Uwimana Sebinwa, Matam, Senegal, 201

Coverage Matters

A collation of content on coverage monitoring of CMAM programmes

June 2014

Emergency Nutrition Network

COVERAGE MONITORING NETWORK

Contents

Acronyms

ACF	Action Contre La Faim/Action Against Hunger
BBQ	Boosters, Barriers, Questions
CCM	Community Case Management
CHW	Community Health Worker
CMAM	Community-based Management of Acute Malnutrition
CMN	Coverage Monitoring Network
CSAS	Centric Systematic Area Sampling
CTC	Community Therapeutic Care
DRC	Democratic Republic of Congo
HEP	Health Extension Programme
IDP	Internally Displaced Person
IMAM	Integrated Management of Acute Malnutrition
LQAS	Lot Quality Assurance Sampling
MoH	Ministry of Health
MUAC	Mid-Upper Arm Circumference
NGO	Non-Governmental Organisation
RUSF	Ready to Use Supplementary Foods
RUTF	Ready-to-Use Therapeutic Food
SAM	Severe Acute Malnutrition
SQUEAC	Semi-Quantitative Evaluation of Access and Coverage
SUN	Scaling Up Nutrition movement
TFC	Therapeutic Feeding Centre
THP	Traditional Health Practitioner

Editorial

Over the last decade, the nutrition landscape has undergone dramatic changes. Achieving high programme coverage was one of the forces behind the shift from centralised treatment, in the form of Therapeutic Feeding Centres (TFCs), to decentralised, community-based programming, namely Community Based Management of Acute Malnutrition (CMAM). Programme coverage is recognised as one of the most useful and reliable indicators for measuring the impact of CMAM programmes. In the latest Lancet Maternal and Child Nutrition Series (2013), coverage was a central topic. Realising good coverage is also part of the strategy of the Scaling Up Nutrition (SUN) movement. The recent development of comprehensive and innovative coverage monitoring tools has provided the means by which to monitor CMAM programme coverage practically and easily.

Coverage assessments have become integral to many CMAM programmes, either as part of a monitoring strategy or as specific activities in the cycle of the project. Reports, publications, peer-review articles, conferences, workshops and trainings centred on coverage measurement now feature heavily in the nutrition sector. The Emergency Nutrition Network (ENN) team has been involved in many of the discussions about how to achieve and measure coverage and over the past couple of years, ENNs publication, Field Exchange, has contained many articles on coverage. To improve accessibility, key articles, published in 2012 and 2013, have been compiled into this special coverage publication, in a collaboration between the ENN and the Coverage Monitoring Network (CMN). The featured articles cover a range of content, from the importance of attaining coverage in measuring the impact of CMAM programmes (page 3) to the need to set up coherent coverage standards (page 5) to passionate but constructive methodological discussions (see section 2 page 14). Many of the methodological innovations described have come about due to limitations of existing coverage tools forcing development adapted to field programmes and easily integrated into regular monitoring activities. Arguably the most interesting results are those coming from field programmes implementing coverage assessments; the last section (page 19) collates examples of lessons learned in Chad, Mali, Mauritania and Pakistan, as well as in urban and insecure contexts.

We recognise that there is still a long way to go in measuring coverage. The need to generate more accurate indirect estimations as part of existing information systems is very well identified, as well as the need to carry out more national coverage surveys. The sector must find ways of incorporating coverage measures into routine nutrition information systems in order to obtain real-time information. More importantly, we have to think beyond the measurement of coverage to designing tools that bring about incremental coverage rates.

While we have a lot more to learn it is also true that we have learned a lot. We hope this coverage publication serves as an accessible reminder of recent experiences and lessons learned and as a practical guide for field practitioners.

Jose Luis Alvarez Moran
CMN Coordinator

This publication has been co-developed by the ENN and the CMN, produced by the ENN, June, 2014.

Coverage Monitoring Network Profile

COVERAGE MONITORING NETWORK

In 2010, a group of nutrition organizations (ACF, Save the Children, Concern Worldwide, International Medical Corps, Helen Keller International and Valid International) came together to create the Coverage Monitoring Network (CMN), aiming to increase the capacity of CMAM programmes to assess their treatment coverage and to understand the main barriers and boosters to access. Coverage was seen as an important measure of accessibility of treatment and, in turn, a reflection of the relationship between a series of key factors and processes including Ready to Use Therapeutic Food (RUTF) supply chain, community engagement and health system strengthening, amongst others.

Since the start of operations in August 2012, the Coverage Monitoring Network (CMN) has supported a total of 105 coverage assessments, working together with 44 implementing organisations (including non-governmental organisations (NGOs), Red Cross societies, United Nations agencies and national and local governments). 82 of the assessments were in the form of direct on-the-job training support and 23 as remote support.

Those 82 coverage assessments were implemented in 25 countries:

- 6 Asian countries (Philippines, Bangladesh, Pakistan, Nepal, Yemen and Afghanistan)
- 6 East African countries (Somalia, Ethiopia, Kenya, Sudan, South Sudan and Rwanda)
- 4 Central African countries (Angola, Democratic Republic of the Congo (DRC), Cameroon and Chad)
- 8 West African countries (Senegal, Ivory Coast, Mauritania, Sierra Leone, Mali, Burkina Faso, Niger and Nigeria)
- 1 Country in the Americas (Haiti)

All reports and data are available on the CMN website: www.coverage-monitoring.org

Four inter-agency field trainings were also carried out in Kenya, Burkina Faso, Nepal and DRC.

