

TREATING SEVERE ACUTE MALNUTRITION WITH COMMUNITY HEALTH WORKERS

THE EVIDENCE FROM MALI AND PAKISTAN

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**ACTION
AGAINST
HUNGER**



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BACKGROUND

Severe Acute Malnutrition (SAM¹) is a major global public health challenge, with an estimated 16 million children under-five years suffering from the condition at any one time. Children suffering with SAM are the most vulnerable and are consequently nine times more likely to die than a well-nourished child.

Over the years, the public health community has made enormous strides in the capacity to identify, rehabilitate and cure children with severe acute malnutrition. Despite these meaningful advancements, the number of children suffering remains steady year after year. SAM can be successfully addressed so the question remains,

how can we get treatment to children who need it?

In 2012, Action Against Hunger launched an initiative to assess the main reasons preventing children from accessing treatment services for SAM. The message was clear: on average, SAM-treatment services delivered through health facilities only reach approximately 40% of SAM cases in their target areas. In order to increase the proportion of SAM children that access treatment, key barriers like lack of awareness and distance to travel need to be addressed.

The question is how.

KEY SAM TREATMENT BARRIERS



LIMITED HEALTH INFRASTRUCTURE

The majority of health infrastructures in high burden countries in Africa and Asia are ill-prepared to cater for high numbers of SAM cases, resulting in long waiting times and an inconsistent quality of care.



COMMUNICATION GAP

People are generally unaware of SAM treatment services, where they are, how they work and what they offer.



LIMITED ACCESS

When awareness about the services does exist, people are unable to use them as they are often available too far away for people to travel.

1. The World Health Organisation defines Severe Acute Malnutrition by a very low weight for height, by visible severe wasting & the presence of nutritional oedema.

COMMUNITY HEALTH WORKERS (CHWs)

Community Health Workers (CHWs) provide basic health services to people at village level, including maternal and child health education, behavior change, and are trained to screen for, classify and treat the three main diseases directly responsible for childhood deaths: diarrhea, pneumonia and malaria.

Community Health Workers can identify children suffering from Severe Acute Malnutrition, but they do not provide treatment themselves, instead referring cases to a health facility offering SAM treatment. For many parents, treatment facilities are far away and the time and financial costs can be prohibitive.

The question for Action Against Hunger was whether Community Health Workers could provide life-saving treatment for SAM in the communities in which they live.

TREATMENT OF SAM BY COMMUNITY HEALTH WORKERS

In 2014 Action Against Hunger and the innocent foundation launched a study to explore whether Community Health Workers could successfully treat Severe Acute Malnutrition. The study set out to create a robust and reliable evidence base about the implications and impact of treating SAM as part of integrated Community Case Management (ICCM), the package of child health services provided by Community Health Workers in their communities.

Mali & Pakistan were the two case sites chosen for the study, which ran from 2014-2016. Each site assessed the performance of the Community Health Worker model against the standard health facility based model to answer four core questions:

1 COVERAGE

Does treatment by Community Health Workers increase coverage of SAM treatment services?

2 EFFECTIVENESS OF TREATMENT

Can treatment by Community Health Workers successfully rehabilitate as many children as treatment in health facilities?

3 QUALITY OF CARE

Can Community Health Workers deliver the same quality of care as health facilities?

4 COST EFFECTIVENESS

Is the treatment cost per child equal to/lower than health facility treatment?

"When our Community Health Worker moved to our village to set up the local health post, my daughter was very ill. He visited us at our home twice a week, weighing her, taking her temperature and giving us therapeutic food needed for her recovery. I'm less scared for my children now. Because now I know that they'll receive care and can get better."

Mahat Dansia





MALI

COMMUNITY HEALTH WORKER PROFILE

NUMBER OF COMMUNITY HEALTH WORKERS
18

MEDIAN AGE
29 years

GENDER
76.5% Community Health Workers were women

EDUCATION
minimum 7th grade education

EXPERIENCE

- average health experience: 3 years
- number of years Community Health Worker experience: 1-5 years

The study was run in conjunction with the University of Bamako, the National Public Health Research Institute and the Nutrition Section of the Ministry of Health. The two-armed observational study compared key performance indicators in two neighbouring sectors of Kita District of the Kayes Region.

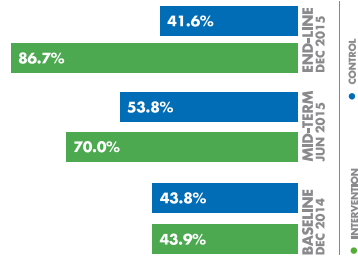
- **Control Area:** SAM treatment continued at facility level
- **Intervention Area:** SAM treatment delivered by health facilities and Community Health Workers

The study included all children admitted into Ministry of Health program (supported by Action Against Hunger) in each of the two sectors over a twelve-month period. Community Health Workers provided RUTF² and medicines for SAM children. They also delivered nutritional health education & counselling for the carers.

