes are kept in variable places: in bigger boxes on the ground, on work surfaces, in cabinets or on shelves in the drug store (*dépôt pharmaceutique*) under natural ventilation and changing temperatures. In one village with no electricity, the pharmacy store fortunately had some trees around it and all windows and doors had louvers.

Thermometers were not seen, so staff had to judge ambient temperature subjectively. Unfortunately, there was little evidence through discussions to indicate that health workers appreciated the damage that high temperature and humidity could do to the RDTs.

Stock Records

At regional and district pharmacy store levels, there was recordkeeping in terms of supplies distributed to the next level, usually in the form of a sheet of paper listing the district (or facility), the number of RDT boxes to be provided and a place to sign when these were collected. No systematic book or electronic record was mentioned. Stock records for RDTs at the health facility level were not systematic and no clear directive was given for this. The rate of use varies significantly. While in some CSPS and districts, older stock was still found, some facilities stocked out and were requesting more. So redistribution was organized in some districts. Districts sometimes kept security stocks to provide as back-up or in emergencies.

No attention was given to expiration dates. While some health agents were aware, some were surprised that the GFATM stocks (green boxes) had an expiration date of 15 September 2010.

Only one person mentioned that new USAID stocks were intended to be enough for three months based on clinic malaria records and that evidence of RDTs used was needed to get more stock. At the time new USAID supplies arrived, facilities either had experienced RDT stock-outs in recent months or still had the nearly expired old stocks supplied through the GFATM. Two tranches of stocks had been delivered by USAID to date directly to the regions, but not all districts and not all CSPS have collected their stock. While at national level there were worries about insufficient stock and no supplies of GFATM stock from February through May 2010, at the peripheral level there does not seem to be a sense of urgency to use them even though this is malaria season. This is consistent with evidence of rare use of RDTs in the districts and facilities.

If used correctly on all suspected cases in persons more than five years of age, the new USAID stocks should last three to four months. They would last much less if the policy changes to include all patients including those under five years of age. Current use rates means that unfortunately the newly delivered USAID stocks may still be on shelves next year.

Summary of Supply Chain Bottlenecks

- Lack of uniform stock recordkeeping processes
- Storage conditions where health and humidity threaten efficacy of RDTs
- Lack of health manager awareness of RDT expiration date and its implication
- No evidence of forecasting and demand for stocks from facility and district level, leaving stocks waiting in storerooms when these could be used in patient care

SUPERVISION

There are no specific supervisory protocols for RDTs. Malaria supervision is generally included in the “integrated” supervision procedures and tools. This is conducted by the district management team members twice a year and looks at many aspects of management and diseases control, both at district and facilities level. The supervisory team could also vary and can consist of all district health team members plus some clinical staff from the district hospital. As currently practiced (focusing on illness case management through observation), integrated supervision covers malaria case management including RDT use only if malaria cases are being treated while the supervisory team is present.

There is a separate quarterly NMCP supervisory checklist that includes three items on RDTs. The malaria supervisory checklist may be used by the district epidemiologist (*Chargé de l'Information Sanitaire, et de la Surveillance Epidémiologie*, or CISSE) or another team member involved in health information or disease control. These supervisions are not adapted to monitor RDTs use and management and address only the three points below:

- Availability of RDTs for those over five years of age
- Adequate use of RDTs
- Availability of used RDTs for quality control

Of concern is the fact that persons who served as RDT trainers may not in fact be involved in frontline health facility supervision, and those who do the supervision are unlikely to have had updated orientation to RDT use, storage and monitoring. Therefore, most of the supervisory team may lack competencies to monitor RDT use. While district pharmacists manage the stocks, not all were trained as RDT trainers. Although some district lab staff served as trainers, their supervisory role may be limited by their small numbers.

Furthermore, there is no quality control monitoring. This could reinforce incorrect beliefs regarding the efficacy of RDTs for diagnosis. No clear indication was given for monitoring. While one ICP kept old RDTs in case a supervisor came, another disposed them in a sharps container after use.

The major bottleneck for supervision is the fact that there is no formal system to monitor and provide quality control for RDT use.

MONITORING AND EVALUATION/HEALTH INFORMATION

In the assessed facilities, there was no formal RDT recordkeeping. Staff had not been told how to record the RDT use and results, and existing registers do not have a column for test results. Some staff simply do not record use and results (or forget to do so), and some do it their own way. This makes it difficult to know how RDTs are used and establish statistics. For those who were recording, two were found having a separate register with date, patient information and results mentioned.

Some wrote results in the consultation register usually in red ink, but also in the same blue or black ink used to record symptoms and other patient data. In the absence of a standardized procedure for RDT recording, the use of red ink to note “RDT+” or “RDT–” in the treatment register is a useful practice that could form the basis for standardized recording procedures. Ironically, district summary report forms did include RDT use data, implying that health facilities performed some type of count of their treatment records prior to submitting their own summary reports.