One of the stated objectives of the CMN project was to build on this growing evidence, creating spaces in which trends are reviewed, common barriers are identified and assessed, and lessons can be learned, through the implementation of coverage assessments around the world. To do so, however, the project needed to go beyond coverage and explore the factors influencing it. This realisation led the CMN to open learning spaces to review emerging lessons on SAM treatment as a whole. The first of such events took place in London on October 2013, under the title 'What We Know Now: A Decade of Community-based SAM Treatment'. It was followed by regional events in Bangkok (December 2013), Dakar (March 2014) and Nairobi (March 2014).

In its efforts to increase access to technical support, the CMN translated the SQUEAC/SLEAC technical document (originally published by the Food and Nutrition Technical Assistance (FANTA), Valid International, Brixton Health and their partners) into French. In addition, several policy papers were written under the Access for All series:

- Volume one offers a comparative assessment of the performance and effectiveness of the CMAM model
- Volume two looks more closely at the issues affecting the coverage of community-based SAM treatment services and asks, what prevents SAM cases from reaching treatment services.
- Volume three explores possible programmatic and policy changes to make SAM treatment more accessible and asks, what can we learn from other public health interventions about overcoming these barriers.

The CMN is now entering its second phase where it will move from measuring coverage into developing tools to improve coverage. In order to do so, the CMN will be focusing on nine priority countries; (Burkina Faso, Chad, DRC, Ethiopia, Kenya, Mali, Niger, Pakistan and South Sudan) to develop national frameworks on coverage in closer coordination with all partners. Furthermore, to complement the Coverage Advisors who will continue to carry out coverage assessments, Community Mobilisation Advisors will be available to dedicate more time to action plans in coordination with the programmes and will follow up closely the implementation of these activities.

The CMN will therefore continue to support nutrition programmes and the nutrition sector in matters related to coverage.

The Coverage Monitoring Network Team

Coverage Assessment Theory

Why coverage is important:

efficacy, effectiveness, coverage, and the impact of CMAM interventions

By Mark Myatt and Saul Guerrero

Mark Myatt is a consultant epidemiologist. His areas of expertise include surveillance of communicable diseases, epidemiology of communicable diseases, nutritional epidemiology, spatial epidemiology, and survey design. He is currently based in the UK.

Saul Guerrero is Director of Operations at ACF-UK and a founder of the Coverage Monitoring Network. At the time of writing this article, he was Head of Technical Development at ACF-UK. Prior to joining ACF, he worked for Valid International in the research & development of the CTC model. He has supported SAM treatment programmes in over 20 countries.

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Introduction

Community-based Management of Acute Malnutrition (CMAM) has reached a crucial point in its evolution. What began as a pilot study just over a decade ago, is now a cornerstone of nutrition policy in over sixty countries. In 2011, for example, CMAM interventions in these countries treated almost two million severely wasted children. As the scale-up of CMAM services continues, it must provide the level of quality that proved so decisive in CTC/CMAM displacing the previous centres-based inpatient treatment paradigm. How should the quality of CMAM services be defined? The importance of coverage has been highlighted but the rationale behind the importance attributed to coverage is seldom explained. This article describes the importance of coverage and the reasons why it should be used to assess the quality of CMAM services.

Efficacy

The *efficacy* of the CMAM treatment protocol can be defined as how well the CMAM treatment protocol works in ideal and controlled settings. Efficacy is measured by the *cure rate:*

$$\textit{Cure Rate}\ (\%) = \frac{\textit{Number Cured}}{\textit{Number Treated}}\ x\ 100$$

This is usually estimated in a clinical trial or by observing the cure rate in the set of least severe cases admitted to a CMAM programme and following the CMAM treatment protocol precisely.

The cure rate of the CMAM treatment protocol is close to 100% in *uncomplicated incident cases*.

Examples of uncomplicated incident cases are:

- Children with MUAC between 110 mm and 114 mm and without medical complications.
- Children with mild nutritional oedema and without medical complications.

The cure rate associated with the CMAM treatment protocol has changed little since it was first proposed. For example, the *per-protocol* cure rate observed for uncomplicated cases in an early CTC programme in Ethiopia was approximately 94%[1].

[1] The data for this result are taken from Table 3 (page 14) of: Collins S, Community-based therapeutic care. A new paradigm for selective feeding in nutritional crises, HPN, London, Volume 48, November 2004 which shows 440 cases discharged as cured with five deaths in cases admitted without complications or prior hospitalisation. Half of the 49 cases reported as non-recovered after four months in OTP were assumed to be uncomplicated cases. Transfers to hospital or stabilisation centre (93 cases) were classified as complicated cases. This is a per-protocol analysis and excludes defaulters (57 cases). It should be noted that this programme admitted children with MUAC < 110 mm.

