

ACT Consortium Afghanistan Entry & Exit Interview Study

Summary results from qualitative analysis

January 2011

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1 Background

Providing universal access to accurate diagnosis and treatment of malaria is recognised as a major challenge in malaria control in resource poor settings. Universal use of parasite based diagnostic tests (either conventional light microscopy or malaria rapid diagnostic tests, mRDTs) for all suspected malaria cases in endemic areas is a component of current global malaria control strategy (WHO, 2011). If diagnostic testing is not available, clinicians are unable to distinguish between uncomplicated malaria and other causes of non-severe febrile illness leading to misdiagnosis and mistreatment (Chandramohan et al., 2002; Mwangi et al., 2005). However, the availability of diagnostic testing at primary care level does not necessarily remedy the problem of mistreatment which is often still common (Whitty et al., 2008). Either patients with malaria are not appropriately treated or patients with a negative test result are given malaria drugs (Ansah et al., 2010; Reyburn et al., 2007; Reyburn et al., 2004). The problem of poor targeting results in mistreatment of patients, wastes drugs and undermines the cost-effectiveness (Lubell et al., 2008) of the diagnostic tests and drugs.

The accuracy of the test itself and the clinicians' response to the test result in prescribing treatment are both important parameters in improving targeting. Adapting clinician's behaviour is an important challenge in improving patient care. For decades clinicians and patients alike have considered all fevers to be caused by malaria. This is an erroneous assumption now that investment in malaria control is providing dividends in reduced transmission. Understanding health worker and patient behaviour is therefore a key component of improving practice (Chandler et al., 2010). We previously examined the perceptions of malaria and malaria diagnosis amongst clinicians in Afghanistan as part of ongoing field trials of mRDTs (Reynolds et al., 2012). The findings mirrored those of other studies (Chandler et al., 2008) in that clinicians considered the diagnostic result to be confirmative if the test was positive but often that the negative test result was seen as no diagnosis, and therefore clinical judgement superseded the test result in defining disease and providing treatment. The study also showed some evidence that patient expectation may play a role in defining diagnostic use and treatment decisions. As part of our assessment we undertook a study to understand patient expectations for malaria diagnoses and treatment, and the relationship between these expectations and clinical practice in 2 areas of Afghanistan.

In Afghanistan, as in much of Asia and South America, two species of malaria coexist; *Plasmodium falciparum* and *P.vivax*. Vivax malaria is predominant and causes around 85% of cases. Health centres are part of a national health structure (the Basic Package of Health Services) and consist of village level health posts, local-level out-patient clinics (Basic Health Centres and Comprehensive Health Centres) as well as district hospitals. Most of the non-severe fever cases that present at primary level do not have malaria: slide positivity rate varies widely but rarely exceeds 30% while some areas have very low transmission with slide positivity rate of 0.1-1.0% (including one of our study provinces). Some areas were previously endemic but are no longer reporting cases. Previous studies have shown that over diagnosis is frequent with approximately 30% of patients with a negative blood slide being treated. Amongst those diagnosed by symptoms alone almost 100% of patients were negative but received malarial treatment (Leslie et al., 2012).

The study aimed to examine patients' expectations and satisfaction with consultations as well as their perceptions related to fever, malaria diagnosis and treatment of the disease.

2 Aims and Objectives

The project aimed to assess the health effects of the diagnostic methods (and the treatment that is applied) on a sample of patients in Kunduz and Jalalabad projects who were enrolled in the randomised trial in 22 clinics.

2.1 Primary objectives

- To assess any effect of patient expectations for malarial diagnosis on clinician prescribing
- To identify social and logistical factors that influence clinicians in the over-diagnosis of malaria

2.2 Secondary objectives

- To measure patient expectations for malarial diagnosis or treatment
- To assess whether patient satisfaction at exit is associated with their expectations being met
- To assess whether diagnostic method (RDT, microscopy, clinical judgement) affects patient satisfaction
- To assess whether patient satisfaction relates to the result of the diagnostic test and/or treatment prescribed
- To gain insight into patient experiences of diagnostic and treatment processes
- To find out what diagnostic and treatment information is given to patients by prescribers in these settings and how this varies by patient type (gender, age)
- To evaluate the introduction of RDTs to clinical practice in the absence of a supporting intervention
- To evaluate the introduction of microscopy to clinical practice by WHO in contrast to the use of RDTs introduced by HPRO
- To gain an insight into how clinicians verbalise guidelines

3 Methods

We conducted entry and exit interviews with patients before and after consultations with clinicians to identify their expectations and satisfaction. The study was undertaken in East and North Afghanistan within the context of a randomised trial in 22 primary care level clinics. The trial randomised patients to be diagnosed using either malaria rapid diagnostic tests and compared them to the existing diagnostic method. In some clinics this was light microscopy (12 in the East Region and 5 in the North Region) and in some clinics doctors relied on only clinical signs and symptoms to diagnose malaria (5 in the North Region). In the North Region of Afghanistan, where malaria transmission is low, patients from 6/10 of the study clinics were included. In the East region, interviews were conducted at 10/12 clinics.

