PRE REFERRAL RECTAL ARTESUNATE (RAS)
Pre testing of Communication Material – Malawi

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Monique Oliff

WellSense

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Executive Summary

WellSense worked with MMV and its Country Partners in Malawi, to pre- test the second set of Pre-referral Rectal Artesunate communication materials. Testing in Malawi captured the views of a sample of Southern African respondents. Malawi is a high malaria burden anglophone country, with over 3 million cases a year. Pre-referral RAS is in the Malawi NSP and in the treatment guidelines and full roll out of RAS is anticipated for the last quarter of 2015 or 2016.

Permission was granted by NMCP to conduct the pre testing exercise in Mchinji District. Sites included Mchinji District Hospital, Kaiwazangwa health centre, Poko and Kafulama villages. There were 9 focus group discussions reaching 44 Health Surveillance Assistants (CHW), 9 clinicians/nurses, 27 mothers and 19 fathers resulting in 99 key informants accessed during 3 days of field work. Another 7 key broader stakeholders were also consulted in Lilongwe – UNICEF, PMI/USAID and Save the Children, along with the Ministry of Health. The pre-testing adopted an Action Research methodology with a qualitative approach. After explanation and consent, the focus group discussions which lasted 60 and 90 minutes were broken into smaller groups of 3 to enable richer data collection. Real time 'analysis' was ongoing.

Key proposed changes to the community sensitization poster included revisiting the lethargy/unconsciousness and convulsion danger signs, along with small changes to the refusal to eat sign. Clarification on whether fever is an accompanying sign and not a stand -alone sign was raised. Reinforcing that only one danger sign is needed for RAS and referral was also highlighted. The plus / + signs were considered unhelpful. It emerged that the HSA appearance was incorrect for Malawi – removal of the head scarf and a change outfit was suggested. Similarly the way in which the mother was seated unsettled some caregivers. A number of hygiene improvements were identified. Modifying the size of the RAS insertion images was pointed out as a way to further enhance community understanding of the intervention. Adapting the referral/transfer images to the Malawi context was considered critical – in particular in relation to the mode of transport and the manner in which the caregiver was travelling and with whom. Bringing the age range to the fore and enhancing this important aspect of access to the intervention was stressed. Revisiting various ways to communicate pointing and the ambiguity o arrows among illiterate respondents was revealing. While incorporating symbols, like an already recognizable green cross to symbolize health services was encouraged. The value of the 'first step' concept was validated whilst the need to communicate around the second step was raised.

Key findings leading to changes to the jobaid and flyer targeting health workers included the need to revisit the memory aid acronym ACT so as to take into account the actual task of administering the RAS. Adjusting the manner in which fever or history of fever is assessed was linked to IMCI. Other elements relating to the jobaid already featured in the poster feedback. Ways to improve interpretation of the dosage table were noted, as were preferences between a 4 or 7 step processes. Two of the positions for insertion of RAS were excluded while the value of incorporating trouble shooting details alongside the referral details in the jobaid were emphasized.

The second pre testing exercise was a success – with comprehension, persuasion, acceptability and self-involvement verified. The field testing results were very useful and will enhance the value of the final materials. The usefulness of the flyer as a tool will be reconsidered and possibly modified into a flipchart tool to support training. The key changes will be prioritized and possibly retested before finalization of the RAS toolkit.

Background

WellSense worked with MMV and its Country Partners in Malawi, on the critical task of pre- testing the second set of Pre-referral Rectal Artesunate communication materials. The first set was tested in Senegal in June 2015. Testing in Malawi offered the opportunity to capture the views of a sample of respondents living and working in a Southern African context where health workers are trained in and speak English.

The purpose of pre testing is to "determine systematically which of several alternative versions of a communication will be most effective or to identify elements of a single communication that could be changed to make it more effective" (Bertrand 1978). Pretesting takes places with a representative sample of those who will ultimately use the tools – referred to as the *end user*. Pretesting is considered a cost-effective means to ensure that the communication material developed, meets the needs of all the end users. The end users in this case included national trainers at the NMCP level, district level malaria programme coordinators, nurses in a district hospital who anticipate receiving patients receiving RAS administered in remote village health posts and finally the village health workers called Health Surveillance Assistants or HSAs in Malawi, as well as mothers and fathers, with at least one child less than 6 years old and therefore eligible for RAS (Table 2).

Malawi is a high malaria burden anglophone country, with over 3 million cases a year. Pre-referral RAS is in the NSP and in the treatment guidelines. Community health workers alongside nurses are authorized to use RAS. Although RAS is not on the essential medicines list, RAS has already been used by CHW/HSAs and Health workers in health centres. There is currently sufficient supply to reach 35% of the targeted under five children presenting with severe malaria at village clinics. There are currently 11000 CHWs or HSAs of which nearly one quarter are authorized to use RDT/ACT. There are plans to scale up the number of CHW/HSAs to 22 000 in 2016. Only a portion of HSAs (137) in Mchinji District have been trained to use RAS. Full roll out is anticipated for the last quarter of 2015 or 2016.

Study Design and Methodology

Permission was granted by NMCP to conduct the pre testing exercise in Malawi (Appendix 1). The pre- testing schedule took place as described in Table 1.

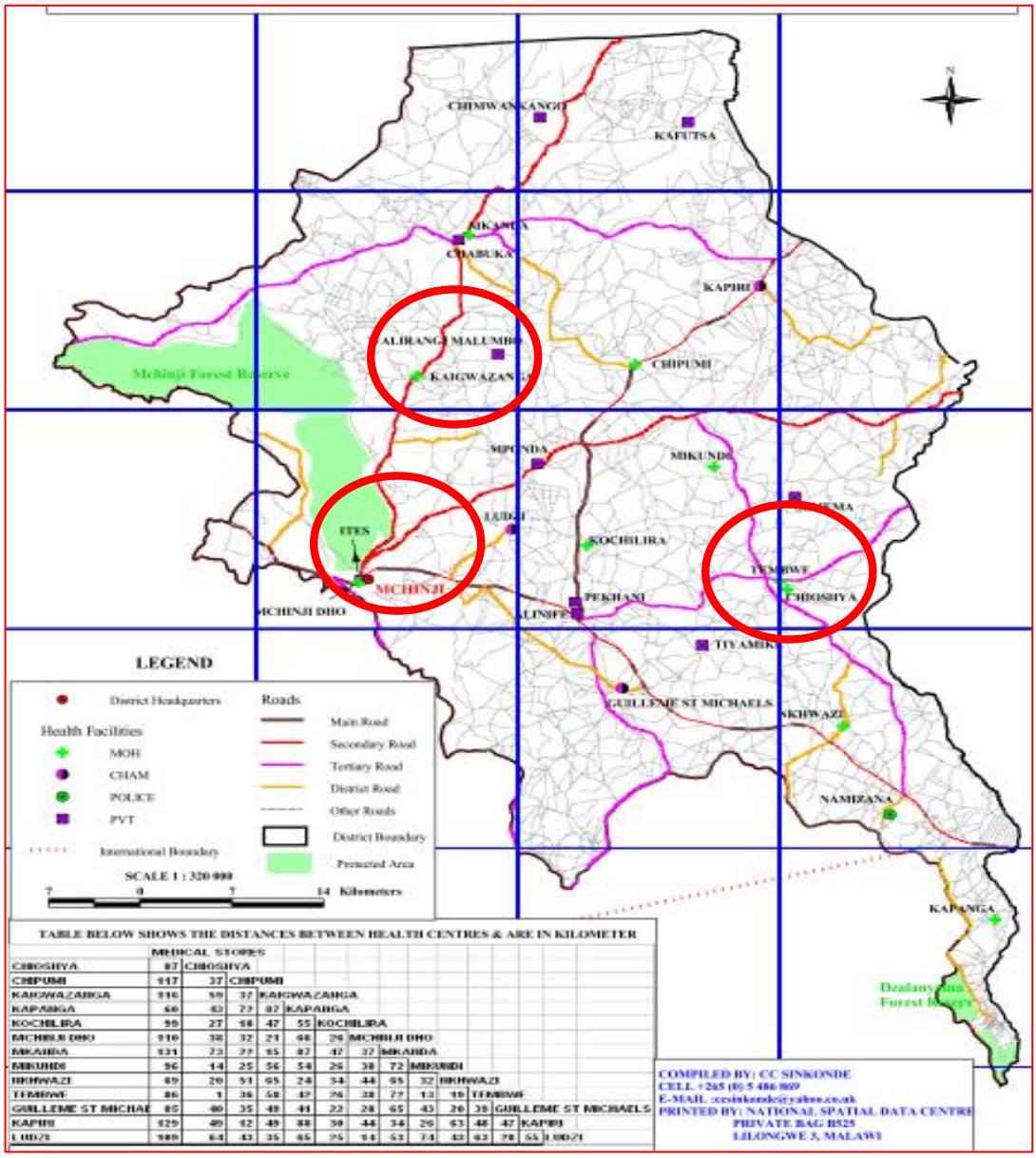
Table 1: Schedule for Pre-referral RAS for CHW in Senegal