Figure 1: Relations between factors influencing coverage and effectiveness

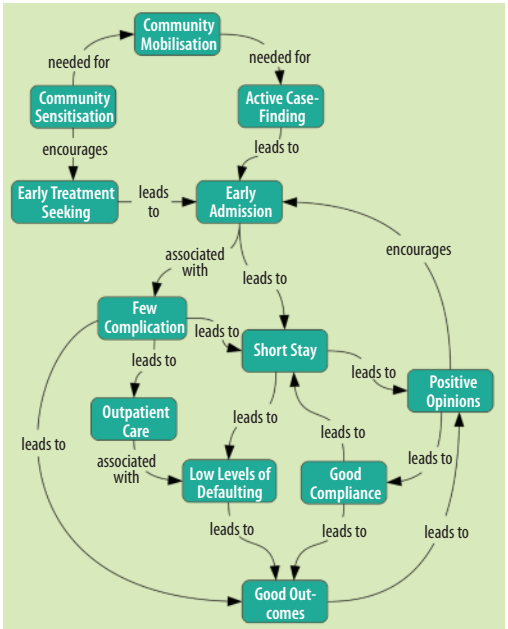
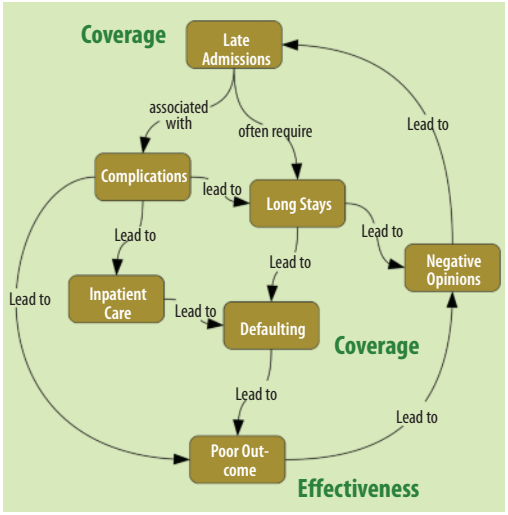


Figure 2: A vicious coverage-effectiveness cycle



Effectiveness

There is little room for large improvements in the efficacy of the CMAM treatment protocol. We cannot significantly change the efficacy of the CMAM treatment protocol but we can change the effectiveness of the CMAM treatment protocol. The *effectiveness* of the CMAM treatment protocol can be defined as the cure rate observed in an entire beneficiary cohort under programme conditions.

Effectiveness depends, to a large extent, on:

Severity of disease: Early treatment seeking and timely case-finding and recruitment of cases will result in a beneficiary cohort in which the majority of cases are uncomplicated incident cases. The cure rate of the CMAM treatment protocol in such a cohort is close to 100%. Late treatment seeking and weak case-finding and recruitment will result in a cohort of more severe and more complicated cases. The cure rate in such a cohort may be much lower than 100%.

Compliance: Programmes in which the beneficiary and the provider adhere strictly to the CMAM treatment protocol have a better cure rate than programmes in which adherence to the CMAM treatment protocol treatment is compromised. Poor compliance can be a problem with the beneficiary (e.g. selling RUTF or sharing RUTF within the household) or a problem with the provider (e.g. RUTF and drug stock-outs) and both have a negative impact on effectiveness.

Defaulting: A defaulter is a beneficiary who was admitted to a programme but who left the programme without being formally discharged. Defaulting early in the treatment episode is the ultimate in poor compliance.

An effective programme must, therefore, have:

Thorough case-finding and early treatment seeking: This ensures that the beneficiary cohort consists mainly of uncomplicated incident cases that can be cured quickly and cheaply using the CMAM treatment protocol.

A high level of compliance by both the beneficiary and the provider: This ensures that the beneficiary receives a treatment of proven efficacy.

Good retention from admission to cure (i.e. little or no defaulting): This also ensures that the beneficiary receives a treatment of proven efficacy.

Impact and coverage

Meeting need (also known as impact) requires both high effectiveness and high coverage:

$$Impact = Effectiveness \times Coverage$$

Coverage can be expressed as:

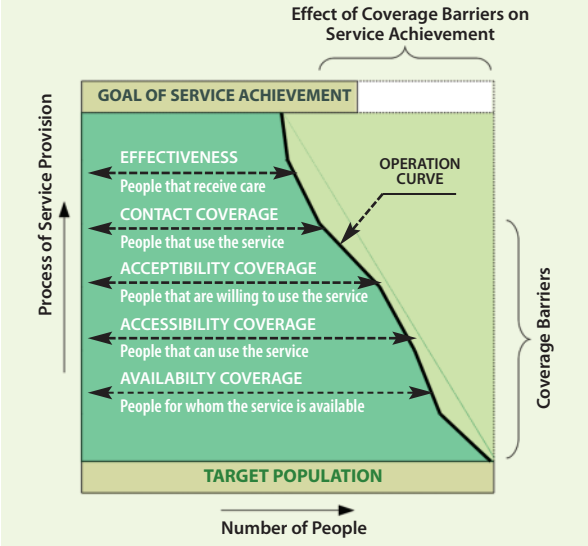
$$Programme\ Coverage\ (\%) = \frac{Number\ in\ the\ programme}{Number\ who\ should\ be\ in\ the\ programme} \times 100$$

Coverage depends directly on:

Thorough case-finding and early treatment seeking: A case that is not admitted into the programme is a non-covered case. Late admissions are coverage failures because they will have been non-covered cases for a considerable period of time before admission.

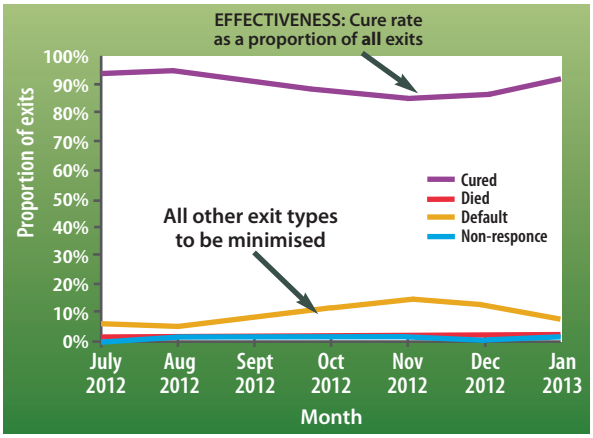
Good retention from admission to cure: This is the absence of defaulting. Defaulters are children that have been admitted to the programme but leave the programme without being formally discharged, without being transferred to another service, or without having died. Defaulters are, therefore, children that should be in the programme but are not in the programme. This means that high defaulting rates are associated with low programme coverage.