All clinics were primary level clinics, Basic Health Centres and Comprehensive Health Centres, which serve a local population with basic outpatient care. These are the first contact point for many patients in the public health service. The clinics provide preventative services (e.g, routine immunization, antenatal care and family planning services).

All patients (or caregivers of patients) who attended the clinic on the days designated for the interviews with symptoms of suspected malaria were eligible for entry interviews. These were conducted prior to their consultation with any clinical staff. Only patients with actual suspected malaria (either prescribed malarial drugs or having a test requested by the clinicians) were eligible for exit interviews. Patients (or caregivers) were excluded if they did not consent, were attending with no illness (i.e. for antenatal care); or were follow-up patients (i.e. those attending a consultation for a prior illness); or were attending for treatment or consultation on non-communicable diseases (i.e. diabetes, hypertension) or injuries (i.e. burns or breaks). Participation in this study did not depend on enrolment into the trial, or vice versa. If the patient was enrolled in the trial, this was noted on the form for later analysis.

Data was collected using pre-set topic guides which were translated into local languages of Pashto and Farsi and back-translated to ensure accuracy. The entry questionnaire consisted of 6 non-leading questions designed to elicit: Needs (i.e. what the current visit is for); expectations for diagnosis and treatment of their illness; and their understanding of malaria and the diagnostic process. The exit questionnaire was designed to elicit: What illness was diagnosed and what prescription was given from the doctor; whether and what explanations were given by the doctor for the condition and treatment; the level of satisfaction with the encounter in terms of their expectations; and their perception of malaria risk in the local area. The questionnaires are available from the authors. Trained social science officers assisted in developing the protocol and questionnaire and conducted the interviews after extensive training and prior experience in social science methods. The interviews were conducted in a private space, out of earshot of others, either in or in the immediate vicinity of the clinic.

Interviews were recorded using a digital recording device or, where this was not possible, notes were made by the interviewer and expanded immediately after the interview to as close to verbatim as possible. Answers and notes were then transcribed into computer format (MS Word) before being translated to English and cross-checked for translation.

The whole transcript was reviewed for each interview and patients who attended both entry and exit interviews and those who were enrolled in the trial were linked in the database. Transcripts were coded and analysed quantitatively and qualitatively, using NVivo 8 (www.qsrinternational.com) and STATA 12 (Statacorp, Texas). For the quantitative coding, a template was developed in advance in NVivo to categorise retrospectively the responses to the entry and exit interview questions. Typically, responses were coded as Yes/No/unclear or satisfied/dissatisfied according to the coder's interpretation of the response, which followed an agreed set of definitions. For example, if the patient or guardian mentioned an expectation for a malaria test, this was coded as 'yes' under the 'Patient expects malaria test' node. If a patient said they were happy with the drugs provided, this was coded as 'satisfied' under a 'satisfaction with treatment' node. The same patient or guardian could also have responses coded as 'dissatisfied' under the same node, for example if they were unhappy with another element of treatment, such as the drugs not being available. Ambiguous responses were discussed extensively between the interviewers, researchers and coders to reach agreement on how to code. We validated the coding of each transcript into the relevant categories under each heading by ensuring that no transcript was coded under two exclusive categories, that

the total for each heading equalled the total number of transcripts coded, and by rechecking a sample of transcripts to ensure responses were coded appropriately. The quantified codes were exported into STATA for analysis, to compare with clinical records.

Thematic coding was also undertaken. Here, an interpretative approach was taken, whereby ideas emerging in interview transcripts were labelled and developed into themes. Unlike the pre-defined coding, the nodes were developed as the coding progressed. For example, where a participant mentioned: 'health worker should tell us about the illness' this sub-theme was grouped under the idea based code for 'perceptions of good quality care'. Additional concordant answers in other transcripts were grouped under the same code. This was repeated until all transcripts were coded and no new themes emerged.

We also examined clinical data from some patients who were enrolled in the trial and included in entry and/or exit interviews. This data was collected as part of the clinical trial and will be described in detail in a forthcoming publication (Leslie et al, forthcoming). The primary outcome in the trial was: The proportion of patients who had been accurately treated for malaria. Accurate treatment was defined as patients with a reference diagnosis positive for malaria receiving the appropriate antimalarial therapy; and those with a reference diagnosis negative for malaria being given no antimalarial drugs. Reference diagnosis was given by a combination of double slide-reading by expert microscopists and PCR confirmation. We also assessed whether patients were given antibiotics or other treatments. We examined any trends in expectation and/or satisfaction from the entry and exit interviews against the outcome of interest from the trial data and based on the method of diagnosis at the consultation (RDT or other).