Table 2. ACT and RDT Summary Report, Toma District Q2 2010

Age >5 Years	Number
Malaria Simple	4734
Malaria Severe	412
Microscopy Done	139
Microscopy +	113
RDT Done	1460
RDT +	975
ACTs Given	4844
Mouhoun Region	

Table 2 provides an example of district summary data on malaria, including RDT use. Although one cannot link RDT use directly to prescription of ACT, it is possible to determine that around one-third of suspected malaria cases are actually tested. Observation of treatment registers documented treatment with ACT even when RDTs were negative. The long duration of RDT stocks in most clinics can therefore be attributed to infrequent use.

In summary, the major bottleneck in monitoring and evaluation (M&E) is lack of standardized recording formats at the frontline facility level.

HEALTH WORKER ACCEPTANCE

All the RDT users stated that RDTs are very welcome as they make diagnostic more sure, easy and quick because the patients no longer have to go for microscopy far from their home. RDTs were also found to be easy to use, even though observation revealed that RDTs were not used in most cases of febrile illness in patients five years of age and older as policy requires. Treatment records show that RDTs were used rarely and irregularly, hence some of the GFATM stock remained in some locations. And adults with symptoms of “simple malaria” were often not tested. In sum, seemingly positive attitudes toward RDTs were not matched with actual use.

Although the national case management guidelines seem to be understood, the component of RDT use is yet to become routine. This may be because RDT results do not conform to expected outcomes. For example, a health worker asked the team why there were more negative RDT results in the dry season when people still presented with “fever.” Health workers still act on the basis of the former clinical malaria operational definition. As they explain, they “very often” prescribe antimalarial drugs as they have done in the past. They seem to have only a rudimentary understanding of malaria pathology and seasonality.

Health workers prefer to treat malaria based on clinical experience and/or national case management algorithms, which were developed at a time when RDTs were not widely available. Box 1 shows the definition of “simple malaria” that leads most health workers to prescribe ACTs without RDT evidence. There was no logical link between RDT result and

Box 1. Definition of Simple Malaria from 2007 Case Management Guidelines

Le paludisme simple se définit par :

- La présence d'une fièvre (température axillaire de 37 ° 5 ou plus, ou corps chaud, ou antécédent de corps chaud dans les 72 dernières heures)
- Une Goutte Epaisse ou TDR positifs (si réalisables)
- Sans aucun signe de gravité (voir signes de gravité ci-dessous)
- Les symptômes courants tels les courbatures, les myalgies, les céphalées, les nausées et vomissements passagers, la diarrhée, les douleurs abdominales, etc. peuvent être présents
- **Le cas de paludisme simple peut être précocement et correctement pris en charge au niveau communautaire**

ACT use for treatment. Review of records showed that frequently, if RDTs were performed, a negative test did not prevent treatment with ACTs. The common reason given for this behavior was that, “clinically this sounds like malaria” or “because no other diagnostic could be done.” Algorithms do address other febrile illnesses like pneumonia, so it appears that health workers are taking the easy way out and giving ACTs for any fever, and not actually being clinically rigorous.

There were a few complaints about RDTs. One health worker said RDT results took too long, although the alternative to sending the patient to a lab at the district hospital was much longer. Health workers need orientation in how best to use their time so they are not sitting at their desk for 15 minutes waiting for the results. Another important worry was stock-outs leading staff to use RDTs only in uncertain circumstances (i.e., when the symptoms don't point to “simple malaria,” which they are willing to treat using only a clinical algorithm).

Observation of health workers performing the RDTs allowed the team to see that the general use steps are understood, but the preparatory and follow-through steps were weak. For example, hand washing before performing RDT is not usual. Some forgot to wear gloves. Time is not counted before reading the result. The expiration date was never read. Even in simulated form, most forgot to say that they would record the results and instruct the patient on the findings and treatment. In one facility that still had the older GFATM stocks, the lancets had been misplaced, and the health worker used a small syringe instead.

Some health workers are not really involved in using RDTs. In one facility, although all staff had been oriented to RDTs, one staff member had been designated as the RDT person. That person was off duty on the day of the team's visit. Another person tried to demonstrate RDT use, but had to review the package insert first. She could not remember that one needs to wait 15 minutes before reading the result.

The use of RDTs is free of charge but involves the need of consumables such as gloves. The health system provides limited supplies of gloves. Health staff complained that when supplies run out, they had to purchase the gloves themselves in many cases. This expense and supply problem could inhibit frequent use.

The current policy is to use RDTs only with people five years and older, but will change soon because the NMCP is in the process of adapting WHO guidelines to test all age groups. The general practice in all clinics was when small children presented with “simple malaria” they were always treated with ACTs without RDT. Since patients five years and older were also treated based mostly on suspected malaria, it seems unlikely that health workers will be easily convinced to start using RDTs regularly with small children. Even if they do, this added portion of the population will mean that RDT stocks may not be adequate.