1 COVERAGE

Coverage assessments were carried out across three separate stages of the project to determine the proportion of SAM children in the target area admitted into the project.

The level of coverage in the intervention area was significantly higher than that of the health facility halfway and at the end of the project. A year into the project, Community Health Workers were reaching twice the proportion of cases reached by health facilities.



² RUTF: Ready-to-use therapeutic foods. RUTFs are high energy, fortified, ready-to-eat foods. RUTF does not require water, refrigeration or preparation, making it the ideal product for treating children with SAM in their communities

2 EFFECTIVENESS OF TREATMENT

Community Health Workers treated and rehabilitated the large majority of children enrolled in the program.

By making the treatment more accessible, Community Health Workers reduced the risk of children abandoning treatment before completing it. Compared to areas where treatment was provided at health facilities, the likelihood of defaulting was significantly lower in areas where treatment was provided by Community Health Workers. This in turn lowers the risk of a child becoming malnourished again, thereby improving the short and mid-term impact of services.

	intervention		control	
	number	percentage	number	percentage
Total	617		212	
*Recovered ³	581	94.17%	187	88.21%
*Defaulted ⁴	28	4.5%	23	10.85%
Deceased	5	0.49%	2	0.94%
Non-responder	3	0.49%	0	0.00%

3 QUALITY OF CARE

The Community Health Workers were highly effective in adhering to the SAM treatment protocols established at the onset of the study.

assessment	number of cases assessed	percentage of cases
Child correctly assessed for oedema	125	78%
Child's MUAC correctly measured	125	97%
Child's appetite test was correctly performed	36	77%
Cases properly identified & treated	117	80%

The majority of SAM-affected children were correctly assessed for the presence of major clinical signs (cough, diarrhea, fever and vomiting) and similarly most children were correctly assessed for presence of danger signs (e.g. lack of appetite).

Whilst not formally measured, anecdotal results received during the project revealed that the caregivers' perception of the treatment received was equally positive.

³ Recovered: Recovery was defined as MUAC $\geq$ 115mm, child clinically well, absence of oedema for two consecutive visits, and minimum stay of 8 weeks in the program
⁴ Defaulted: A case was considered defaulter if it was absent for two consecutive visits



LADY HEALTH WORKERS
NUMBER OF LADY HEALTH WORKERS
72 – 1 per health house

MEDIAN AGE
36 years

EDUCATION
minimum of 8 years school education (mandated criteria for all Lady Health Workers working in Pakistan)

EXPERIENCE
all belonged to existing government program & attached to a government health facility

LOCATION
health house is located in each village: approx. 10-25 mins walk from each household

PAKISTAN

Action Against Hunger and Aga Khan University, in agreement with the **Department of Health of Pakistan**, tested the feasibility of the implementation of treatment of uncomplicated SAM in the community by Lady Health Workers (LHWs). The study was a two-armed cluster-randomised controlled trial (CRCT).

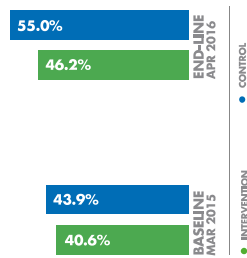
- **Control Area:** SAM treatment continued at facility level
- **Intervention Area:** SAM treatment delivered by health facilities and Lady Health Workers

In the intervention group, 72 Health Houses⁵ were established where Lady Health Workers called families with SAM-affected children on a weekly basis, provided them with Ready-to-Use Therapeutic Food and medicines for SAM children, and delivered individual nutritional education and counselling.

1 COVERAGE

The Lady Health Worker coverage results proved to be relatively on par with the health centres in the successful treatment of SAM. The two most common reported reasons for children not seeking treatment were; a) child had just become eligible for treatment (>6 months old), and; b) caregivers were unaware of the existence of the Health House.

Poor communication and Ready-to-Use Therapeutic Food stock-outs are also believed to have negatively affected access to services. Lady Health Workers did not deliver Ready-to-Use Therapeutic Food to the homes of beneficiaries and the caretakers had to visit Health House up to 20 minutes from their home, which may have also contributed to lower access to treatment.



⁵ Health House: Health House is a house of Lady Health Workers where people can come for basic treatment or guidance

2 EFFECTIVENESS OF TREATMENT

The success of Lady Health Worker treatment was relatively on par with those achieved in the control area.