Ethical approval for this study was given by the Institutional Review Board of Ministry of Public Health, Kabul, Afghanistan and Ethics Review Board of the London School of Hygiene and Tropical Medicine. The randomised trial that was the setting for this study was registered at clinicaltrials.gov under reference number: NCT00935688. A total of 126 Entry interviews and 59 Exit interviews were held.

4 Findings

4.1 Perception of how common malaria is

In response to the question 'how common is malaria here?' a majority responded that malaria is very common (40/59, 67.8%) although 23.7% said malaria is not so common (14/59). In response to the question 'what do you think is the best way to know if you have malaria', 37 (62.7%) mentioned having a test, 28 (47.5%) mentioned knowing malaria from symptoms and 14 (23.7%) mentioned consulting a doctor.

Respondents cited causes of malaria being so common which included presence of many mosquitoes, the environment characterised by stagnant water in ditches, fields and presence aquatic areas. It was also mentioned that malaria is caused by the sun when work or walk under it.

Many people have malaria

Malaria is very common in our village; every one who tests his blood has malaria. (E_iNBT_024, Father 30yrs, of male child patient 7yrs)

90% people suffer from malaria here, now it is very much.(E_iNBE_010, Male patient 22yrs)

Malaria is caused by the sun

I know that malaria is rising from warmness. If you walked under warm weather and sun strike you, you get malaria. (E_iKAR_002, male patient 25yrs)

Malaria is high because of the environment

Malaria is very much here sir! There is a lot of water and mosquitoes and that's why malaria is much here. (E_iNBE_011, male patient 20yrs)

Malaria is very common in our village; every one who tests his blood has malaria.....Because of large number of mosquitoes and trees and fields. (E_iNBT_024, Father 30yrs, of male child patient 7yrs)

4.2 The best way to know you have malaria

Many respondents mentioned that the best way to know if one has malaria is by doing a blood test (37 out of 59 sources). A significant number also mentioned that the best way to know one has malaria is through the symptoms (28 out of 59 sources) including fever/hot body and shivering (see Table 1). Some also mentioned in 14 out of 59 sources that it was best to consult a doctor which also involves the doctor asking question.

Know you have malaria by testing

When we go to doctor he tests my hand's blood and says that i have malaria. (E_iKNB_004, female patient 20yrs)

When people come to clinic, we ask the doctor to test our blood, maybe we have malaria. (E_iKNB_003, male patient 21yrs)

Know you have malaria by symptoms

We have fever and shiver so we know that we have malaria. (E_iKAR_001, male patient 18yrs)

The best way that I know I have malaria is: In malaria there are chills, patient cover his body with three to four blankets, has shakes, becomes hot, sweating, breathlessness, and has sore throat with bad taste and lose of appetite. In our surrounding all kids and adults have the same disease with back pain and legs pain. (E_iKBQ_004, female patient 48yrs)

Consult the doctor to know if you have malaria

We go to doctor and he (doctor) knows about malaria. (E_iKAR_001, male patient 18yrs)

When my grandsons and my son’s wife got malaria their mouth became bitter, body has ache and becomes cool, then we take them to the doctor, the doctor says that they have malaria (E_iKNB_009, female patient 50yrs)

Table 1. Most commonly mentioned symptoms of malaria: patients’ perspective

Code	Number of exit interviews discussing item	Number of references across all exit interviews
Fever, hot body	21	21
Shivering	12	12
Body pain	10	10
Bitter taste in mouth	2	2
Feeling sleepy	2	2
Headache	2	2
Vomiting	2	2
Loss of appetite	2	2
Changes in urine colour	2	2
Feeling sleepy	2	2

4.3 Perception of malaria and quality of care

The patients interviewed had various perceptions of good quality care which included making a good diagnosis and that tests are important in the process of care, prescribing the right medicine, getting fine after visiting the health centre, the health worker telling the patients about their illnesses, among others. Others mentioned that health services should be for everyone, the health workers should show a good attitude and that drugs should be available. See Table 2.

HW will make a good diagnosis

I think he will make good diagnoses through blood test in laboratory. (E_iNSH_001, male guardian of female patient child)

HW should prescribe the right medicine

I go to doctor for my sickness. He should examine me and write a good medicine for me to become healthy. (E_iKAR_003, female patient 30yrs)

It is for two months that I am sick, I hadn’t money to go the doctor in kunduz (centre of kunduz). People said there are medicine and drips in this clinic, so I come here. I said (expect) that he will give good medicine. I came here before and they gave me one or two medicines, these medicines made me stomach ache, so now I cannot eat rice. This time that I come I want to them to give me a drip for my weakness, give me an injection and good (effective) medicine. (E_iKSS_003, male patient 20yrs)

HC visit should make me fine

When I feel fever and have body ache I came to this clinic to test me for malaria and typhoid fever and give me good medicine that make healthy. (E_iKSB_010, mother 25yrs of female child patient 01yr)

HC services should be for everyone

He should give medicine which make us healthy, we are poor people and haven't more money. (E_iKSB_010, mother 30yrs of female child patient, 06yrs)

I have head ache, palpitation and typhoid fever. Before I took medicine but I'm poor, this year I took only one prescription from the private clinic. I have come to this clinic many times but they didn't let me to see the doctor (didn't give turn to see the doctor). God bless them today they let me to see the doctor. (E_iKNB_010, Female patient 35 yrs)

Drugs should be available

Every time I came here they don't give medicine for me. Today I am fortunate because you are here. (E_iKNB_007, female patient, 30yrs)

Interviewer: What would you like him or her to give to your daughter when you leave?