Sun Aug. 30th	Mon Aug. 31st	Tues Sept. 1st	Wed Sept. 2nd	Thurs Sept. 3rd
Afternoon: MMV team members arrive in Lilongwe – various times. **17:00** Planning meeting Lilongwe – Consultant/MMV & NMCP.	**09:30** Travel to Mchinji District **12:00** Meet Deputy District Malaria Coordinator **13:00** HSA Group 1 at KAIGWAZANGA Health Centre **15:00** HSA Group 2 at KAIGWAZANGA Health Centre	**08:00**. Meeting with PMI & USAID **09:00** Travel to Mchinji District **11:00**. Nurses, clinicians and medical assistants. **13:00** Meet District Medical Officer **14:00** HSA 3 (untrained in malaria prevention & care) at MCHINJI DH **15:30** HSA 4 (untrained in malaria prevention & care) at MCHINJI DH	**09:00** Travel to Mchinji District, then travel further to rural village of Poko. **11:30** Field Test with 1 group of mothers **13:00** Field Test with 1 group of mothers **14:30** Travel to rural village of Kafulama **16:00** Field test with 1 group of mothers. **17:30** Field test with 1 group of fathers	**09:00** Debrief with NMCP & IMCI **12:00** Meeting with Save the Children **15:00** Meeting with UNICEF **18:00** Final meeting Consultant and MMV

The pre testing was scheduled to take place in Mchinji district (Figure 1) which was the district where Save the Children ran the RAS acceptability and feasibility study and where 137 HAS have been trained in RAS. Half the HSAs interviewed were familiar with RAS and half were RAS *naïve*. This allowed us to assess understanding among those with and without prior knowledge of the intervention.

The field test team consisted of 1 or 2 National NMCP members, a District Representative and the MMV team. The field testing with health personnel took place either at Mchinji District Hospital and Kaiwazangwa health centre. For the community interviews we travelled to Poko village which is in the catchment area of Kaiwazangwa health centre and to Kafulama village which is in the Tembwe health centre catchment.

Figure 1: Map of RAS Pre testing Sites in Mchinji District, Malawi



Mr Austin Gumbo Monitoring and Evaluation Focal Person at the Malawi National Malaria Control Program along with Mr John Sande, Case Manager and GF Malaria Grants Coordinator, planned the work alongside the Deputy District Coordinator, Mr Anderson, who sampled the required respondents based on the defined criteria. Considering the time limitations for the exercise and the distances, it was requested that he have the respondents ready for discussion at the hour and on the days allocated to the exercise. Health workers were sampled purposively (who they are and what they know). Mothers and fathers with children 0 to 6 years of age were randomly sampled from the community. The mothers and fathers originated from the surrounding communities illustrated (see red circle on the image above).

Due to the positive response to the exercise and the effective work of the district in recruiting the respondents, the numbers were sufficient to use primarily focus group discussions for data collection. There were 9 focus group discussions, each lasting up to two hours. Discussion checklists

were developed in advance of the testing and ensured that all key factors were addressed. Additional elements were added during the process as well.

Since pre-testing adopts an Action Research methodology with a particularly qualitative lens which experience shows, generates the richest feedback, the guides were not used as questionnaires.

Picture 1: Mchinji District Hospital

A key feature of pretesting is the 'repeat testing.' The 'repeat factor' is necessary to verify initial results and to tap into the views of the different groups of respondents who will expand the range of perspectives and in turn improve the overall validity of the results and ensure a representative and balanced review of the materials. A key principle of the approach includes the premise that during pretesting it is the materials that that are being tested and not the people and there are therefore no "right" or "wrong" responses. For example, a community health worker/HSA is not "wrong" or 'incompetent" if she is unable to effectively follow the RAS steps outlined in the tools presented. Instead, it is the designers and field testing researchers who will receive the feedback and decide whether they will revisit the images and text to correspond with the capacity of the sampled respondents (end users) to comprehend the materials. The second key principle is that questioning and discussion and the collection of data should continue until a point of data saturation is reached. Data saturation occurs when the consultant is no longer hearing or seeing new information emerge from the various individuals in the group.

Table 2: Categories and Numbers of Respondents – focus group discussions

CATEGORIES OF PARTICIPANTS	*female*	*male*	*Total*
CHW – HSAs – untrained in Malaria	18	3	21
CHW – HSAs – trained in Malaria	5	18	23
Mothers	27	x	27
Fathers	x	19	19
Nurses /Clinicians/Medical Assistants	7	2	9
TOTAL consulted	**57**	**42**	**99**

Broader Stakeholders - one to one Interviews

NMCP	1
IMCI	1
NGO – Save the Children	1
USAID/PMI	2
UNICEF	2
TOTAL consulted	7

The focus group discussions (FGD) started with a brief process of explanation and consent to participate and to be photographed. The discussions lasted between 60 and 90 minutes. The groups

were broken into smaller groups of 3 allowing us to capture the various views generated by small group discussion and prevent the more dominant participants from influencing the rest of the group. The field researchers moved from group to group, discretely asking key questions and collecting impressions. The impressions were then put forward to the bigger group, once having been captured in the smaller sessions. The field testing approach varied significantly with the level of literacy of the respondents. With groups where there was low level literacy, respondents were asked to focus entirely on the images and to describe their interpretation of the images or to recount the process being described using only the visual aids – the words were sometimes blocked out. With a slightly higher level of literacy, each participant was assigned a section to read out loud, to the other participants, and to explain the content in their own words. With the highest levels of literacy, participants were given the opportunity to read through a section and then the discussion was open to feedback and comments and questions.