Another concern is what happens when RDTs are negative. The training schedule as outlined in Annex E does not directly confront the issue of differential diagnosis and what health workers should do when a febrile illness is not malaria. Health staff during interviews assured the study team that there are adequate drug supplies to manage other illnesses such as respiratory infections, and treatment registers confirmed that when “fever” was reported by a patient in conjunction with a symptom like “cough,” the patient was treated with antibiotics, not ACTs, but the overreliance on clinical algorithms and judgment to treat “simple malaria” without using RDTs not only points to possible ACT wastage, but lack of disease-specific appropriate treatment.

Although community health agents (*Agents de Santé Communautaire*, or ASCs) used to provide community-based management with chloroquine, this task stopped with the introduction of

ACTs. To date, ACTs have not been rolled out at the community level through ASCs. The revised guidelines for community agents dated 2009 described presumptive treatment using artesunate-amodiaquine. ASCs are encouraged to refer patients who do not improve, have difficulty eating and drinking, vomit or have convulsions. The unstated assumption is that such patients may get better diagnosis (including RDTs) at the CSPS level.

In summary, the major bottleneck in health worker acceptance of RDTs is the ingrained reliance on algorithms and clinical judgment to diagnose “simple malaria” and provide ACTs without RDT use. A basic skill level in RDT use exists and can be improved through refresher training, but without stronger policy guidance, health workers will take the easy way and use algorithms to treat malaria.

COMMUNITY RESPONSE

Generally clinic staff stated that people accepted RDT use without question and viewed it as just another clinic procedure. Some even come to request the test. In one facility, staff said people mentioned pain from the lancets.

Staff mentioned that there are adequate drug supplies of other medications should negative RDT results point to the need to identify another disease as causing the patient’s problems. The public in theory should not be disappointed by not receiving medicine for their illnesses, even when RDT results do not point to malaria. Health workers, therefore, may need more training in differential diagnosis as well as in communicating with patients about test results and the implications for appropriate treatment.

To begin the process of rolling out ACT at the community level, new training materials have been developed so that ASCs will begin to provide malaria treatment again with ACTs. However, at present there are no plans for RDT use at the community level, and so community members will face a dichotomy: RDTs if they go to clinic leading to the possibility of no treatment, no RDTs and provision of ACTs to all whose symptoms match the algorithm if they seek care closer to home. This could lead to lower acceptance of RDTs in the future as well as some dissatisfaction with community-based care if RDTs are eventually introduced to ASCs.

Discussion and Conclusion

The main lesson from this assessment is that health workers rarely use RDTs when they should; that is, in all suspected cases of malaria. They still prefer clinical diagnosis or algorithms and their clinical judgment. While some respondents were hopeful that health workers would come to accept RDTs in time, there was little evidence after more than a year of use in the pilot regions that RDTs have become a normal part of clinical practice. Supplies that should have been exhausted months ago, based on documented “simple malaria” in treatment registers, remain on the shelves.

RDT use has not been officially legitimized. RDTs are presented only in an annex to the malaria case management guidelines. Trainers have led health workers to believe that RDT results are probably wrong as the test result is sometimes different from their expectations. It will likely take a specific national directive, as was done in Mozambique, to get health workers to use RDTs often and correctly. Adequate stock of RDTs and consumables such as gloves must then be made available so that health workers can actually follow such a directive.

Health workers are prescribing ACTs when they should not. The majority of negative RDT results are being ignored. This is likely related to the many weaknesses and gaps that were found to the training where an attitude of RDT distrust was engendered. As a consequence, initial RDT stock provided in 2008 and 2009 were still being found in some clinics at the time of the assessment instead of running out long ago as would have been expected were they used correctly.

Even if stocks were used correctly, there is no uniform recordkeeping system to document RDT use and the treatment decisions that follow application of an RDT. Some clinic staff have developed creative ways to record RDT use, and these locally devised ideas should be standardized and disseminated.

The routine supervision of facilities does not specifically include RDTs, and there is no quality control system in place. Most supervisors lack experience and orientation in RDT use, stock keeping and recordkeeping.

The assessment of use and management of RDTs for malaria in Burkina Faso was conducted in three health regions. It was found that the management of RDTs is not uniformly applied in the facilities and includes a lot of incorrect practices, with risk of deterioration of quality. The use of RDTs is not yet in the habits of caregivers, and the tests results do not positively influence the prescription of ACT. Consequently the use of ACTs is not rational. This situation could be linked to the weaknesses of the training of health care providers, the lack of clear directives for use and management, inadequate attention to RDT use during routine supervision and lack of a system of quality control.

NEXT STEPS

To address the issues above, there is a need to retrain health workers with very clear messages on the management (storage, records, indications and patient counseling), the use of RDTs and test results. The training should also provide trainers with job aids, and skills to train the lower level health workers and collaborators. The NMCP should urgently introduce RDT in the supervision of malaria control activities, and an effective system of quality control.