Respondent: They provide the necessary medicine, and if they do not have, then what will they give? (E_iNMD_002, female patient 08yrs)

HW should tell us about the illness

Doctor will say nothing. Doctors just give us medicines and do not tell us that 'what are these for'. (E_iNKH_002, female patient 35yrs)

Table 2. Patients perceptions of good quality care

Code	Number of interviews discussing item	Number of references across all interviews
HW should make a good diagnosis	39	48
HW should prescribe the right medicine	35	45
HC visit should make me fine	26	39
HC services should be for everyone	12	18
HW should tell us about the illness	12	14
HW should examine	11	12
HW should show a good attitude	8	11
Drugs should be available	8	9
HW should tell us about the drugs	6	7
HW should ask questions	5	5
HC services should be fast	2	2
HC should have qualified staff	2	2

4.4 To measure patient expectations for malarial diagnosis or treatment

More than half of the respondents for the entry interviews mentioned that they expected a malaria diagnosis from the health worker (66 out of 126 respondents). However, other patients expected other diagnoses like fever, sunstroke, flu among others.

Patient expects malaria diagnosis

I think she has malaria, doctor will examine this child. If there is suspicion of malaria he (doctor) will introduce us to the malaria section. He (S.R) takes her blood and gives it to laboratory, if it is malaria he will say she has malaria and if she has fever he (doctor) will give medicine and I will go (E_iKNB_002, father 60yrs of female child patient 4yrs)

I expect from doctor to say he has malaria, or another illness. If he has medicine he would give me if he hasn't (medicine) he will write a prescription for me to get it from drug store. (E_iKNB_001, father 40yrs of male child patient 5yrs)

The patients identified various reasons as to why they expected a malaria diagnosis and these included having symptoms they identified with malaria, presence of many mosquitoes around, hot weather conditions and the fact that malaria is very common around.

I say it is because of these symptoms, like he has shivering, has pain in his feet, and he has a lot of headache, and..... he is having dizziness. He says (their son) I have dizziness and these are the symptoms of malaria.(E_iNBE_004, Guardian of male patient 12 yrs)

Sir, when there is headache, and shivering, temperature and ----- sweating and the pain in body and feet, then it is malaria. (E_iNBT_023, male patient, 30 yrs)

I say that it will be malaria, because she has a frequently hot fever and there are also a lot of mosquitoes in this area, and we do not have the bed nets to use, and maybe the doctor will test her blood. (E_iNLB_004, Aunt 53 of female child patient 07 yrs)

I suspect she has malaria, because in this area there is too much malaria and in my family each child when they finish their medicine, after two, three or even four days they again have malaria. This is the second prescription for this child. The previous medicine finished and after two days she has malaria again because there are a lot of mosquitoes here and malaria is common. (E_iNMD_002, female child patient 08 yrs)

Important to note from some of the interviewers' perspective, most patients expected that they have malaria but the RDT gave a negative result.

73% of the patients mentioned that they expected medicine or treatment and 44% of the patients expected antimalarials at entry of the health facility.

In my idea, he will give anti malarial tablets. Because before when a child got malaria we took him to the doctor and he gave antimalarials. (E_iKBQ_006, mother 35 yrs of male child patient 01yr)

4.5 Relationship between patient satisfaction at exit and expectations on entry

Most of the patients interviewed at exit (68%) mentioned that their expectations were not different from what happened which involved being examined and given medicine as usual while (29%) said

that their expectations were different from what happened involving not getting the expected medicine, not tested and being diagnosed with other illness other than the expected malaria.

Satisfaction with expectation being met

I: How do you feel with this diagnosis and treatment?