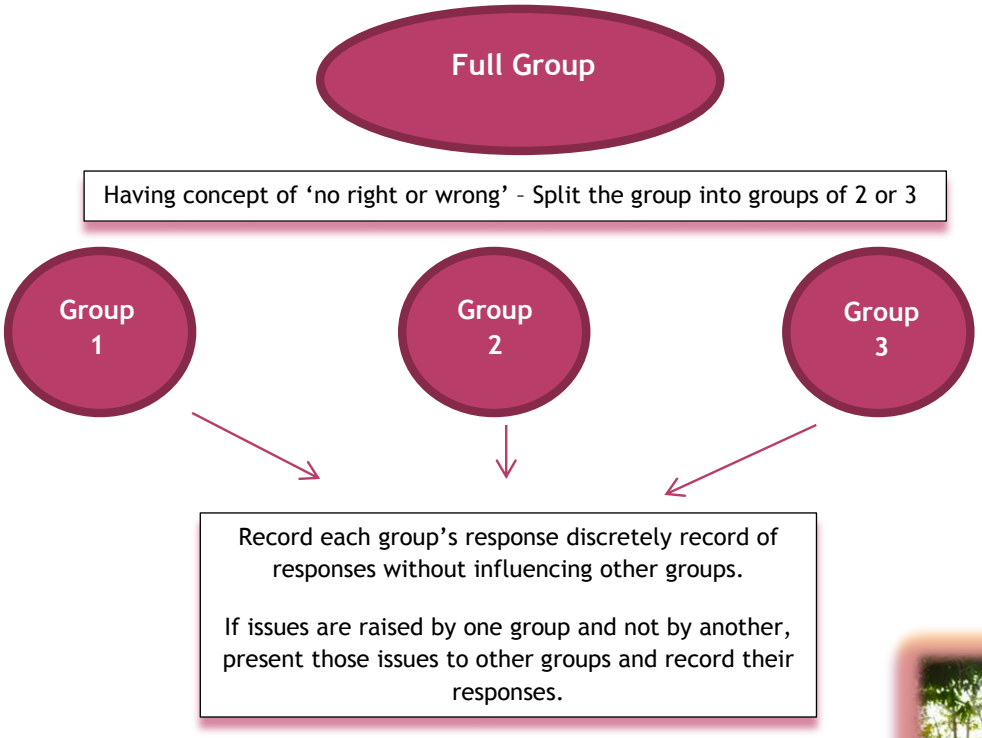


Figure 2: Configuration of Focus Group Discussions

Picture 2: HSA Group 1

Among those where 'comprehension' was being assessed, in particular the untrained HSAs, it was very helpful when respondents were asked to take the rest of the group step-by-step through the procedure by role playing using a bear called *RAS* and to illustrate practically their understanding of the process. When it was clear that most sections were well understood, the facilitators focused attention on 'trouble spots' and explored how these could be improved. The direction of the discussion was regularly reshaped and directed by the responses generated by different groups. Within a short amount of time the field testing highlighted the key areas requiring attention, as respondents repeatedly honed in on these areas. These areas prompted questions and clarification and the respondents often proposed creative solutions and alternatives. Discussion also assessed the other aspects of the assessment – attractiveness, acceptability, persuasion and self-involvement.

The nature of the field research involves ongoing real time 'analysis.' The team processes all the responses in real time as they are received and asks the participants within the smaller group to reflect or reconsider the feedback or recommendations emerging from the discussion. In addition, the feedback evolving from one discussion is presented to participants in a subsequent discussion - and in this way the emerging conclusions are re-tested.

The respondents included in the Malawi round of pre-testing are listed in Table 3.

Table 3: Components of the RAS tools tested with sampled respondents

COMPONENTS OF KIT TESTED	National Level – NMCP & IMCI	Nurses Clinicians MA	HSA	Caregivers/ Mothers/ Fathers	NGO or Donor
Flyer – Brochure-Booklet	√	√			√
Jobaid	√	√	√		√
Sensitisation Poster	√			√	

*Save the Children & UNICEF & PMI/USAID

The purpose and key questions for this pretesting phase included:

- Is the RAS content in the JOBAID comprehensive enough for an HSA level health worker?
- Is the RAS content in the FLYER and JOBAIDS relevant to country end user health workers – trained or untrained?
- Are the FLYER and JOBAIDS tools usable/appropriate/ practical for end-users with different levels of training?
- Is the level of information within the FLYER and JOBAIDS sufficient to meet the administration goals in-country?
- Are the images in the SENSITIZATION POSTER comprehensible to mothers and fathers and explainable to HSAs who are sensitizing caregivers?

The following criteria were assessed among the end users:

- **Comprehension:** Are the messages (words and/or images) clearly understood by the range (skill/rank) of users – with particular attention to the least literate/educated cadre using that tool? Was the information effectively communicated to another user?
- **Persuasion:** Is the message communicated in a meaningful way to the user and convincing enough to ensure they will follow the instructions?
- **Acceptability:** Are the images and wording – socially, culturally, religiously and economically appropriate? Is this how things are done in this community? Is what is being proposed acceptable to the majority of end users?
- **Self-involvement, Familiarity and Relevance:** Is the message perceived to be directed at the user or are the messages / images pitched at another type of end user? Is the message perceived as useful and relevant?
- **Attraction:** Are the messages able to attract and sustain the attention of the user?

When appropriate, sample quotations or excerpts are interspersed to provide insight into how the respondents communicated their impressions. These quotations only represent examples of the comments made – the discussions were not recorded in full and therefore full transcripts are not available.

Picture 5: HSA Group 3

Picture 4: HSA Group 2

Picture 3: Mothers Group 1 - Poko Village

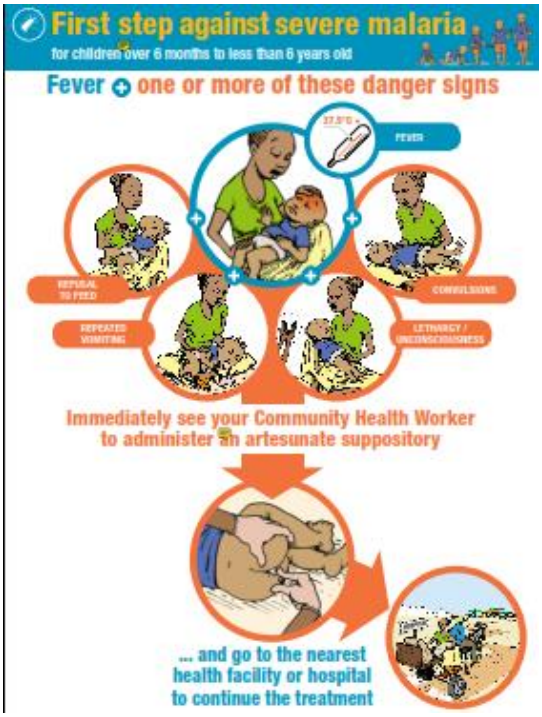
Findings - Poster

Versions

We tested 3 versions of the posters and for ease of understanding we have labeled them below. The results are presented in relation to all 3 versions and the strengths and weaknesses of each are highlighted.