Figure 4: Tanahashi coverage diagram illustrating the effect of different types coverage barrier con service achievement/met need/impact



In the Tanahashi model of coverage, impact (SERVICE ACHIEVEMENT) is:
SERVICEACHIEVMENT = CONTACTCOVERAGE X EFFECTIVEENESS

Figure 5: Estimating effectiveness from programme exit data



Effectiveness at end of January 2013 was estimated to be 92%. Coverage at end of January was estimated (using SQUEAC) to be 63%. Impact can be estimated as:

Impact = Effectiveness x Coverage = 92% x 63% = 58%

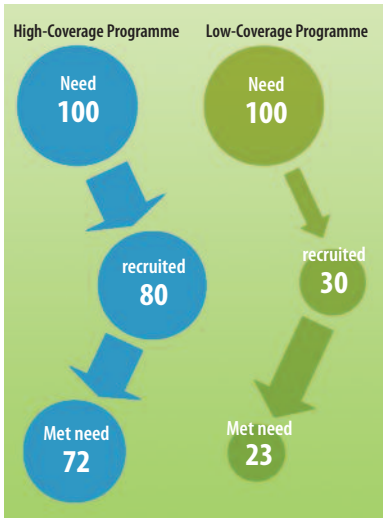
Coverage also depends indirectly on:

Thorough case-finding and early treatment seeking: This ensures that the majority of admissions are uncomplicated incident cases, which leads to good outcomes *(Figure 1)*. Late admission is associated with the need for inpatient care, longer treatment, defaulting, and poor treatment outcomes (e.g. non-response after long stays in programme or death). These can lead to poor opinions of the programme circulating in the host population, which may lead to more late presentations and admissions and a cycle of negative feedback may develop *(Figure 2)*.

A high level of compliance by both the beneficiary and the provider: This ensures that the beneficiary receives a treatment of proven efficacy leading to good outcomes and good opinions of the programme *(Figure 1)*.

Good retention from admission to cure (i.e., little or no defaulting): This also ensures that the beneficiary receives a treatment of proven efficacy leading to good outcomes and good opinions of the programme *(Figure 1)*.

Figure 3: Effect of coverage on met need (impact) in two programmes



Coverage and effectiveness depend on the same things and are linked to each other:

Good coverage supports good effectiveness. Good effectiveness supports good coverage. Maximizing coverage maximises effectiveness and met need.

The implications of:

Impact = Effectiveness x Coverage

are illustrated in *Figure 3* and *Figure 4*. Programmes with low coverage fail to meet need (i.e. have limited impact). Programmes that seek to deliver a high impact can only do so by achieving high levels of coverage.

The key measure of programme quality is impact:

Impact = Effectiveness x Coverage

This means that monitoring and evaluation (M&E) activities in CMAM programmes should concentrate on measuring both effectiveness and coverage. Effectiveness can be measured using a simple *intention to treat* analysis of programme exits *(Figure 5)*. Over the past decade a number of low-resource methods capable of evaluating programme coverage, identifying barriers to service access and uptake, and identifying appropriate actions for improving access and programme coverage have been developed and tested. The Coverage Monitoring Network (CMN) has been established to assist non-governmental organisations (NGOs), United Nations (UN) agencies, and governments use these methods to help maximise the impact of CMAM programmes.

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Considerations regarding coverage standards for selective feeding programmes

By Ernest Guevarra, Saul Guerrero and Mark Myatt

Ernest Guevarra leads Valid International's coverage assessment team. He has formal training as a physician and a public health practitioner and invaluable informal training as a community worker from the communities with whom he has worked. Most recently, he has worked in Sierra Leone, Niger, Sudan, Ethiopia, and Ghana.

Saul Guerrero is Director of Operations at ACF-UK and a founder of the Coverage Monitoring Network. At the time of writing this article, he was Head of Technical Development at ACF-UK. Prior to joining ACF, he worked for Valid International in the research & development of the CTC model. He has supported SAM treatment programmes in over 20 countries.

Mark Myatt is a consultant epidemiologist. His areas of expertise include surveillance of communicable diseases, epidemiology of communicable diseases, nutritional epidemiology, spatial epidemiology, and survey design. He is currently based in the UK.

Originally appeared in Field Exchange, Issue 46, p.19, September 2013

Introduction

The SPHERE set of standards for the coverage of therapeutic feeding programmes are:

Rural settings	> 50%
Urban settings	> 70%
Camp settings	> 90%

We believe that these standards are simplistic:

No methods for estimating coverage are specified. This is important because there are several methods for estimating coverage. Some of these lack precision, tend to produce biased results, or can yield impossible coverage estimates (i.e. coverage above 100%).

No estimator is specified. It is not clear whether the estimator should or should not include cases in treatment who meet neither programme admission nor discharge criteria (i.e. recovering cases). In some programmes this can strongly influence the coverage estimate. A worst case of this potential source of confusion was observed in a community based management of acute malnutrition (CMAM) programme in Bangladesh. In this programme, coverage calculated using only active severe acute malnutrition (SAM) cases *(point coverage)* was 0% and coverage calculated using active and recovering SAM cases *(period coverage)* was almost 90%.