R: I feel very well, and I am satisfied that he (doctor) made a correct diagnosis for me, and this doctor is very good and clever person and also knows a lot. (E_iNBT_015, male patient 18yrs)

Dissatisfied with expectations not being met

- *Expected route of administration (drip)*

What should I say? The doctor gave me these pills. My heart wanted a solution [drip] and an injection. He didn't give me those things. He gave me these pills. What should I say? I can't fight with the doctor. (E_iKAR_002, male patient 25 yrs)

- *Expected test (typhoid)*

I expected the doctor to test my blood for typhoid but doctor did not do that. (E_iNBE_015, female patient 19yrs)

- *Expected diagnosis (malaria)*

Hmmm-----I suspected strongly that I will have malaria, but when I tested my blood, my guess was wrong and it was not malaria, and just this was against my expectation. (E_iNBE_011, male patient 20yrs)

- *Expected time from doctor (to see children too)*

I came here from far away today, and there is 35 Km way to our village, and someone praised me about this clinic, that's why when I came in the morning, I thought that the treatment of my children will also be done along me, but just my treatment has done here and my children still need the treatment. And now I will bring them (children) tomorrow to a private doctor. (E_iNKH_005, male patient 30 yrs)

More specifically, it was identified that out of the 136 respondents, only 50 respondents were involved in both entry and exit interviews. All expected to get medicine, and many also expected a blood test, to be examined and to confirm a certain diagnosis (mostly malaria and fever diagnoses were mentioned). Those who mentioned expecting to be examined mostly mentioned checking their blood pressure, chest and temperature but hardly mentioned whether the expected examination was done during the exit interviews. Table 3 shows a comparison of the viewpoints of those interviewed on exit with their expectations as stated on entry to the consultation.

Table 3. Comparison of views on exit with expectations on entry

Expectation on entry to consultation	Viewpoint on Exit from consultation	
Expected medicine	Got medicine	Comments about satisfaction

<p>All the 50 respondents (100%) who participated in both entry and exit interviews mentioned that they expected to get medicine.</p>	<p>All the 50 respondents (100%) who participated in both entry and exit interviews mentioned that they expected to get medicine and that they got medicine.</p>	<p>(44 out of 50 respondents) 88% mentioned that they were satisfied about getting medicine or treatment but however, the remaining 12% mentioned that they expected drips or injections or serum but didn't get them (were given e.g. tablets) which caused dissatisfaction.</p>
<p>Expected blood test 33 out of 50 respondents mentioned (66%) mentioned that they expected a blood test. The remaining 17 respondents didn't mention about expecting</p>	<p>Got blood test 19 respondents mentioned that they got a blood test although these included 2 respondents who got a blood test although they hadn't mentioned that they expected it. Therefore about 60% of those who expected a blood test got a blood test. Also 2 respondents mentioned that they expected a blood test by they didn't get it. The rest didn't mention anything about getting a blood test.</p>	<p>Comments about satisfaction Almost all who got their blood tested mentioned that they were happy or satisfied about the test. The two respondents who expected a blood test but didn't get one mentioned disappointment with no having the test not being done but were however happy with the treatment/medicine given to them (iKBQ_005, iNBE_015).</p>
<p>Expected examination 30 out of 50 respondents (60%) mentioned that they expected to be examined. The rest didn't mention about it.</p>	<p>Got examination 8 respondents mentioned that they got examined (mostly for blood pressure), while 2 respondents mentioned that they were not examined yet they had expected it.</p>	<p>Comments about satisfaction Of the 8 respondents who got examined, 5 mentioned that they were happy because they were examined while the remaining 3 didn't specify their satisfaction with the examination. The other 22 who expected an examination didn't say whether they received examination but majority of them said that they were happy with the visit.</p>
<p>Diagnosis expected^a (out of the 50 patients who participated in both entry and exit interviews) Malaria – 27 Don't know/Dr. doesn't tell us - 12 Typhoid – 06 Fever – 03 Flu – 01 Spasms – 01 Pneumonia – 01 Cholera – 01 Overweight – 01</p>	<p>Diagnosis reported by patient after consultation. (out of the 50 patients) Don't know/Doctor didn't tell me - 14 Malaria – 08 Fever – 08 Pain in legs - 04 Body weakness – 02 Stomach ache – 02 Body ache – 01 Flu – 01 Head ache – 01 Chest problem – 01</p>	<p>Comments about satisfaction Some respondents were happy that they for example suspected to have malaria and the diagnosis was malaria. Others expected malaria diagnosis but the result was another disease which made some happy and others not. Important to note is that 11 respondents mentioned that the HW didn't tell them the diagnosis and only gave medicine.</p>

	Diarrhoea – 01 Lumbago – 01 Swelling (rheumatism) – 01 Palpitation – 01 Pneumonia – 01 Pain in kidneys – 01	
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^aOnly includes responses to question 4 of the entry interview topic guide ‘what do you think the doctor will say is the problem/your illness?’

4.6 Effect of diagnostic method (RDT, microscopy, clinical judgement) on patient satisfaction

When asked about satisfaction with the test done, a majority of the patients mentioned that they were happy with the test done (82% of those asked about satisfaction with the test mentioned that they were happy with the test). However, patients hardly mentioned about the diagnostic methods used. Two patients mentioned that they had been tested by microscopy and that the test was good. One patient mentioned that the ‘new method’ (RDT) was better than microscopy whereas another said that accuracy of RDTs is dependant on the health worker’s interpretation of results.