FAN version

CIRCLES- version



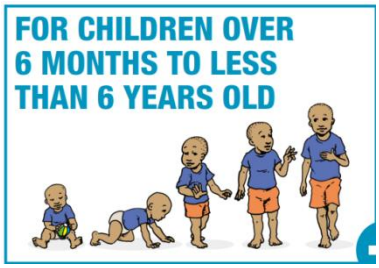
BLOCK version

"I like the arrows, they show me a direction, but not all people in the villages understand the meaning of an arrow." (HSA Group 1 Trained)

"I prefer the blocks because they show the evolution of the symptoms, side by side." (HSA Group 3 Untrained)

"I think this one [fan] shows that it can be only one danger sign, and that is enough to contact the HSA." (HSA Group 2 Trained)

Age Range



The positioning of the age range on the various posters seemed to dictate if the age dimension was noticed by respondents at all. In the fan and circle versions the age range image was tucked up in the right corner and was more often than not, overlooked. In the block version is was noticed immediately and factored into the respondents 'understanding of RAS.

"This image represents the different stages of a child's life." (HSA Group 3, Untrained)

"This shows that all these children are less than 5 years of age." (HSA Group 4, Untrained)

"It is good to show the age – some mothers will come with their 8 year old child. Then what will they do with their sick child?" (Mother Group 2)

Danger Signs

All the danger signs were relatively well understood. Only two of the danger signs remained a challenge on this second round of field testing – lethargy/unconsciousness and convulsions. Despite lack of full understanding of the actual danger sign – they captured the fact that the child was very ill and required help.

Lethargy/Unconsciousness as illustrated was still difficult to interpret. All ten community based discussion groups struggled to recognize this danger sign in the absence of written explanations. The groups recognized however that the child was very sick or dying and the limp arm was illustrative of this.

The symbol of handclapping was misunderstood by both trained and untrained HSAs and one group of mothers. There were various different interpretations of the symbol.

"This child is very sick, his arm tells me this." (HSA Group 1)

"Somebody is mourning – for this child has died." (HSA 4 Untrained)

"Someone is praying, so that this child goes to heaven." (Mother Group 2)

"This child has been taken to a traditional doctor for testing." (HSA Group 3, Untrained)

"Someone is clapping to take the sick child from the mother." (Mother, Group 1)

Refusal to feed: In the *fan* version did not include a bowl of food and was therefore sometime misinterpreted as being the child refusing medicine. Suggestions included enhancing the image of food and perhaps putting the bowl in the mothers' hand.

"The position of the child is not good for feeding. He should be in the bend of her arm." (Mother Group 1)

"This child is refusing the medicine." (Mother Group 1)

Convulsions: The untrained groups of HSAs and three subgroups of the six groups of mothers' misunderstood this danger sign. All detected the distress in the mothers' face and all realized that the child was very sick and possibly dying. The reason that these groups did not recognize the condition varied. We asked the group of nurses and clinicians how we could enhance this image and they suggested that arm recoil in the same way as the feet are doing , so as to illustrate the arm extension and the arching back.

"This mother looks very afraid. Her child is taking its last breath." (Mother Group 2)

Fever: The issue of fever as a pre-requisite or as an accompanying sign is raised in the next section. However, the image was well understood as meaning fever. The redness in the face raised some questions, but generally the issue of fever was well understood. Clarity of the actual presence of fever or history of fever is raised in the jobaid section.

"This child looks like he has fever – very high fever." (HSA Group 3 Untrained)

"We have already learned that as soon as the child has high fever, we must go to the HSA." (Mother Group 2)

One Danger Sign versus All Danger Signs

Communicating to caregivers that care should be sought when only one danger sign is present relies heavily on the presence of 'arrows' in the FAN and CIRCLES version. Symbols like the arrows and pluses were not understood as intended.

"These signs [plus signs] *show the multiplication of malaria."* (HSA Group 4 Untrained)

"These plus signs show that the signs and symptoms are added together and must be seen altogether." (HSA Group 3 Untrained)

"Crosses like this mean hospital or health centre. These crosses are telling us to seek care." (Mother Group 2)

Recognition of the Health Worker

The issue of how to represent a community health worker in a way that captures the 'role' despite regional differences emerged as challenging. The version in the materials represented the CHW in West African settings, but in sub-Saharan Africa the health worker wears a more formal uniform. The community health worker would not wear anything on her head and would not wear trousers if she was a woman. Modifications are needed to capture the formality of the role.

"The mama of the baby is from Malawi, but the one with the scarf is not from here. Women in Malawi don't wear scarves like this when they are out at and about." (HSA Group 1)

"She should be wearing that sky blue shirt but with a sky blue skirt and black shoes and no scarf." (HSA Group 2)

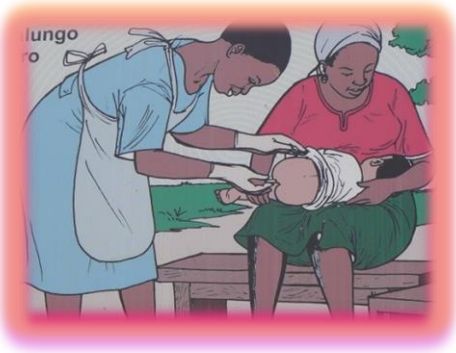
"The HSA would not kneel down like that in our country…She would ask the mother to hold the child in the right position so she can do her work." (HSA Group 2)

Sitting Position of the Mother

The position of the mother with her right knee raised and the manner, in which she is propping her child up on her knee, was an unfamiliar position for the mothers and HSAs. They could not relate to this position. They could relate more to the cross legged position.

It was suggested that the images with the mothers' knee raised be adapted to have the legs extended or to have the mother sitting on the bench, as indicated in the photos /illustrations below.

Picture 6: Alternatives for position of mother



"A mother here in Malawi cannot sit like this with her knee up and if the child is vomiting she would lift the child in her arms and wipe the vomit." (Mother Group 2)

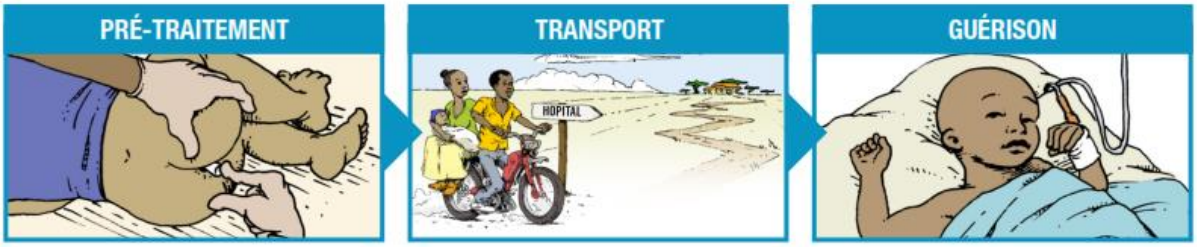
Key Words Recognized at a Glance

Despite mixed levels of literacy, we experimented with a new inquiry to see which English words the mothers and fathers reviewing the poster recognized, these included: FEVER, MALARIA, VOMITING, URGENT, COMMUNITY HEALTH WORKER were the words most frequently recognized. This was a new testing idea introduced.

First Step – Second Step

"A first step must mean there must be a second step." (HSA Group 1)

The concept of this being a 'first step' was well received by 8 of the 15 groups, but then this pre-empted the question 'what is the second step' in treatment. This reinforced the issue previously raised in pre testing in Senegal of showing the progression from the first step (seeing the HSA), then getting to the health facility as possible, in order to receive the second phase of treatment or IV /IM treatment. See below. This concept still needs to be reconsidered.