In addition to retraining of providers, formative and supportive supervision on RDTs is needed. To be able to effectively supervise on RDTs, supervisors need an appropriate orientation to RDTs. Ideally, regional and district trainers should include persons who actually supervise clinic staff who use RDTs.

In addition to creating job aids to accompany training, the RDT component of the national malaria case management guidelines should be strengthened. However, incorporating RDTs into case management guidelines is insufficient. The Ministry should also promulgate an official policy on RDT use, disseminate it and enforce it through proper supervision. It will be hard to change the behavior of health workers around RDT use if they do not see the Ministry taking RDTs seriously.

Training must stress more on forecasting supply needs and on storage conditions. In addition, some investment in providing generators, air conditioners, and fans at regional and district levels of storage is required. Recommended simple clinic design features as outlined in manuals developed by WHO/DELIVER could be incorporated into frontline clinics where electricity supplies are infrequent or non-existent.

M&E and service statistics recording and reporting needs strengthening. Local clinic ideas such as using a red pen in the treatment records should be validated and developed into standard procedures to simplify the data processes.

Professional associations need to reinforce RDT acceptance. The results of the assessment should be shared with medical, nursing and other health practitioner associations. The possibility of encouraging correct and regular RDT use in the private sector should also be explored.

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Annex A: Schedule of Work

Mon	Tues	Wed	Thu	Fri	Sat
		14 th Pretest Ziniare District	15 th Revise instruments Set appts	16 th Set appts	17 th
19 th NMCP, USAID brief	20 th Sahel Region, Dori	21 st Gorom - Gorom District	22 nd Dori District	23 rd Mouhoun Region Dedougou	24 th Dedougou District
26 th Review Activities	27 th Southwest Region, Gaoua	28 th Batie District	29 th Gaoua District	30 th USAID debrief	31 st Report Writing

Annex B: Persons Met and Consulted

Name	Position/Location	Contact Information
Patrice A. Combarry	<i>Maîtrise en Santé Publique, Coordonnateur, Coordination Nationale de la Lutte Contre le Paludisme</i>	Cell (226) 70.71.12.84 patricecombarry@yahoo.fr
Victor Nana	Senior Malaria Specialist, USAID Ouagadougou	Cell (226) 72.33.10.78 NanaV@state.gov
Ambassador Charles H. Twining	<i>Chargé d 'Affaires a.i. of the United States of America</i>	
Richard Kalmogo	Directeur Général, Centre Hospitalier Régional de Dori	Cell (226) 70.23.37.04
Ouédraogo Théophile	Pharmacien régional Dori	
Bazié Bayon	Gérant DRD Dori	
Zombo Soumaila	Tech. Labo CHR Dori	
Nagalo Yacouba	MCD, Gorom Gorom	
Yaméogo W. Claire	Pharm, DRD Gorom Gorom	
Ilboudo Awa	IB, CSPS Urbain Gorom Gorom	
Nikiema Alassane	ICP, CSPS Urbain Gorom Gorom	
Bazié Olivier	ICP, CSPS Salmossi	
Bourgou Constant	ICP, CSPS Oursi	
Ouédraogo Djingri	ICP, CSPS Tokabangou	
Héma Mamadou	ICP, CSPS Gangaol	
Da Barthélemy	CISSE / interim DR, DRS Mouhoun	
Sougué Mamadou	Pharmacien régional Mouhoun	
Ganama Seydou	MCD, DS Dédougou	
Sanou Aminata	Pharmacien, DRD Dédougou	
Dianda Rasmané	ICP, CSPS Communal de Dédougou	
Zangré Albertine	IDE, CSPS Tchériba	
Coulibaly Sévérin	IDE, CSPS Tchériba	
Kouraogo Sibiri	ICP, CSPS Tchériba	
Ouédraogo Seydou Mohamed	DR, DRS Sud-Ouest	
Poda Sié	CISSE, DRS Sud-Ouest	
Somé Der Francis	MCD, DS Gaoua	
Ouedraogo Awa	Pharmacien régional, DRS Sud-Ouest	
Nikiema K Emmanuel	MCD, DS Batié	
Tao Abdoul karim	PEP, DS Batié	
Sogli Matiedi	CISSE, DS Batié	
Waongo Cyrille	Tech. Labo, CMA Batié	
Kindo Ousmane	Tech. Labo, CMA Gaoua	
Monique Diarra	SFE, CMA Gaoua	
Diéné Sirabouré	ICP, CSPS Bouroum-Bouroum	
Niada Salif	IB, (interim ICP) CSPS Legmoin	

Annex C: Details of Health Services/Facilities Visited and Main Respondents at Peripheral Level