Test with microscopy was good

They took my blood on a mirror [slide] and it was good. (E_iNBT_020, female patient 25yrs)

Accuracy of RDTs depends on HW interpretation

Machine is not a problem but human has problem that they do not know malaria. Machine indicates [result] but if human doesn’t know what can the machine do? (E_iKNB_002, father 60yrs of female child patient 4yrs)

Note: this patient had a negative result. For more discussion on the influence of results on perceptions of tests, see section 4.7.

Important to note also is that some people were actually not interested in the diagnostic tests but they actually thought that healing was out of their hands. Some mentioned that they rely on the clinicians and his ways while others rely on Allah. Thus some people where expecting a malaria test or malaria diagnosis but actually they where not disappointed afterwards because the control of the disease is not in their court, they put the control into the hands of a clinician or a God so they don’t feel like they entirely have control over their disease. Those who mentioned that they rely on the clinician and his ways identified that diagnosis is reading and writing on paper while others mentioned that the HW knows about their illnesses and not them. Some said that they simply tell the HW their problems while others admitted to being illiterate and not knowing the medicine that the health workers give them. The power of Allah over healing was identified when a few respondents mentioned that Allah knows better about their disease and will heal them. Others said that they will get better if Allah wishes and that even after getting medication, its still Allah’s blessings that will make them fine.

I: What do you expect the clinician will do when you see her?

R: I expect doctor to write good medicines for her which will make her fine

I: What do you think are the good medicines for her?

R: I do not know you doctors know better (she is pointing to me). (E_iNBE_008, guardian of female child patient 5yrs)

**I: What do you say that that disease will be that she has? What do you suspect her disease to be? -
----- That what will be her illness?**

R: I don't know about her disease, Allah knows better. (E_iNBE_003, guardian of female child patient 3yrs)

I: What will be the effect of these medicines?

R: ALLAH is very kind. He is the only one Who can make us fine. (E_NNQ_015, mother 35yrs of female child patient 1yr)

Diagnosis is reading and writing on paper

I: Ok, what do you expect the doctor to do, when you take your son to him?

R: He will write medicine for him (son) and then we will go.

I: He will not do anything more, any test or check up?

R: No----- he does nothing more, when I tell him about my son's sickness, when we visit him (doctor) last time; he just wrote the medicine and let us go. (E_iNLB_003, female guardian of male child patient 5yrs)

The HW knows not me

I: Which disease do you think she has?

R: I do not know about her disease, the doctor will know.(E_iNMD_002, female patient 08yrs)

4.7 The impact of treatment gained on satisfaction

80% of the patients who participated in the exit interviews mentioned that they were satisfied with the treatment that they got. In addition to that, all who participated in both entry and exit interviews expected medicine and all got medicine. This shows how important getting medicine/treatment is to patients and how much it affects their satisfaction. They few who were disatisfied were not happy with the route of administration e.g. expected a srup or injection but was given tablets. Some respondents mentioned that they believed that the medicine given to them was either not effective or wouldnt relieve their complaints. When asked about satisfaction with diagnosis and treatment, most participants responded to satisfaction with treatment and hardly about satisfaction with diagnosis. They mentioned being happy with the medicine given and hoped to get better after taking it. Other factors mentioned that affect satisfaction were diagnosis and the test done.

Satisfaction with treatment prescribed

I felt good with this, that he (doctor) tested his (son) blood and also gave the medicine, but didn't tell me what this medicine is for. (E_iNLB_001, mother 44 yrs of male child patient 12 yrs)

I am happy. He gave this much (medicine), because I insist a lot to get medicine. (E_iKBQ_005, female patient 15yrs)

Dissatisfaction with treatment given

I feel that these medicine wouldn't relieve my complaints. Only will be useful for my headache. (E_iKBQ_004, female patient 48yrs)

Dissatisfaction with the route of administration.

I: Well, how do you feel with these drugs which doctor gave to you?

R: What should I say? The doctor gave me these pills. My heart wanted a solution [drip] and an injection. He didn't give me those things. He gave me these pills. What should I say? I can't fight with the doctor.

Diagnosis affects satisfaction.

15 out of 59 respondents who participated in the exit interviews mentioned that they had positive results for malaria. About satisfaction with the diagnosis and treatment, 13 out of the 15 respondents (73%) mentioned that they were happy/satisfied with the diagnosis and treatment and gave reasons like "the test removed doubt, the Doctor made a correct diagnosis". 2 respondents were not clear about their satisfaction with the diagnosis and treatment.

17 out of 59 respondents who participated in the exit interviews mentioned that they have negative results for malaria. About satisfaction with the diagnosis and treatment, 12 out of the 17 (70%) respondents mentioned that they were satisfied/happy, 2 respondents weren't satisfied (1 with the route of medication given while the other blamed the Health workers for the negative results and not the machines), 2 respondent wasn't clear about satisfaction while one didn't mention about satisfaction.

About satisfaction with the visit, 6 out of 15 respondents who had positive malaria test results mentioned that they were happy with the visit while 7 out of 15 respondents were not clear about their satisfaction. Two respondents were not satisfied with the visit because treatment wasn't given to the rest of the children they had gone with to the health facility.