Being clear about which aspect of the process is the 'first step' was important. A phrase such as: "When you child shows the danger signs of severe malaria – take the first step and call your CHW who will administer the suppository and refer your child to hospital for care."

Severe versus Uncomplicated Malaria

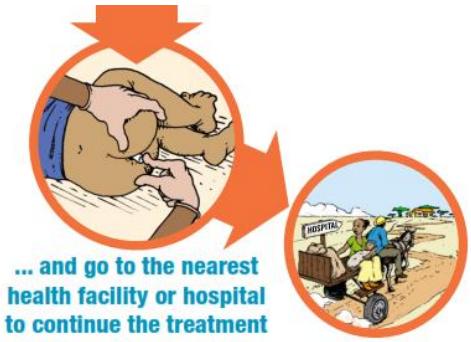
It became clear during the discussions that severe malaria and uncomplicated malaria are not readily distinguished in the community and interestingly, may not be clearly distinguished at higher levels, including among some of our key informants at NGO levels. When sensitizing the community to RAS for severe malaria there is a need for accompanying sensitization for actions needed to respond to uncomplicated malaria. Distinguishing the two conditions and their respective treatment may serve to emphasise the urgent action required with severe malaria.

The various titles in the various versions developed of posters emphasise the 'first step' idea in different ways – as discussed in the section on first step. The titles also emphasise severe malaria in different ways and some introduce the idea of the suppository right from the start, while others don't. Clarity on the best and most simple title

Transfer to Health Centre

The transfer of the child to the health facility raised much discussion. Each of these versions below were presented either in entirety or as pieces to the respondents. There was an overall sense that showing insertion of the suppository was acceptable on a public poster and this zoom in to the insertion could be accompanied by the image of the health worker with the child. Urgency should be illustrated in a way that also fostered responsibility. In other words the mother should not be running with a sick child, but instead arriving at the hospital on a bicycle supported by a family member. The health centre could be illustrated by a green cross.

The quotations below capture some of these varied impressions.



"We don't travel this way in Malawi. But this mother is at least prepared. She has a bag and she is accompanied by someone. But she is not in a hurry." (Mother, Group 1)

"It is not a problem to show the child's bottom on a public poster. We know it is for the child's wellbeing. It is OK." (Mother, Group 2)

"This mother looks like must live very close to the health centre, because she is running and there is no transport to be seen." (Mother Group 1)

"The black pointing finger – it show me which way to go, without you telling me, I don't understand this red [arrow]." (Mother Group 2)

"We can see that there is a rush, it is urgent, but this mother is not being responsible, she could fall with the baby if she runs in this way. You cannot run with a sick child is this way." (HSA Group 3 Untrained)

"This mother is alone and yet she has a very sick child. If your child is sick, you must travel with someone from the family, because you cannot leave the child alone in the hospital and you will need to find food. Someone must always travel with the mother. It could be me as a father or a relative." *(Father Group2)*

"It is difficult to know what the HSA is doing to the child; I thought the child was receiving an injection. It will need to be clear that the HSA is putting this medicine inside the child's bottom." (Father Group 1)

"*A child under 5 will travel with their mother on a bicycle*." (Mother Group 1)

"Those buildings are far and not clear – where is she going? If it is a health centre, a green cross is good" (Mother Group 2)

Picture 7: Various Field Testing Pictures

Findings – Jobaid & Leaflet

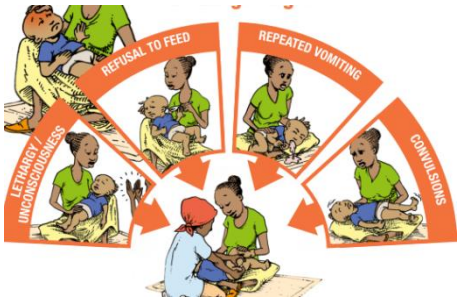
The Jobaid was presented to all groups of health workers while the flyer was only presented to the nurses/medical assistants and clinicians. Certain feedback and recommendations overlapped between the jobaid (a summary document) and the flyer (training guide) and so these findings are all presented together. Many of the poster findings apply to this the jobaid and leaflet too.

Remember A+C+T

The 'acronym' ACT was not self-evident for all. Of the fifteen groups of HSAs who were reviewing the material, 12 groups of HSAs did not immediately capture the idea of ACT. When this was raised and discussed with them, it was suggested that understanding the acronym as a memory aid would be an outcome of training.

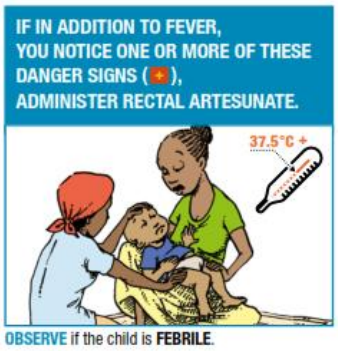
Further discussion in three groups relating to the acronym raised the issue that under C for **Conditions**, there was no reference to the actual administration of the RAS, despite the page being labelled **Prescribe Rectal artesunate**

Suggestions were made to include the 'fan' version from the poster to incorporate the RAS insertion element and this would also replace the square presentation of danger signs which was not appreciated by 9/15 groups of health care workers.



However, this may mean changing the A C T acronym to capture the idea of administration of RAS. However, the issue of the acronym not capturing the administration element may mean that an additional letter should be added to the acronym.

Fever



The presence or absence of fever and how it was illustrated raised various issues among all groups of trained and untrained health workers, and were also revealed during the community discussions. First it was noted that in the leaflet/training guide the task of OBSERVING if the child is febrile would not suffice as an assessment and therefore the health worker would need to TOUCH or FEEL or ASK about history of fever. Adapting the text to state: IF IN ADDITION TO FEVER OR HISTORY OF FEVER IN THE PREVIOUS 3 DAYS YOU NOTICE ONE OR MORE OF THESE DANGER SIGNS – ADMINISTER RECTAL ARTESUNATE. Among the untrained HSAs it was not clear whether *"fever on its own was sufficient to seek care from the HSA?"* Integrating these tools into the IMCI fever management algorithms or at least linking or referring to them was raised during discussions with the UNICEF team. Clarity on how to act when only fever is present may need to feature in the training guide.

Hygiene

"We are reminded to wear gloves but the HSA is not wearing any!" (HSA Group 1 - *trained)*

"Where will the HSA dispose of the gloves and the suppository package?" (HAS Group 2 - trained)

Small remarks that were made include that the on the insertion image in the jobaid we had neglected to show the HAS wearing gloves (noted by 6/15 groups).

Photo 1: A medical waste box in the village clinic

Two groups of health workers felt that a bin or waste disposal box should be visible for discarding the soiled gloves, as illustrated in photo from Poko village clinic, to the right.

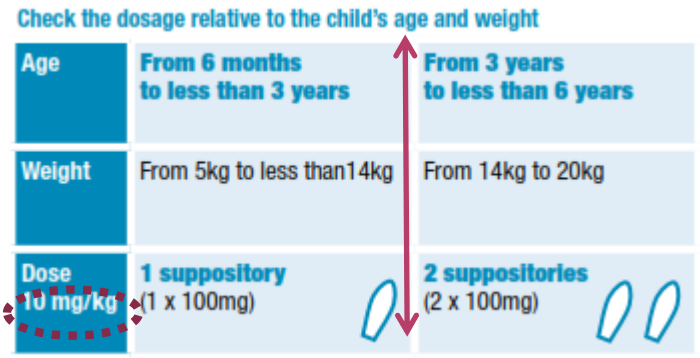
HSA Kit

Some participants noted that the HSA should have a bag or a cooler box nearby, where s/he keeps the supplies and from which the RAS would be extracted. The issue of cooling the rectal Artesunate suppositories has not been tackled in this version of the tools and remains a discussion point. Malawi does not have a very hot climate, but other sites will need to address this issue.