Regions	District	Services/Facilities	Principal Respondents
SAHEL		• DRS	• Dr. Gnanou Seydou (MCD), Dr. Ouédraogo Théophile (Ph. Rég)
		• District Sanitaire Dori (+DRD)	• Mr. Bazié Bayon (gérant dépôt), Diallo Mahamoudou (PEP)
		• District Sanitaire Gorom - Gorom (+DRD +Labo)	• Dr. Nagalo Yacouba (MCD)
	Dori	• CHR (+Labo)	• Mr. Kalmogo Richard (Directeur CHR), Zombo Soumaila (TL, CHR)
		• CSPS Gangaol	• Héma Mamadou (ICP), Ouédraogo Céline (IDE), Coulibaly Eva (SFE)
	Gorom - Gorom	• CMA	• Dr. Yaméogo W. Claire (Ph. Rég), Yougbaré Daouba (PEP)
		• CSPS urbain	• Mr. Nikiema Alassane (ICP), Mme Ilboudo Awa (IB), Mainassara Abdoulaye (AIS),
		• Autres CSPS du DS Gorom	• Bazié Olivier (Salmossi), Bourgou Constant (Oursi), Ouédraogo Djingri (Tokabangou)
	MOUHOUN		• DRS
• District Sanitaire Dédougou (+DRD)			• Dr. Ganama Seydou (MCD), Dr. Sanou Aminata (Ph. Rég), Dr. Banao Issouf (Ph DS Solenzo)
Dédougou		• CSPS Communal de Dédougou	• Dianda Rasmané (ICP)
		• CSPS Tchériba	• Mr. Kouraogo Sibiri (ICP), Coulibaly Séverin (IDE), Zangré Albertine (IDE), Kargougou Awa (AIS)
SUD-OUEST		• DRS	• Dr. Ouédraogo Seydou Mohamed (MCD), Mr. Poda Sié (CISSE), Dr. Belem Hamadé (Ph. Rég)
		• District Sanitaire Gaoua (+DRD +Labo)	• Dr. Somé Der Francis (MCD), Dr. Ouedraogo Awa (Ph. Rég)
		• District Sanitaire Batié (+DRD +Labo)	• Dr. Nikiema K Emmanuel (MCD), Mr. Tao Abdoul karim (PEP), Mr. Sogli Matiedi (CISSE)
	Gaoua	• CMA	• Dr. Doro (Médecin), Kindo Ousmane (TL), Monique Diarra (SFE)
		• CSPS de Bouroum - Bouroum	• Diéné Sirabouré, ICP
	Batié	• CMA	• Waongo Cyrille (TL), Compaoré Rasmata (TL), Doamba Solange (SFE), infirmiers de médecine générale.
		• CSPS de Legmoin	• Niada Salif, IB (interim)

Annex D: Data Collection Guides

Part A: Clinic-Based Assessment

Part B: District Team Interviews

Part C: Regional Team Interviews

Part D: District/Regional Hospital Interviews

Part E: Interviews with Other Key Stakeholders

Part A: Clinic-Based Assessment

I. Clinic Information

1. Name of Facility: _____ 2. Date: _____

3. Name of District: _____ 4. Name of Regional Direction: _____

5. Position of Respondent(s): _____

6. Staffing Inventory:

	Position	Qualification, (Training Background)	Case Management Responsibilities	Date Case Management Training	Date RDT Training
1					
2					
3					
4					
5					
6					

7. RDT Inventory:

Type/Brand of RDT in Stock	
Range of recommended storage temperature	
Number of RDTs in Stock Today (specify per type/brand, if more than one brand exist)	
Weeks with Stock-outs over past 6 months	
Location of RDT Storage (e.g., desk drawer, cabinet, closet, on desk ...)	
Relative Temperature (displayed T°)	
Whether RDTs are easily accessible for current use by providers—where placed?	
RDT Stock Records Type/Available	
Date stocks last received	
RDT Use Register Type/Available	
RDT Records in Treatment Card Type/Available	
Other RDT Records	

8. RDT Use Records

RDT Use Records	J	F	M	A	M	J	Total
a. Number of Recorded RDT							
b. Number RDTs+							
c. Number RDT+ given ACTs							
d. Number RDT- given ACTs							
e. Number ACT given without RDT test							
f. Describe if and how clinic records link RDT results with actual treatment							
g. Describe evidence of differential diagnosis to treat other fevers when RDT is negative							

9. How does this health facility get its RDT stocks?

II. Staff Interviews

1. Discussion with staff member who has had RDT training:

1.1 Please describe the nature of the training you received for RDT use. Address issues such as:

- Venue:
- Duration:
- Opportunities for practice:
- Provision of handouts/job aids:
- What you liked best about the training?
- What gaps or issues were not covered well?
- How you share the training modules/contents with the Health Facility other members?
- How different is your practice from what you learned?

1.2 Please tell us how you applied what you learned when you returned to work? Address issues such as:

- Ease or difficulty in applying what learned (need of job aids, equipment, reagents, skills strengthening...):
- Efforts to share what you learned with other staff (and their responses):
- Adequacy of resources and support to apply what learned:
- Response/acceptance of patients to RDT use and application of results:

1.3 Please tell us why you are using RDTs in this clinic:

1.4 Supervision:

- a. Who supervises your use of RDTs in this clinic?
- b. What job aids or performance guidelines are available?
- c. Does anyone from the District Team supervise RDT use (who?)
- d. When did a District Team member last come to supervise your use of RDTs and what did they do?