About satisfaction with the visit, 5 out of 17 respondents who had negative malaria test results mentioned that they were happy with the visit, 1 wasn't satisfied saying that women don't want to wait for their turn, 9 weren't clear about their satisfaction while 2 wasn't asked the question.

Happy with diagnosis

I feel happy because I got information. My doubt is removed with this test and now I can do other treatment. If he (patient) doesn't become healthy I can get idea from another (doctor). (E_iKNB_001, father 40yrs of male patient child 05yrs)

I feel good about this and this test was good and this doctor is also very good and knows a lot. (E_iNLB_006, male patient 19yrs)

Unhappy with diagnosis and treatment

R: How do you feel about this diagnosis and treatments?

I: I do not feel happy because he is a small child. He can not take these tablets. (E_iNBE_014, mother 25yrs of male child patient 01yr)

4.8 Patient perceptions of the overall visit

Of the patients who participated in the exit interviews, about half of them mentioned that they were satisfied with the health facility visit while others were dissatisfied or not clear about their satisfaction. Those who were satisfied identified that the health workers treated them well and that they got medicine which was often referred to as good medicine. The dissatisfied ones mentioned that diagnosis process was inadequate characterised by health workers not examining them well and not testing their blood. Also mentioned was inadequate medicine, delay in giving treatment and no advice given. Some patients also identified that health workers treated the well characterised by equitable behaviour and good attitude.

Satisfied with treatment

I feel good because they gave us some tablets. (E_iNBE_018, sister 25yrs of male child patient 07yrs)

Now I feel that I will be cured with this and treated well. (E_iNBE_025, male patient 26 yrs)

Health Worker treated me well

They had good behavior with me and give me my turn, now it was better than the past.(E_iKNB_010, female patient 35yrs)

They have good behavior I mean doctor is a good man only the watchman hasn't good behavior. Otherwise in this clinic everything (health services) is for poor people. (E_iKBQ_004, female patient 48yrs)

Dissatisfied with diagnostic and treatment process

He didn't examine me. Other doctors examine patients, check the patients' blood pressure & test their blood. If you go to Basos , there are good doctors. They examine you. (E_iKSB_005, male patient 36 yrs)

Every time we come here and however we are sick he doesn't give us more than two pills. He doesn't give us good medicine. People have too many problems. He does not see (examine) well. Solution [drip] and other things (injections) are available here but the doctor only give these four pills.(E_iKAR_002, male patient 25 yrs)

It is good, but people are waiting for a long time and I think people do not wait for their turn. (E_iKSB_007, male patient 32yrs)

He didn't give information about this illness. I took my child to the doctor to take his blood (test his blood) but he didn't take his blood for malaria or for typhoid fever. I will take this (medicine) but it hasn't benefit (it is not effective) [she is showing her medicine]. (E_iKAR_005, mother 25yrs of male child patient 1yr)

4.9 Diagnostic and treatment information given to patients by prescribers

A majority of the respondents (about a third) mentioned that the doctor did not tell them the diagnosis of their illnesses and that the doctor just examined, wrote and gave them medicine. 32% of the patients at the exit interviews mentioned that the doctor diagnosed the syndrome not the disease. Others mentioned that the doctor said they didn't have certain diseases while 17% mentioned that the health workers told them that they had malaria. Information on treatment was also given in form of the dosage to be administered. There was hardly any data showing how diagnostic and treatment information given to patients by prescribers varies by patient type in the entry and exit interviews.

HW didn't tell me diagnosis

***He did not name my illness. He only examined me and gave this pill. I hoped it would be a solution [drip] or a powerful drug. He only gave these four packs of pills. (E_iKAR_002, male patient 25yrs)
Doctor just asked me that what your problem is and I told doctor that I have fever and I also vomits and then the doctor said nothing. (E_iNKH_006, female patient 11yrs)***

Doctor did not tell me anything he just wrote these medicines. (E_iNLB_008, female patient 18yrs)

HW diagnosis was malaria

The doctor tested my blood and said that, "you have malaria". (E_iKNB_008, male patient 18yrs)

The doctor said that I have malaria, and --- gave me these tablets. (E_iNKH_005, male patient 30 yrs)

Treatment information given to patients

He advised to give one fourth of a tablet {describing dosage of prescription} and half of a tablet for this oneThis is for malaria (points to the anti-malarials). This is for one night. And..... said to give half of it (half a tablet). (E_iNBT_007, male patient 08 yrs)

He gave medicine and said eat this one twice daily and pour this one in the glass of water then drink. (E_iKBQ_005, female patient 15yrs)

He wrote two kind of medicine he said eat this one in the beginning of the night and this one in end of the night and after meal (E_iKNB_006, female patient 35yrs)