The split into rural, urban, and camp contexts may be too coarse to be meaningful. For example, refugee camps can be very different places from internally displaced persons (IDP) camps in terms of security and access to services. Urban settings are seldom homogenous. Important categories of settlement such as informal peri-urban communities appear to have been overlooked. Peripatetic[1] lifestyles/food economies such as transhumant (seasonal) pastoralism have been overlooked.

The context-specific standards appear to have been established without recourse to evidence. Experiences with Community Therapeutic Care (CTC) and CMAM programmes over more than a decade suggest satisfactory levels of coverage are more difficult to achieve in urban settings than the SPHERE standards suggest. A Coverage Monitoring Network review of coverage assessments from 104 CMAM programmes undertaken between April 2003 and March 2013 found that 40% of rural programmes met or exceeded the 50% coverage standard but that no urban or camp programmes met the appropriate coverage standard. For urban contexts, the standards appear to be ambitious. For rural contexts, the standards appear to be unambitious. This is also an argument for improving the way we do urban programming.

No consideration is given to space. It is unclear whether the standard applies to an overall average or is to be achieved everywhere in the programme area.

No consideration is given to time. No guidance is given as to when coverage should be assessed. This assumes that coverage is 'switched on' rather than achieved through considerable care and effort. It reflects the 'build it and they will come' ethos that has been associated with many recent CMAM coverage failures.

SPHERE simplifies coverage to a single figure. Over a decade of experience with CTC and CMAM programmes shows that coverage is a complicated issue and that considerably more than a single coverage estimate is required to inform and reform programmes to increase coverage, effectiveness, and met need.

In this article, we concentrate on issues of space and time and argue that the SPHERE standards need further definition in order to take these factors into account.

Space

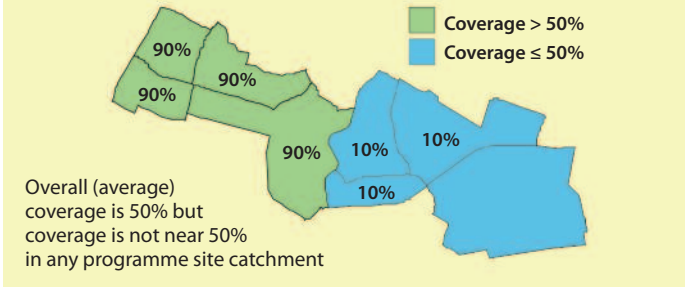
SPHERE standards are unclear as to whether the standard applies to an overall average or is to be achieved everywhere in the programme area. Figure 1 illustrates the problem.

The overall average coverage achieved is 50% but coverage is spatially uneven. It is very high in half of programme site catchment areas and very low in the other half. Nowhere is coverage close to the 50% average. Concentrating on an overall average can lead to poor programme management decisions. In the programme illustrated in Figure 1 we might be tempted to maintain the status quo (i.e. because we appear to have met the coverage standard) rather than focus attention on applying the good practice seen in the successful programme sites to the failing programme sites.

Figure 1 is an extreme example specifically created to illustrate a point but coverage in failing programmes is often very patchy. Figure 2, for example, shows coverage found by a Centric Systematic Area Sampling (CSAS) survey in a CMAM programme in Niger. The average overall coverage in this programme was estimated to be about 18%. Coverage estimates for the separate grid squares ranged from between zero and 80%. Coverage was patchy. A programme in which the overall average coverage is 18% but is not patchy and a programme in which the overall average coverage is 18% and is patchy are both failing programmes, but will probably require very different changes in order to improve coverage. Effective monitoring and evaluation of CMAM programmes therefore requires that overall average coverage results be accompanied by an indication of the patchiness of coverage.

Concentrating on an overall coverage estimate can lead to us making poor programme decisions that allow a situation of poor equity of treatment to evolve or be maintained. Rights-based standards

Figure 1: Average or everywhere?



such as SPHERE should not allow this to happen. This means that we should be applying the standard in the sense of it being met everywhere rather than being met as an overall average. One practical implication of this approach is the need for coverage assessment methods that can reveal spatial variation in coverage. Appropriate methods (e.g. SQUEAC, SLEAC, CSAS, and S3M)[2] are available. These methods provide mapping of coverage as well as information on coverage bottlenecks needed to inform programme reforms.

Time

The SPHERE standards have no temporal component. There is no specification of how long it should take for the standard to be achieved. They read as if coverage is something that can be 'switched on' when, in reality, coverage is something that takes time and effort to achieve.

Figure 3 shows a simple model of how coverage changes over time. If no very poor programme design decisions have been made and proper attention has been paid to community sensitisation and mobilisation, then coverage will increase rapidly until the standard is met or exceeded. The key question is:

> *How long do we allow before the coverage standard should be met or exceeded?*

This is not a simple question. The answer will vary by context. A simple example of contrasting contexts is emergency vs. development settings. In an emergency setting we would want a very short attack phase, measured in days or weeks, and resources will usually be available to achieve this. In a development setting we often find ourselves working in poorly functioning health systems operating with severely constrained resources. In such settings we accept, or are forced to accept, a longer attack phase measured in months or years. The question is also complicated by spatial issues such as the spatial distribution of the population, health facilities, and the prevalence and incidence of acute malnutrition. The utilitarian principal of providing the greatest good for the greatest number will usually apply. This means that we will make an effort to triage communities into those that most require the intervention (high need), those that least require the intervention (low need), and those in between (moderate need). We would then allow different durations of attack phase for each group. For example:

Need category	Acceptable duration of the attack phase	
High	Short	3 – 6 months
Moderate	Moderate	1 – 2 years
Low	Long	2 – 5 years

[1] Those who travel from place to place, especially based in places for relatively short periods of time, e.g. nomadic pastoralism, nomadic hunter-gathering, itinerant craftspeople/traders/workers, show people, gypsies, tinkers, travellers, squatters

[2] SQUEAC: Semi-Quantitative Evaluation of Access and Coverage; SLEAC: Simplified LQAS Evaluation of Access and Coverage; S3M: Simple Spatial Survey Method. See overview at http://www.brixtonhealth.com/updateRAM02.pdf

An issue arising from this rational approach to programming (i.e. the most effort for the most cases) is that current mainstream tools for assessing the prevalence of acute malnutrition (e.g. SMART) are capable of presenting only wide area averages with estimators that are incapable of providing usefully precise estimates of SAM prevalence with sample sizes that can be collected at reasonable cost. We urgently need prevalence assessment methods that can reveal spatial variation in the prevalence of moderate acute malnutrition (MAM) and SAM. Methods to do this are currently under development by UNICEF, VALID International, GAIN, and Brixton Health.

The audit cycle: A framework for monitoring and evaluating coverage

In development settings, when we may achieve standards after a long effort, we need a framework that allows us to monitor whether we are on track for meeting standards and what, if any, programme changes are needed. For this we propose an audit cycle (Figure 4).

The audit cycle aims to provide continual and incremental improvements to practice. This means that the standard should be increased once the previous standard has been met. The aim of audit is to approach best practice over a number of audit cycles. Once best practice has been achieved (e.g. in CMAM programmes in rural settings this means coverage levels of 80% or higher), the audit process continues in order to confirm that best practice is being sustained.

Standards in the audit cycle are interim targets. This means that it is legitimate to set an early standard that is below the SPHERE standard because it is a milestone on the path to meeting the SPHERE standard. The SPHERE standard should also be seen as just a milestone on the path to best practice.

Box 1 illustrates the use of the audit cycle as a framework for coverage monitoring.

Conclusion

Standards such as those proposed by SPHERE are not without value. There is room for improvement. There is need for well-defined and nuanced standards. In this article we have proposed:

- Coverage standards be applied everywhere rather than as an overall average that might not apply anywhere.
- Coverage standards include context specific time elements which may be influenced by spatial factors.
- Coverage standards should be part of a monitoring and evaluation framework designed to provide continuous and incremental improvements to programming. We propose the audit cycle for this.

These proposed changes to the current SPHERE coverage standards require assessment tools that can map need and coverage. They also require organisations that have the skills and the will to apply these tools and move the coverage monitoring agenda forward. We already have tools (i.e. SQUEAC, SLEAC, CSAS, S3M surveys and the audit cycle) and organisations (e.g. The Coverage Monitoring Network) to facilitate some of these proposals. Further work is required on developing tools that can map need.

For more information, contact: Saul Guerrero,
email: s.guerrero@actionagainsthunger.org.uk

Figure 3: A simple model of how coverage changes over time

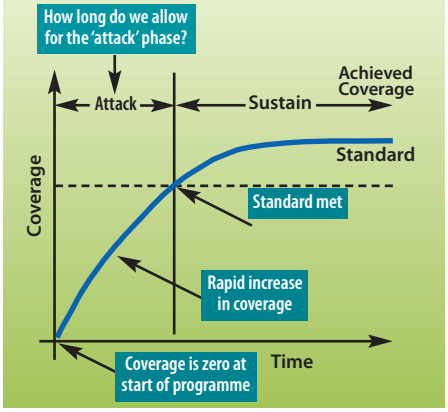


Figure 4: The audit cycle for monitoring and evaluation

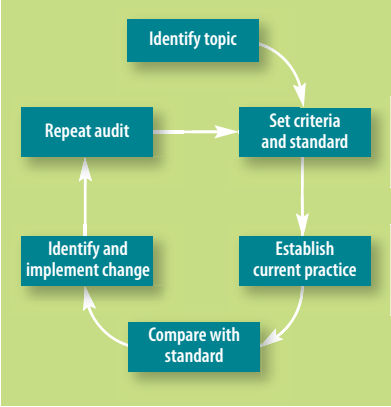
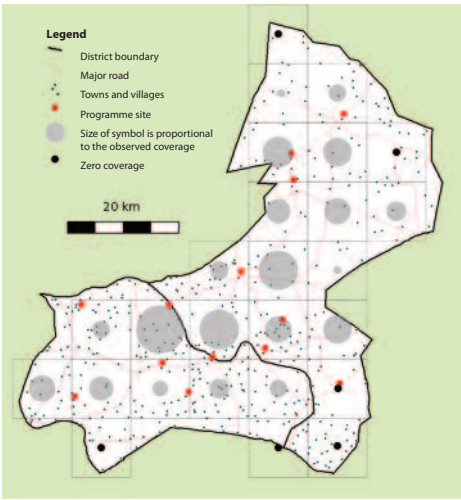


Figure 2: Coverage found by CSAS survey in a CMAM programme in Niger

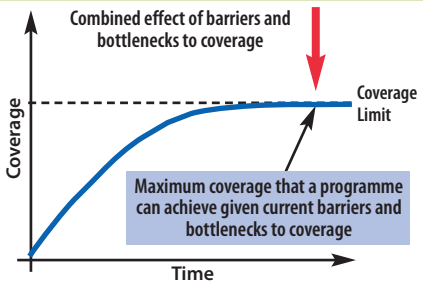


Data courtesy of Save the Children (UK)

Box 1: Coverage, coverage limits, and audit

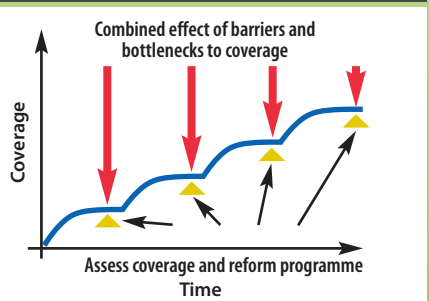
The pattern of coverage presented in Figure 3 may be interpreted as coverage increasing until it meets a limit that is imposed by the barriers and bottlenecks that act to limit coverage (Figure 5).