Picture 8: Cooler box & supply kit laid out on table

Dosage Table & Weighing Scale

The capacity to interpret the table was variable by group of health worker and particularly by training. The untrained HSA were not skilled at interpreting tables and so struggled with knowing where to start reading the table and whether to move across or down.

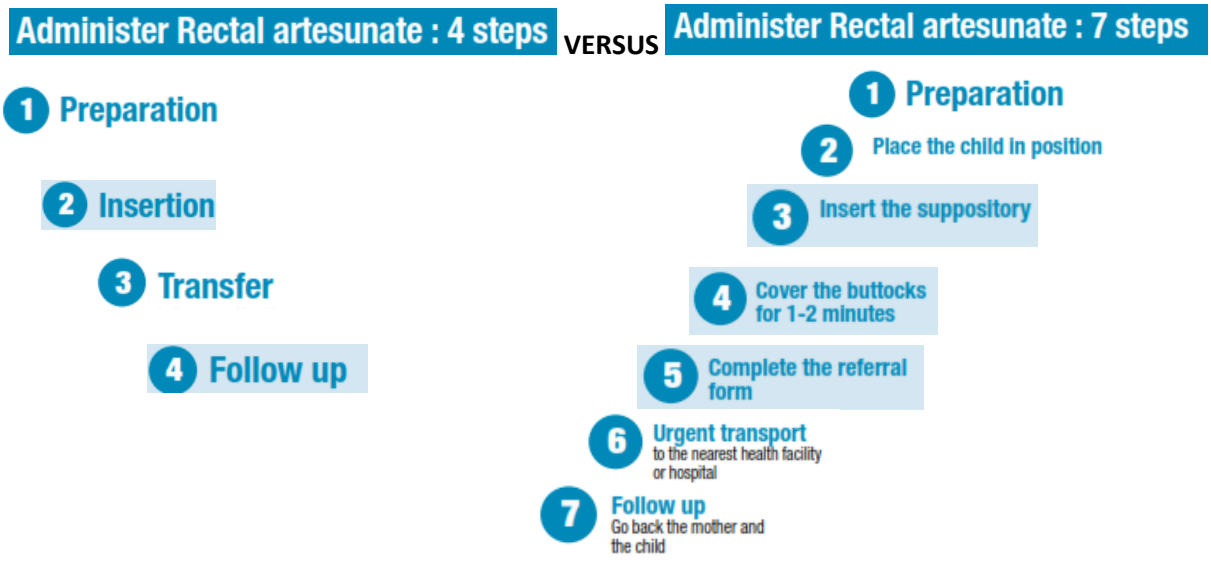


In Malawi the dose is based on estimated age and not on weight. The weighing scale was recognised, but unlike the ASCs consulted in Senegal who would weigh the child, HSAs are not equipped with weighing scales. The emphasis on two age categories was most relevant. Respondents who struggled to read the table were shown how to read it and then asked to suggest ways to improve the experience. It was suggested that each column be a different colour, so that the different age categories are distinct by colour. They then thought they would remember to travel down a colour coded column to see the dose/# of suppositories. The dosage of 10 mg/kg was not noticed or entirely missed by 9/15 groups. This could be emphasised with a colour or font change.

Number of Steps in Jobaid and Flyer

There was not a clear preference for either the 4 step or the 7 step jobaid among the trained health workers. The two versions were not presented to the untrained health workers, as they were only presented with the 4 step jobaid. Despite there not being a preference, as field testers we noticed that the health workers who worked through both versions, we able to hold the 'big picture' better with the 4 steps in the case of a jobaid, since it emphasised the more important categories and may be more readily recalled post-training.

However, in the case of the flyer or more detail training guide, the 7 steps may prove more appropriate for the purposes of training and breaking down the tasks to 'bite size pieces.'



Preparation - Flyer

The title has an error requiring correction. **HOW TO ADMINISTER RESTAL ARTESUNATE**

Weigh the child

As discussed, this image may not be appropriate for the Malawian context. However, weighing a child before administering a drug is best practice. Therefore, the flyer could specify, if possible, weigh the child and/or check the age of the child.

Check the dosage relative to the child's age and weight

In this tab the health worker is asked to check the dosage relative to the child's age and weight. It was raised in the discussion with the group of nurses and clinicians that they would typically choose either *weight* or *age* and not both. They gave the example that a 3 year old child may not weigh in at 14 kilo and if the two requirements do not match, this can raise questions,

Age	From 6 months to less than 3 years	From 3 years to less than 6 years
Weight	From 5kg to less than14kg	From 14kg to 20kg
Dose 10 mg/kg	1 suppository (1 x 100mg)	2 suppositories (2 x 100mg)

Put on a pair of disposable gloves

The person (mother or caregiver) inserting the suppository should simply wash their hands.

No gloves are necessary, unless the person wishes otherwise.

Prepare the patient

- → Explain the procedure and what it will involve to the caregiver or parent.
- → Rule out any contraindications – primarily if the child has reacted badly to artesunate in the past.
- → Ensure privacy for the procedure.

The remaining preparation steps were well understood. However it was noted that the health worker/HAS should be wearing gloves in the image labelled 'prepare the patient.'

The various positions for insertion were ruled out as having no value by 11/15 groups. The preferred position remains the lateral position with the knees flexed and was considered suitable for a child presenting with danger signs.

Side Position

Front Facing Position

Legs Up Position

Insertion

The image illustrating removal of the suppository from the wrapper was removed from this version and was not tested. It may however still be valuable in the flyer, for training purposes since certain untrained HSAs were not familiar with suppositories. *"The HSA is trying to insert something into the anus, a white tablet."* (HSA Group 4 Untrained)

Note, also the text requires some changes

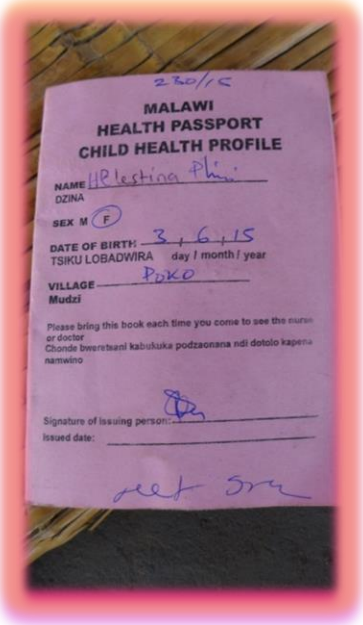
Remove the suppository from the wrapper and insert it

Gently, but firmly insert the suppository, round pointed end first, pushing with one of your fingers, into the anus ~~with one finger~~ as far as it can go, until it passes the rectal muscular sphincter; about ½ to 1 inch in children. This is to ensure that it does not come out easily.

This image needs to be a good size, so that the action is not misunderstood to be an injection. One group of untrained HSA's was not familiar with the idea of a suppository and so when interpreting the table, referred to the suppository as a 'tablet'. This raised the issue that the mode of administration should be re-emphasized on the dosing table.