4.10 Further analysis

- Relationship between patient expectations and clinician practice
 - how does what patients think they have compare with what the clinician prescribes / what they report to have been diagnosed/prescribed with?
 - How does what patients expect relate to practice within the IRT sub-group: are those who think they have malaria/expect antimalarials getting malaria diagnosis/antimalarials more frequently than those who do not expect this diagnosis/treatment? How do expectations affect use of ABs and referrals?
 - How does this vary by patient/HW/clinic/area/trial characteristics?
 - Patient variables: symptoms reported by patient/IRT clinician, reference slide result

- Clinician age, cadre, where trained (e.g. in Pakistan in Russian period 79-89 may be less didactic taken from American/British style than in Kabul before when Russian influence), years in service,
 - Clinic variables like no consultations per week, from register, number of prescribers in each clinic, clinic type BHC or CHC,
 - Area
 - Trial issues: what diagnostic randomised to (and quality of test - PfPan better than PfPv), what result was,
- Reason for any relationship/ lack of relationship found between expectations and practice
 - How do patients construct their expectations?
 - Experiences
 - Values
 - How important is it for patients that their expectations are met?
 - Are they more/less satisfied if expectations are met/not met?
 - What is important in getting satisfaction out of a visit to the clinician?
 - What is good quality care?
 - What components are associated with higher satisfaction (tests, test results, types of medication)?
 - What are patient perspectives of the different types of test? (how does satisfaction relate to test type in IRT subsample)
 - What is the cultural/economic context for setting expectations and satisfaction with consultations?
 - Are symptoms perceived differently between patients and HWs?
 - Compare entry interview symptoms with IRT symptoms recorded (deemed clinically important)

5 Acknowledgements

The study was funded by the Bill and Melinda Gates Foundation and sponsored by the ACT Consortium at the London School of Hygiene and Tropical Medicine. We are grateful to the health authorities in Afghanistan (Ministry of Public Health, National Malaria and Leishmaniasis Control Programme), the participants of the trial and the implementing organisations (Health Protection and Research Organisation, HealthNet TPO, Merlin)

6 References

- Ansah, E.K., Narh-Bana, S., Epokor, M., Akanpigbiam, S., Quartey, A.A., Gyapong, J., et al. (2010). Rapid testing for malaria in settings where microscopy is available and peripheral clinics where only presumptive treatment is available: a randomised controlled trial in Ghana. *BMJ*, 340, c930.
- Chandler, C.I., Jones, C., Boniface, G., Juma, K., Reyburn, H., & Whitty, C.J. (2008). Guidelines and mindlines: why do clinical staff over-diagnose malaria in Tanzania? A qualitative study. *Malar J*, 7, 53.

- Chandler, C.I., Whitty, C.J., & Ansah, E.K. (2010). How can malaria rapid diagnostic tests achieve their potential? A qualitative study of a trial at health facilities in Ghana. *Malar J*, 9, 95.
- Chandramohan, D., Jaffar, S., & Greenwood, B. (2002). Use of clinical algorithms for diagnosing malaria. *Trop Med Int Health*, 7, 45-52.
- Leslie, T., Mikhail, A., Mayan, I., Anwar, M., Bakhtash, S., Nader, M., et al. (2012). Overdiagnosis and mistreatment of malaria among febrile patients at primary healthcare level in Afghanistan: observational study. *BMJ*, 345, e4389.
- Lubell, Y., Reyburn, H., Mbakilwa, H., Mwangi, R., Chonya, S., Whitty, C.J., et al. (2008). The impact of response to the results of diagnostic tests for malaria: cost-benefit analysis. *BMJ*, 336, 202-205.
- Mwangi, T.W., Mohammed, M., Dayo, H., Snow, R.W., & Marsh, K. (2005). Clinical algorithms for malaria diagnosis lack utility among people of different age groups. *Trop Med Int Health*, 10, 530-536.
- Reyburn, H., Mbakilwa, H., Mwangi, R., Mwerinde, O., Olomi, R., Drakeley, C., et al. (2007). Rapid diagnostic tests compared with malaria microscopy for guiding outpatient treatment of febrile illness in Tanzania: randomised trial. *BMJ*, 334, 403.
- Reyburn, H., Mbatia, R., Drakeley, C., Carneiro, I., Mwakasungula, E., Mwerinde, O., et al. (2004). Overdiagnosis of malaria in patients with severe febrile illness in Tanzania: a prospective study. *BMJ*, 329, 1212.
- Reynolds, J., Wood, M., Mikhail, A., Ahmad, T., Karimullah, K., Motahed, M., et al. (2012). Malaria "Diagnosis" and Diagnostics in Afghanistan. *Qual Health Res*.
- Whitty, C.J., Chandler, C., Ansah, E., Leslie, T., & Staedke, S.G. (2008). Deployment of ACT antimalarials for treatment of malaria: challenges and opportunities. *Malar J*, 7 Suppl 1, S7.
- WHO (2011). Universal access to malaria diagnostic testing: An operational manual.