Figure 5: Coverage over time limited by barriers and bottlenecks



The process of audit using a coverage assessment technique such as SQUEAC aims to discover and address barriers and bottlenecks in order to improve coverage. The process is ongoing (either periodic, continuous, or a mixture of both) so that progress can be monitored and new barriers and bottlenecks (e.g. due to seasonality or unintended consequences of reform) identified and addressed. Coverage under audit will usually follow a bumpy trajectory (Figure 6).

Figure 6: The pattern coverage over time in a programme under audit



It is important that audit continues after high coverage is achieved in order to confirm that good practice is being sustained and to identify and address new barriers and bottlenecks.

Quantity through quality:

scaling up CMAM by improving programme access

By Saul Guerrero and Maureen Gallagher

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Background

ACF International's strategy for scaling up nutrition programming is underpinned by one simple idea: we are not reaching enough of the affected population. According to the 2008 Lancet series, only between 5%[1]-10%[2] of children suffering from acute malnutrition are receiving nutritional care. To deal with this, ACF International has committed to a gradual process of scaling up interventions to reach an estimated 500,000 children per annum by the year 2015. In 2010, the organisation reached just under 225,000 children through its programmes. To meet its objectives, the organisation must effectively double its current caseload. To achieve this, ACF has placed considerable emphasis on securing the necessary political will and civil society participation at national and international level to enable growth and expansion of services[3]. Internally, it has also placed great emphasis on partnerships and capacity building as a means of enabling programmes to expand and reach new geographical areas.

All in all, this represents an outward vision of growth, an approach that favours expansion over consolidation; the replication of existing approaches on the assumption that more of the same will deliver results. The implicit confidence in the performance of existing programmes is undoubtedly linked to the great strides made over the last decade with the decentralisation of care. By shifting from Therapeutic Feeding Centres (TFC) to CMAM, the organisation has laid the foundation for a significant increase in programme uptake. Yet, like many nutrition organisations around the world, ACF is gradually coming to the realisation that the shift in treatment approaches is no guarantee for success. There is now an increasing body of evidence showing that offering services, even closer to the communities, is not tantamount to improving access. Whilst the efficacy of the CMAM model and protocol is now firmly established, its effectiveness is still dependent on the quality of programme implementation by (or with the support of) non-governmental organisations (NGOs), as often Ministries of Health (MoH) have limited resources for nutritional activities.

Scaling up must therefore start by consolidating our work, by finding ways of reaching those that we are consistently excluding.

A child being assessed (appetite test) at a health facility offering treatment in Monrovia, Liberia

Ben Allen, Liberia, 2011

The potential benefits of consolidating our work, or shifting to an inward approach for scaling up, has been conclusively established. If we were to increase our current coverage by 30%, we would not only meet international minimum standards, but we could reach our target of 500,000 children per year without opening a single additional programme. We do not yet have a generic recipe for effective CMAM programming, what we do have is sufficient evidence to start developing a new approach that focuses more closely on en-

[1] Horton et al (2010). Scaling Up Nutrition: What Will It Cost? (World Bank, Directions in Development/Human Development, 2010, p.19). This is based on the estimations of the authors that only 1 million of the total 19 million children suffering from SAM (c. 5%) are receiving treatment.

[2] Based on UNICEF's more recent estimations (PD-Nutrition Section E-Bulletin, Issue 1, October 2012, p.2) the actual number of children receiving treatment is closer to 1,961,772 which suggest that the proportion of cases receiving treatment could be closer to 10%.

[3] ACF International, (2010). ACF International Strategy 2010-2015

suring programme effectiveness. The aim of this paper is to use some of the available evidence to propose a clear and specific definition of effective CMAM programming. But it also seeks to go further. By reviewing results of current trends in programming, it sets out to identify key steps for consolidating ACF's existing programmes, and to outline the programmatic and organisational transformations that these would have for ACF.

What's in a number? Defining quality in nutrition programmes

The aim of public health nutrition interventions, such as CMAM, is to meet the needs of the largest possible proportion of an affected population[4]. There are two sides to the question of needs met. On the one hand, there is the quality of care or efficacy of treatment. This is generally assessed through standard nutrition indicators including cure, death, defaulter and non-responder rates. Although these indicators vary from context to context and according to a number of factors (including severity at presentation, level of compliance, implementation approach, etc), there is now ample evidence to support the idea that the efficacy of CMAM treatment protocols is close to 100%[5] in a controlled environment. These efficacy indicators, however, give us only a partial view of the impact of the programme on the children reached. The other part of the needs met equation, the one often missing in our analysis, concerns the number of affected cases that programmes do not reach. The quality of nutrition programmes must be determined by a combination of the treatment efficacy outcomes vis-a-vis the proportion of the affected population being reached (coverage).