1.5 Please tell us your opinions about the value of RDTs in this clinic and community:

1.6 When RDT results are negative and the patient has fever, what do you do?

1.7 Are there situations in which ACT are given to patients when RDT results are negative?

List these situations.

1.8 Please share any other comments or questions you have about RDTs.

2. Discussion with a staff member who did not receive RDT training but still uses RDTs:

2.1 Please tell us how you learned about using RDTs:

2.2 Please tell us why you are using RDTs in this clinic:

2.3 Adequacy of resources and support to use RDTs:

2.4 Ease or difficulty in using RDTs:

2.5 Supervision

a. Who supervises your use of RDTs in this clinic?

b. What job aids or performance guidelines are available?

c. Does anyone from the District Team supervise RDT use (who)?

d. When did a District Team member last come to supervise your use of RDTs and what did they do?

2.6 Response/acceptance of patients to RDT use and application of results

2.7 Please tell us your opinions about the value of RDTs in this clinic and community

2.8 When RDT results are negative and the patient has fever, what do you do?

2.9 Please share any other comments or questions you have about RDTs

III. (IMAD) RDT Performance Checklist

(*Use this checklist twice: once for trained person, once for untrained person who uses RDTs)

Position of Person: _____ Trained for RDTs: Yes/No

Procedure	Task	Completed
1. RDT preparation • 3 tasks	• Reads expiration date	1
	• Uses test kit with earliest expiration date	1
	• Allows RDT to warm to room temperature if kept in cool storage	1
2. Patient preparation • 5 tasks	• Washes hands	1
	• Verifies request form (by consulting with clinician, if required); records date and time request was received	1
	• Identifies patient and records patient's details and laboratory number	1
	• Explains procedure to patient, reassures patient as needed	1
	• Wears gloves	1
3. Blood collection + dispensing • 5 tasks	• Cleans site with alcohol swab, and allows to dry	1
	• Firmly pricks site with sterile lancet	1
	• Does not excessively squeeze finger	1
	• Collects adequate volume of blood	1
	• Dispenses blood in correct well	1
4. RDT procedure + reading results • 5 tasks	• Dispenses correct volume of fluid	1
	• Dispenses fluid in correct well	1
	• Waits for correct time (according to manufacturer's instruction)	1
	• Verifies internal test control	1
	• Reads results correctly	1
5. Recording results • 2 tasks	• Records results correctly (including mixed infections if a combo test is used)	1
	• Records date and time of reporting results	1
6. Disposal of infectious material • 2 tasks	• Disposes of used tests, transfer devices, and other contaminated material into plastic-lined bin	1
	• Disposes of used lancet into a sharps container	1
7. Result delivery • 2 tasks	• Delivers results back to patient or clinician	1
	• Notes time taken from receiving request to results delivery	1
Total Tasks Performed		24

IV. (IMAD) Malaria/Fever Consultation Checklist

Procedure	Task	Completed
1. Consultation • 4 tasks	• Makes the patient comfortable	1
	• Asks relevant questions	1
	• Carries out physical examination	1
	• Uses appropriate diagnostic equipment correctly	1
2. Recording information, requesting tests • 5 tasks	• Records relevant information	1
	• Records date and time of filling in the request form	1
	• Makes a diagnostic impression	1
	• Requests relevant laboratory investigations	1
	• Receives results within reasonable time frame (ask the clinician the time from malaria test request to result reporting)	1
3. Interpretation lab tests, prescription • 4 tasks	• Interprets laboratory investigations correctly	1
	• Makes a correct diagnosis	1
	• Prescribes appropriate treatment	1
	• Prescribes drugs in appropriate doses and duration (according to national standard treatment guidelines)	1
4. Information to patient • 4 tasks	• Explains findings and treatment plan to the patient	1
	• Gives clear instructions	1
	• Gives appropriate health education	1
	• Arranges for follow-up	1
Total Tasks Performed		17

Part B: District Team Interviews

I. District Information

1. Name of District: _____ Date: _____

2. Personnel

2.1 Name/Position of person(s) in charge of maintaining RDT Stocks

2.2 Name/Position of person(s) in charge of RDT supervision in clinics

2.3 Name/Position of person(s) responsible for keeping M&E data on RDT use in District

3. Health Facility Inventory

	Name/Location	Number of Staff	# Staff Trained to Use RDTs
1			
2			
3			
4			
5			
6			

II. District Staff Interviews and Data on RDTs

4. RDT Inventory/Stock Records

4.1 Nature, type and condition of records

4.2 Type of stock system

- a. Describe: stocks sent without request/push method; orders placed/pull
- b. Challenges with current system

4.3 Receipt of stocks past 6 months (also check in the record registers)

Date Stock Received	Number Received

4.4 Distribution system—

- a. Push/Pull
- b. Clinics Collect/District Delivers
- c. Challenges with current system

Date Stock Distributed	Clinic	Number

Mean received/distributed stock/month or trimester (district level):

Mean received/used stock/month or trimester (for each health facility):

4.5 Conditions under which RDT stocks are kept

- a. Location:
- b. Temperature:
- c. Condition of Stock:

5. RDT Monitoring and Supervision

5.1 Describe the system for monitoring RDT use at Clinic Level—activities, schedule, person(s) responsible, etc. (look for tables, charts posted on the walls, in registers).