Referral

The referral features were only addressed in the flyer but when the referral form and process were discussed with the groups, including what should be included in the referral process, some referred to standard referral forms which they stated are rarely available (picture x) and to the children's' health passport (picture 9). It was noted by 7 of the 15 groups, 3 of these being the health workers receiving RAS referrals, that the referral details should be indicated on the jobaid, to remind the HSAs to write all the key information on the referral.



Picture 9: Malawi Health Passport for children

Some of the HSAs were not comfortable with seeing the HAS in the image completing the referral form on the floor. They thought there should be a table. However, when visiting the village clinics it was likely that some village health post would not necessarily have a table. See Picture below.

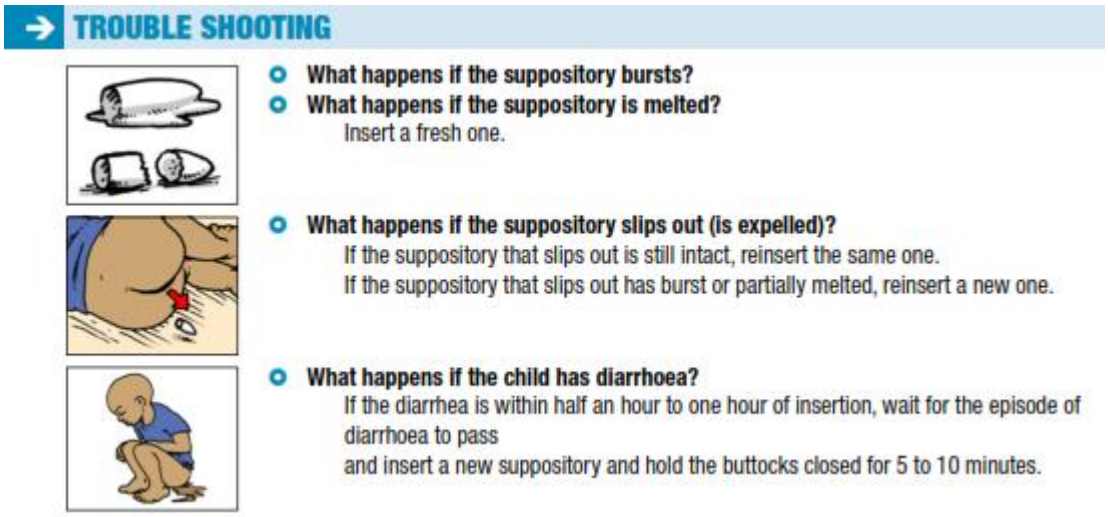
Picture 10: Village Clinic - Poko Village

Complete the referral form

Complete the referral form for the mother/caregiver to take with her /him to the hospital. Provide as much detail as you can following the guidelies in Note 2.

Troubleshooting

Troubleshooting was only addressed in the flyer and yet 8/15 groups felt that the trouble shooting issues should be noted on the job aid - since they are events that don't happen often, they would need a reminder on the job aid how to handle administration under unusual circumstances – like a burst suppository or diarrhoea. It was noted that a little trouble shooting box could feature on the jobaid.



Broader Stakeholder Interviews

NMCP Malawi - Toolkit Buy-In

The NMCP of Malawi was very cooperative and engaged throughout the pre testing process. In addition to making suggestions, incorporated into the findings above, they requested editable tools that they could use as they roll out pre-referral RAS. We were also able to share with the links to all the other communication material developed by MMV for health workers.

NGO/Donors

The stakeholders we consulted were very supportive of this exercise. The main feedback received included:

- Need to integrate these tools into the other tools and treatment protocols for severe and uncomplicated malaria – that are currently in circulation. Unfortunately we could not see or get copies of these other tools at the time of the discussion. We are requesting copies of these to see possible areas for linkages.
- Emphasis on the referral dimension post treatment with RAS. Stakeholders raised concerns that the emphasis on the 'second step' needed to be enhanced nationally.
- Reconciling differences in dosages and age groups eligible for treatment was also requested.
- Others were intrigued by the methodology and were keen to see the outcomes of the field testing and the changes to the materials as a result of the exercise.

Conclusion

In reviewing the criteria set out at the start of the pretesting, the following conclusions can be drawn:

- **Comprehension:** Overall the tools were generally very well pitched for the trained community health worker /Health Surveillance Assistant. The untrained community health worker responses were more in line with those of the community caregivers and emphasized the need for excellent training tools, in addition to jobaids for post training. However, with support and simple explanations and clarifications the poster and jobaid were understood by the respondents and only minor changes are required to enhance the tools further.

- **Persuasion:** The simplicity of the jobaid was appreciated and the steps simple enough to follow. Although key changes are needed to further simplify the process. The poster remains dense and could be simplified further. Nevertheless the parents responded to the images of the sick children and understood the necessity to seek care. The realistic images that are not abstract were very useful in reflecting the parents' commitment to protecting their children.

- **Acceptability:** The suppository and the way in which it is presented in the materials were acceptable to the respondents at all levels, including the caregivers. The images were slightly inconsistent with cultural nuances, with a few key suggested changes that apply to Southern African / Malawian culture. The jobaid as a simplified version of the flyer was valued but the usefulness of the flyer needs to be reconsidered and possibly translated into a flipchart training tool – as the role of the flyer was not clear to the group of health workers with whom it was tested.

- **Self-involvement, Familiarity and Relevance:** The jobaid was relatively well pitched at the level of the trained community health worker/HSA but not an untrained HSA. Therefore, further simplification would be important. The average community health worker consulted had little or no formal education and therefore the fact that the images were leading as opposed to the text was very relevant. The slight changes in setting, postures and appearances will enhance familiarity.

- **Attraction:** The tools all demonstrated the potential to attract and sustain the attention of the users. The colors were appropriate and appreciated.

The second pre testing exercise was a success. The changes proposed are very useful and will enhance the value of the materials. The usefulness of the flyer as a tool should be considered and possibly modified into a flipchart tool for training. The key changes should be prioritized and possibly retested before finalisation of the toolkit.

Appendix 1

Tabular Summary of Key Changes Needed

Poster

1)	Include full body of modified health worker clapping her hands. If health worker is recognizable then health workers can use this accepted approach for assessing consciousness. Whether to include this image on public sensitization poster or simply a lethargic child can be considered.
2)	Food refusal – bowl absent in some pictures, so misunderstood as medicine administration. Make bowl more prominent and change position of mother holding child.
3)	Convulsion sign misunderstood by some. Enhance coiling of hand.
4)	Clarify that fever is an accompanying sign and not a stand -alone sign.
5)	Clarity to communicate that only one danger sign is needed for RAS
6)	Remove all plus / + signs – not helpful.
7)	HSA Appearance incorrect – too informal. Remove head scarf and change outfit.
8)	Mother position incorrect & child support inappropriate in images with knee propped up.
9)	Gloves missing on HSA in one key image.
10)	HSA kit/cooler box to be considered
11)	HSA – gloves disposal location to be considered.
12)	Size of insertion image – increase size to ensure procedure not interpreted as an injection
13)	Referral – mother running change. Have a form of transport and someone accompanying her.
14)	Position of child in running picture noted – Mother should have child strapped to back.
15)	Alternative transport recommended – bike for Malawi version
16)	Support network needs to be illustrated – father or friends
17)	Age range –development/ age understood & but not prominent in all versions
18)	Finger pointing to Health centre – preference to arrow for some.
19)	Reinforce concept of first step which calls for a second step
20)	Health Centre needs Cross or ambulance