Recovery rate was beyond the international standards, suggesting that trained Community Health Workers are able to identify the acutely malnourished children early in the course of disease and manage them in the community. The death and defaulter rate remained low in both groups.

	intervention		control	
	number	percentage	number	percentage
Total	425		393	
*Recovered	323	76.0%	326	83.3%
*Defaulted	16	3.8%	10	2.5%
Deceased	1	0.2%	2	0.5%
Non-responder	85	20.0%	55	14.0%

The most significant variation was amongst children who remained malnourished after 65 days in the program (non-responders). The reasons for this are not clear, but are thought to be the result of a burdened agricultural society, lack of treatment permission from male family members, and cultural conflicts.

3 QUALITY OF CARE

Lady Health Workers are able to assess the nutritional status of SAM cases and provide appropriate treatment. Of all the cases of SAM assessed during this study, 68.0% received the required medical and nutrition treatment.

assessment	number of cases assessed	percentage of cases
Child correctly assessed for oedema	16	87.5%
Child's MUAC correctly measured	61	57.4%
Child's appetite test was correctly performed	50	42.0%
Cases properly identified & treated	50	68.0%

Quality of care was not as consistently positive as the Mali case site, demonstrating that additional measures (e.g. more regular support and monitoring) may be required to ensure a consistent quality of care.

4 COST EFFECTIVENESS

A study was carried out at each case site to assess the cost-effectiveness for SAM treatment delivered in the community by Community Health Workers. Cost-effectiveness ratios were calculated with regards to cost per child treated and cost per child recovered.

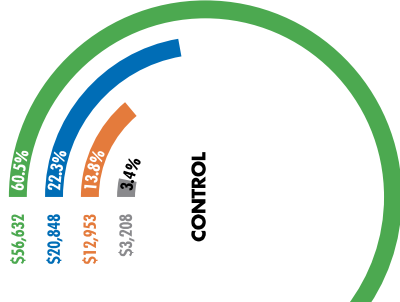
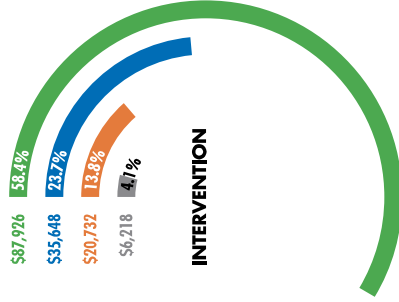
	Mali		Pakistan	
	intervention	control	intervention	control
Total cost (USD)	\$150,523.00	\$93,614.00	\$123,497.00	\$118,198.00
Number of children in program	617	212	425	393
Recovery Rate	94.17%	88.21%	76.00%	82.95%
Number of children recovered	581	187	323	326
Cost per child treated (USD)	\$244.00	\$442.00	\$291.00	\$301.00
Cost per child recovered (USD)	\$259.00	\$501.00	\$382.00	\$363.00

The data from Mali suggests that for health facilities to offer a more cost-effective approach, they would have to increase their admissions three-fold. Given the growing body of evidence about the barriers to access in SAM treatment programs, this is unlikely to be easily achieved, making the Community Health Worker approach a potentially viable and more effective alternative.

MALI

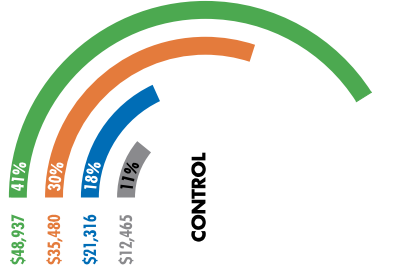
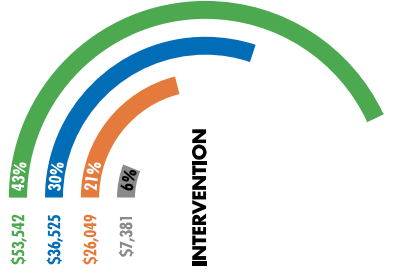
The Community Health Workers (staff) costs were nearly 3 times higher for the intervention area, reflecting their increased role in the delivery of the intervention. The principal difference in program costs was in the supply of Ready-to-Use Therapeutic Food, which was over three times higher in the intervention arm. This is reflective of the much higher number of children being treated by the Community Health Workers during the project.

This study found that the cost to the beneficiary household per week of Community Health Worker delivered care was three times less than when services were delivered through facilities (0.60 USD and 1.70 USD respectively). From a beneficiary perspective, treatment by Community Health Workers is three times lower than facility-based treatment.



PAKISTAN

The main differential in costs was a result of the training of Lady Health Workers in the treatment of SAM. The cost per child and the recovery rate in the control and intervention sectors were similar, suggesting little difference between the two treatment models in terms of cost effectiveness.



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LEARNED

This was ultimately an experimental project, founded on the belief that changing the way SAM is urgently needed and Community Health Workers have the potential to make treatment more accessible to those who need it.
So what did we learn?