5.2 Generally, how do you know if staff is using RDTs correctly?

5.3 Please show us any guidelines or performance checklists for use during clinic supervision.

5.4 Please show us any supervisory reports or records.

5.5 What are the common findings and challenges seen during RDT use supervision?

5.6 What are the challenges in conducting clinic supervision for RDTs?

6. RDT Records

- 6.1 Describe the system for collecting records on RDT use from the clinics.
- 6.2 Please show us summary/reporting sheets/forms from clinics in the past 6 months.
- 6.3 Please show us District Summary reports for RDT use in the past 6 months.
- 6.4 Do records to link RDT results and clinical response/treatment provided?
- 6.5 District RDT Use Records:

District RDT Use Records	J	F	M	A	M	J	Tot
a. Number of Recorded RDT							
b. Number RDTs+							
c. Number RDT+ given ACTs							
d. Number RDT- given ACTs							

7. Training Staff in the District

- Number:
- Qualification:
- Responsibilities:

8. Monitoring, Supervision and Quality Assurance

Periodicity, organization, responsible

Part C: Regional Team Interviews

I. Region Information

1. Name of Region: _____ Date: _____

2. Personnel

- 2.1 Name/Position of person(s) in charge of maintaining RDT Stocks
- 2.2. Name/Position of person(s) in charge of RDT supervision in clinics/districts
- 2.3 Name/Position of person(s) responsible for keeping M&E data on RDT use in the Region

3. Districts Inventory

	Name/Location	Number of Staff	# Staff Trained to Use RDTs
1			
2			
3			
4			
5			
6			

II. Region Staff Interviews and Data on RDTs

4. RDT Inventory/Stock Records

4.1 Nature, type and condition of records

4.2 Type of stock system

- a. Describe: stocks sent without request/push method; orders placed/pull
- b. Challenges with current system

4.3 Receipt of Stocks Past 6 Months (also check in the record registers)

Date Stock Received	Number Received

4.4 Distribution system—

- a. Push/Pull
- b. Clinics Collect/District Delivers
- c. Challenges with current system

Date Stock Distributed	Clinic	Number

Mean received/ distributed stock/month or trimester (region level):

Mean received /used stock /month or trimester (for each district):

4.5 Conditions under which RDT stocks are kept

- a. Location:
- b. Temperature:
- c. Condition of Stock:

5. RDT Monitoring and Supervision

5.1 Describe the system for monitoring RDT use at District Level—activities, schedule, person(s) responsible, etc. (look for tables, charts posted on the walls, in registers).

5.2 Generally, how do you know if staff is using RDTs correctly?

5.3 Please show us any guidelines or performance checklists for use during district supervision.

5.4 Please show us any supervisory reports or records.

5.5 What are the common findings and challenges seen during RDT use supervision?

5.6 What are the challenges in conducting district supervision for RDTs?

6. RDT Records

- 6.1 Describe the system for collecting records on RDT use from the districts
- 6.2 Please show us summary/reporting sheets/forms from districts in the past 6 months
- 6.3 Please show us Region Summary reports for RDT use in the past 6 months
- 6.4 Do records to link RDT results and clinical response/treatment provided?
- 6.5 Region RDT use records:

Region RDT Use Records	J	F	M	A	M	J	Total
a. Number of Recorded RDT							
b. Number RDTs+							
c. Number RDT+ given ACTs							
d. Number RDT- given ACTs							

7. Training staff in the Region

- Number:
- Qualification:
- Responsibilities:

8. Monitoring, Supervision and Quality Assurance

Periodicity, organization, responsible

Part D: District/Regional Hospital Interviews

I. Hospital Information

1. Name of District/Region and Hospital: _____ Date: _____

2. Personnel

Section	Qualification/ Profile (Ex. MD, nurse, midwife)	Title/Position	Malaria Case Management Responsibilities	Training in Microscopy	Training in RDT Use	Comment
Laboratory						
Pharmacy, Stores						

7. Tell us about acceptance of RDTs by community members?
8. What is the current and planned situation about RDT use in the private sector?
9. What systems are in place to supervise and perform quality monitoring of RDT use at different levels of the health system?
10. Please share any other comments and thought about RDT use in the country.