Jobaid

1)	A C T not useful if we incorporate the task of administering the RAS. Acronym should change.
2)	Consider enhancing the fan version of the poster and incorporating into the jobaid and so include the insertion element.
3)	Highlight the presence of fever or reported history of fever
4)	Fever – add look/feel replace observe in flyer
5)	Expand insertion picture – on 1st page
6)	Highlight hygiene - gloves on HSA missing
7)	Highlight hygiene - illustrate location for disposal of gloves
8)	Dosage table – direction of interpretation unclear, change color to emphasize direction
9)	Dosage of 10mg/kg – missed or not noticed. Either relocate or emphasize in a new way.
10)	Consider benefits of 4 step for jobaid and 7 step for flyer.
11)	Remove alternative positions for insertion.
12)	Weighing scale – not relevant to Malawi HSA circumstances – consider removing.
13)	RAS Dosage typically based on age in Malawi – so consider emphasis on age column.
14)	Trouble shooting questions needed on short jobaid as reminder.
15)	Referral details to include on short job aid version

Appendix 2

Tabular Summary of Findings

POSTER	HSA 1 3 groups	HSA 2 3 groups	HSA 3 3 groups	HSA 4 3 groups	HW 1 3 groups	Mother 1 3 groups	Mother 2 2 groups	Father 1 3 groups	Father 2 2 groups
Lethargy danger sign difficult to interpret	xxx	√xx	√xx	√xx	x	x	x	x	x
Issue with clapping hands - various	√xx	√xx	√xx	√xx	xxx	xx	√√	xxx	√x
Food refusal – bowl absent, misunderstood as medicine admin.	xxx	√xx	√xx	xxx	xxx	xx	√√	xxx	xx
Convulsion sign misunderstood	xxx	√xx	√xx	xxx	xxx	xx	√√	xxx	xx
Fever as an accompanying sign (not stand alone sign) not clear in images	xxx	xxx	√√x	xxx	xxx	xx	Xx	xxx	xx
Clarity sought around all danger signs needed vs one danger sign needed for RAS	√xx	√xx	xxx	√xx	xxx	√x	√x	√√x	√x
Pallor/anemia – danger sign missing	xxx	√xx	xxx	xxx	xxx	xx	xx	xxx	xx
Plus / + sign misunderstood	xxx	xxx	√xx	√xx	xxx	√x	√x	√√x	√x
HSA Appearance incorrect - informal	√√√	√√√	xxx	xxx	xxx	xx	xx	xxx	xx
Mother position incorrect & child support inappropriate	√√√	√√√	xxx	xxx	√√√	xx	√√	xxx	xx
Gloves missing on HSA	√√√	√√√	xxx	xxx	xxx	√√	√√	xxx	xx
HSA kit/cooler box missing	√√x	√√x	xxx	xxx	xxx	xx	xx	xxx	xx
HSA – gloves disposal location	√√x	√xx	xxx	xxx	√√x	xx	xx	xxx	xx
Size of insertion image – misconstrued as injection	xxx	xxx	√√x	xxx	xxx	√x	√x	√√x	√x
Referral – mother running inappropriate	√√x	√√x	√√x	xxx	xxx	√x	√x	√√x	√x
Position of child in running picture noted	√√x	xxx	xxx	xxx	xxx	√x	√x	xxx	xx
Alternative transport	√√√	√√√	xxx	√√√	xxx	xx	√x	√√√	√x

recommended – bike for Malawi version									
Support network needs to be illustrated – father or friends	xxx	√√x	√xx	xxx	√√√	√√x	xx	√xx	√x
Age range – development/ age understood & but not prominent in fan version	√√x	√√x	√√x	√√x	xxx	√xx	xx	√xx	√x
Finger pointing to Health centre – preference to arrow	Not tested					√√√	√√	√√x	√√
Concept of first step captured by some – who call for a second step	√√x	√√	xxx	xxx	√√x	xxx	xx	xxx	√√
Health Centre needs Cross or ambulance	xxx	xxx	√√x	√√x	√√x	√√x	√x	√√x	√√

Jobaid	HSA 1 3 groups	HSA 2 3 groups	HSA 3 3 groups untrained	HSA 4 3 groups untrained	HW 1 3 groups
A C T recognized and useful	√√	xxx	xxx	xxx	√xx
Square Format/Arrangement of the Danger Signs – not liked (fan preferred)	xxx	xxx	√√x	√√x	xxx
Addition of History of Fever	√√x	xxx	xxx	xxx	√√√
Fever – add look/feel replace observe	√xx	√xx	xxx	xxx	√√√
Expand insertion picture – on 1st page	xxx	xxx	√xx	√xx	xxx
Insertion of suppository – illustrate how far into anus	xxx	xxx	√xx	√xx	xxx
Gloves on HSA missing	√√x	√√x	xxx	xxx	√√x
Illustrate location for disposal of gloves	√xx	xxx	xxx	xxx	√xx
Dosage table – direction of interpretation unclear	xxx	xxx	√√x	√√x	xxx
Dosage of 10mg/kg – missed or not noticed	xxx	√x	√√√	√√√	xxx
7 step versus 4 step	50/50	50/50	Not assessed	Not assessed	50/50
Alternative positions for insertion – of no value	√√√	√√√	√xx	√xx	√√√
Weighing scale – not relevant to Malawi HSA	√xx	√√x	√√x	√√√	xxx
RAS Dosage typically based on age – so suggest emphasis on age column	√√√	√√√	xxx	xxx	√√√
Trouble shooting questions needed on short jobaid	√√x	√√√	xxx	xxx	√√√
Referral details to include on short job aid version	√√x	√√x	xxx	xxx	√√√
Suppository is a tablet (clarify)	xxx	xxx	√√√	√√x	xxx

Appendix 3

Permission Letter – NMCP Malawi

Telegrams: MINMED, Lilongwe

Telephone: 01 789 400
Fax:

Communications should be addressed to
Secretary for Health

Reply please quote Ref Med.....
Ministry of Health
P.O. Box 30377,
Lilongwe 3,
MALAWI

REF: CHSU/VOL 1/01

27th August, 2015

TO: Mchinji DHO,
Box 36,
Mchinji.

Dear Sir/Madam,

RE: PERMISSION TO CONDUCT FIELD INTERVIEWS ON RECTAL ARTESUNATE TRAINING MATERIALS AND SENSITIZATION POSTER

The Ministry of Health through the National Malaria Control Program NMCP) in collaboration with the Medicines for Malaria Venture (MMV) is working with Dr Monique Oliff as a consultant to test different training materials for Rectal Artesunate in Mchinji district. This will ensure that the final training materials facilitate the correct usage of the treatment and the messages on the sensitization poster are interpreted correctly.

In view of this, NMCP ask your office to permit MMV with the consultant to conduct the above mentioned activity in your facilities. The field-testing will be conducted from August 30th to September 4th 2015 and will target Health Care Workers in health facilities, Health Surveillance Assistants in village clinics and care givers.

Please assist the bearer of this letter in conducting the interviews within your facility.
Your assistance will be much appreciated.

Yours sincerely,

Doreen Ali
DEPUTY DIRECTOR OF PREVENTIVE HEALTH SERVICES (MALARIA)