COMMUNITY HEALTH WORKERS CAN SUCCESSFULLY TREAT SEVERE ACUTE MALNUTRITION

Whilst having to contend with prevailing operational challenges and limitations, the results from Mali and Pakistan demonstrate that well trained, supervised and motivated Community Health Workers can successfully treat SAM and overcome many of the barriers facing the services managed by health facilities.

COVERAGE

The coverage of SAM treatment can be doubled if delivered through Community Health Workers. The project also showed that to make the most out of this opportunity, it is essential to ensure that Community Health Workers are motivated, adequately stocked and in communication with other parts of the health services.

EFFECTIVENESS OF TREATMENT

Community Health Workers can ensure that the majority of children treated successfully recover. In addition, the delivery of treatment through Community Health Workers can reduce the rate of defaulting, one of the key challenges faced by SAM treatment worldwide.

QUALITY OF CARE

Through proper training & management, Community Health Workers have the potential to provide high quality of care to children suffering from SAM. But to do so, adequate training and on-the-job support are essential.

COST EFFECTIVENESS

Community Health Workers can significantly improve coverage and, in doing so, can have a direct and positive impact on the cost-effectiveness of SAM treatment.

TRAINING AND SUPERVISION ARE ESSENTIAL

The successful training and supervision of Community Health Workers (Mali) and Lady Health Workers (Pakistan) were essential elements of the project. Training and supervision was conducted in slightly different manners between the two case sites. Whilst Mali Community Health Workers received a 15 day course on ICCM protocols, Pakistan Lady Health Workers received a 2 day training on Community-based Management of Acute Malnutrition & Young Child Feeding Practices. The quality of care analysis from Pakistan showed that a high quality of care was not provided by all Lady Health Workers consistently. Lady Health Workers were least competent at weight and MUAC⁶ assessment with 60.0% and 57.4% of cases measuring these components, conversely, the quality of care in Mali was consistently higher. This corroborates previous evidence suggesting that adequate training and on-the-job support are critical to ensuring acceptable levels of quality in the delivery of SAM treatment and other services.

COMMUNITY HEALTH WORKER MOTIVATION AND REWARDS CANNOT BE IGNORED

Comparing the two case sites, Community Health Workers in Mali were paid a monthly stipend for SAM treatment, whereas Lady Health Workers in Pakistan did not receive any monetary incentive. This lack of incentive may have led to the decreased motivation of Lady Health Workers to actively identify and manage SAM cases.

THE WAY FORWARD

The success of the project in Mali led to a review of the Primary Health Care Guidelines of Mali, and introduced SAM treatment into the formal package of actions to be delivered by Community Health Workers. This achievement of policy change within the limited time frame of the project exceeded all original expectations.

Before the services can be scaled-up in Mali and beyond, some key questions remain:

PERFORMANCE AT SCALE

The Mali study was deliberately designed to operate at a small enough scale to run controlled operational research. Will the positive results from Mali be achievable on a larger scale with virtually no oversight by external bodies?

IMPACT ON OTHER SERVICES

The time-use analysis from Mali showed that Community Health Workers were required to allocate a significant proportion of their available time to the treatment of SAM. Will this addition to Community Health Workers workload affect the quality of care for other illnesses like malaria? Does the addition of SAM treatment have a measurable effect on the coverage and effectiveness of treatment for other illnesses?

COST-EFFECTIVENESS

As this model is integrated and streamlined into the health system in Mali, will the cost-effectiveness and comparative gains in coverage be maintained?

GOING GLOBAL

The effort to explore the role of Community Health Workers in the treatment of SAM has gone global. In December 2014, senior members of the integrated Community Case Management (iCCM) community, policy makers, UN agencies, NGOs and donors came together to review the state of evidence and agreed to create a specific Nutrition Sub-group under the global Community Case Management (CCM) Task Force to continue to monitor and encourage progress in integrating nutrition into integrated Community Case Management (iCCM). In 2016, the US Government, as part of its Global Coordination Plan on Nutrition 2016-2020, committed to integrating community-based management of acute malnutrition (CMAM) and iCCM in 15 countries around the world. New operational research projects exploring the effectiveness and cost-effectiveness of SAM treatment when delivered by Community Health Worker as part of integrated Community Case Management (iCCM) are now scheduled to be launched in Kenya and South Sudan.



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AGAINST THE STATUS QUO.**

**FOR CHILDREN THAT GROW UP STRONG,
AGAINST LIVES CUT SHORT.**

**FOR FREEDOM,
FROM HUNGER.**

**FOR EVERYONE.
FOR GOOD.**

**FOR ACTION,
AGAINST HUNGER.**