THANK YOU

Annex E: Sample Regional RDT Training Schedule

Atelier de Formation des Formateurs à L'utilisation des Tests de Diagnostic Rapide du Paludisme

Ziniaré, 12 au 14 août 2008 — Programme Provisoire

Objectif général : Former les formateurs nationaux à l'utilisation des Tests de Diagnostic Rapide (TDR) du paludisme

Objectifs spécifiques :

- Faire un rappel de l'épidémiologie du paludisme au Burkina
- Présenter les nouvelles stratégies de lutte antipaludique et de prise en charge du paludisme au Burkina
- Introduire les TDR et leur place dans la prise en charge (PEC) du paludisme
- Présenter le principe des TDR, les différents types de TDRs
- Présenter les avantages et les inconvénients des TDRs
- Former à l'utilisation pratique des TDRs
- Former au stockage et transport des TDRs
- Former au contrôle de qualité des TDRs

Jour 1: 12 août 2008

Objectifs:

- Faire un rappel de l'épidémiologie du paludisme au Burkina
- Présenter les nouvelles stratégies de lutte antipaludique et de prise en charge du paludisme au Burkina
- Introduire les TDRs et leur place dans la PEC du paludisme

Heures	Activités / Présentations	Responsables
9h-9h15	Ouverture Présentation des participants et formateurs	Coordonnateur, Programme National de Lutte contre le Paludisme
9h15-9h30	Informations administratives	Administrateur
9h30-9h45	Présentations des objectifs / programme de l'atelier	Coordonnateur
9h45-10h15	Rappel de l'épidémiologie du paludisme au Burkina	Dr NANA
10h15-10h45	Pause-café	Administrateur
10h45-11h00	Nouvelles stratégies de lutte antipaludique et de prise en charge du paludisme au Burkina	Coordonnateur
11h00-12h00	Les différentes méthodes de diagnostic du paludisme	SOC
12h00-13h00	Les TDRs et leur place dans le diagnostic et la PEC du paludisme au Burkina Faso	Dr NANA
13h00-13h30	Expérience des TDRs en Afrique et dans le monde	SOC
13h30	Pause-déjeuner / fin de la journée	Administrateur

Jour 2: 13 août 2008

Objectifs:

- Présenter le principe des TDR, et les différents types
- Présenter les avantages et les inconvénients des TDR

Heures	Activités / Présentations	Responsables
9h-9h30	Le principe des TDR, les différents types	Dr SOULAMA / DIARRA
9h30-10h00	Avantages et inconvénients des TDRs	Dr SOULAMA / DIARRA
10h00-10h30	Critères de choix des TDRs	Dr SOULAMA / DIARRA
10h30-11h00	Pause-café	Administrateur
11h00-11h30	Conditions de transport et de conservation des TDRs	Dr SOULAMA / DIARRA
11h30-12h00	Principales étapes de l'utilisation des TDRs	SOC
12h00-14h00	Manipulation pratique des TDRs / fin de la journée	Dr SOULAMA / DIARRA
14h00	Pause-déjeuner	Administrateur

Jour 3: 14 août 2008

Objectifs: Organiser le contrôle de qualité des TDRs

Heures	Activités / Présentations	Responsables
9h-9h30	TDRs et contrôle de qualité, situation générale	SOC
9h30-10h00	Organisation pratique du contrôle de qualité des TDRs	SOC
10h00-10h30	Manipulation pratique des TDRs	Dr SOULAMA / DIARRA
10h30-11h00	Interprétation du test	Dr SOULAMA / DIARRA
11h00-11h30	Pause-café	Administrateur
11h30-12h30	Conduite à tenir face aux différents types de résultats	SOC
12h30-13h30	Discussion	Tous
13h30-14h00	Prochaines étapes de formation	Coordonnateur
14h00	Clôture / Déjeuner	Administrateur

Besoins en Matériels et Consommables	
1. Paquets de TDRs	7. Poubelle de laboratoire
2. Gants	8. Stylos et marqueurs
3. Alcool	9. Labo de TP spacieux avec pailasse, chaises, board
4. Lancets stériles	10. Planche d'interprétation
5. Coton	11. Chaîne de froid (glacière, ice-box)
6. Container pour objets tranchants et piquants	12. Blouses

Note: an extra half-day was added to the next round of training for additional practice.

Liste des formateurs de l'équipe nationale de formateurs à l'utilisation des tests de diagnostic rapide de paludisme. Ziniare Août 2008.

Nom et Prenoms	Structure
Dr. Nana Victor	Programme National de Lutte contre le Paludisme
Dr. Bougouma Clarisse	Programme National de Lutte contre le Paludisme
Pr. Kam Ludovic	CHU-YO / Université de Ouagadougou
Dr. Dao Fousséini	CHU-CDG / Université de Ouagadougou
Dr. Coulibaly Sheick Oumar	Laboratoire National de Santé Publique / Université de Ouagadougou
Dr. Soulama Issiaka	CNRFP
Mr. Diarra Amidou	CNRFP