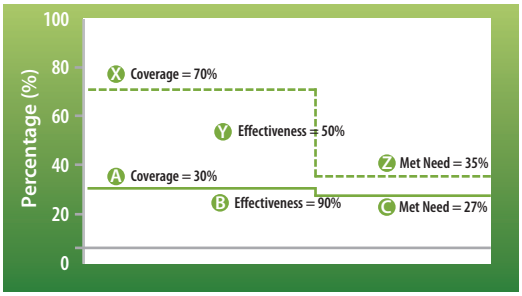
Coverage has been an integral component of humanitarian evaluative frameworks, with both OECD-DAC and ALNAP[6] recommending that humanitarian agencies "*…present an estimate of the proportion of those in need covered, expressed as a percentage, rather than an absolute number*". The importance consistently attributed to coverage is exemplified in Figure 1. When programmes with coverage of 30% (A) successfully cure a high rate of children (B), the proportion of needs met is still low (C). When programmes with high coverage (X) cure only half of the admitted cases (Y) the proportion of needs met is higher (Z).

Since they first appeared in 2004[8], the SPHERE Standards have included specific coverage indicators for nutrition interventions in rural (50%), urban (70%) and camp environments (90%). The timing of the introduction of these new standards was important. Prior to the introduction of the Community Therapeutic Care (CTC) model in the late 1990s, inpatient programmes rarely reached over 25% of the affected population[9]. But by 2001, as CTC (and its successor, CMAM) became more common, NGOs consistently showed that it was possible for programmes to reach up to 70% coverage. This was taken as a sign of the intrinsic quality of the approach, rather than as a partial reflection of the active and direct involvement of NGOs in its implementation.

Great expectations: ACF programme coverage performance against international standards

ACF has a strong history in supporting coverage estimations (see Box 1). Between February 2010 and February 2012, ACF carried out 15 coverage surveys in 11 different countries, with more planned for the short and mid-term future. Whilst the contexts have varied significantly, regular coverage surveillance has provided us with two valuable areas of information: coverage diagnosis and programme diag-

Figure 1: Coverage vs. effectiveness in nutrition programmes



Box 1: A little history of ACF and coverage estimation

The introduction of international coverage standards for nutrition programmes raised the need for a reliable means by which to measure coverage. Indirect methods, using population estimates and prevalence were unreliable, and a more direct method was needed. Since direct means for measuring programme coverage were first developed by Valid International and their partners in the early 2000s, ACF has increasingly supported their testing, development and introduction into regular programming. The first method, the Centric Systematic Area Sampling (CSAS) approach was first used by ACF in 2007 to determine programme coverage[11] in Burundi, Uganda, and Sudan. In 2008, ACF became one of the first organisations to support Valid International in piloting the Semi-Quantitative Evaluation of Access & Coverage (SQUEAC) method, designed to make coverage surveillance easier, faster and less-resource intensive. Since 2010, the use of the new SQUEAC methodology has enabled the organisation to systematically monitor and diagnose programme coverage.

A community volunteer screens children in the community in Yobe State, Nigeria

Saul Guerrero, Nigeria, 2011

Table 2: Coverage of ACF-supported nutrition programmes (2010-2012)

Country	Location	Date	Coverage
Burkina Faso	Tapoa	Feb 2010	21.8%
Chad	Kanem	Dec 2010	27.1%
Burkina Faso	Tapoa	Mar - Apr 2011	17.6%
Mauritania	Guuidimaka	Mar - Apr 2011	33.0%
Liberia	Monrovia	Feb - Apr 2011	24.8%
Mali	Gao	Jul 2011	35.4%
Nigeria	Yobe	Aug 2011	33%
Chad	Kanem	Sep 2011	36.4%
Chad	Bahr el Ghazal	Oct 2011	34.1%
South Sudan	Gogrial West	Oct 2011	44.7%
South Sudan	Aweil East	Nov 2011	45.5%
South Sudan	Twic	Dec 2011	27.3%
Myanmar	Maungdauw	Nov - Dec 2011	40.7%
Haiti	Haut Artibonite	January 2012	12.4%
Sierra Leone	Moyamba	February 2012	12.1%

[4] Needs based on SAM caseload as defined by National Nutrition Protocols

[5] In controlled settings, in uncomplicated incident cases with MUAC at or just below admission criteria/mild oedema.

[6] ALNAP (2006) Evaluating humanitarian action using OECD-DAC criteria: an ALNAP guide for humanitarian agencies (Over-seas Development Institute, London, March 2006, p. 38-39)

[7] Adapted from Sadler, K, Myatt, M, Feleke, T and Collins, S (2007). A comparison of the programme coverage of two therapeutic feeding interventions implemented in neighbouring districts of Malawi (Public Health Nutrition, April 2007, 10(9), p.912)

[8] The SPHERE Project (2004). Humanitarian Charter and Minimum Standards in Disaster Response (First Edition, 2004, London, p.39)

[9] Vautier, F (1998). Selective Feeding Programmes in Wadjir: Some Reasons for Low Coverage and High Defaulter Rate (Field Exchange, Emergency Nutrition Network, Issue 5, p.17). Coverage calculated indirectly (using prevalence data against population estimates).

nosis. Together, these two areas of information provide clear ideas of where the problems and the solutions lie, offering practical recommendations for improving/ ensuring the quality of programmes.

Based on the coverage monitoring data collected since 2007 (Table 2), on average ACF programmes achieve coverage of around 30% of the total affected (SAM) population[10]; for every three acutely malnourished children in our areas of operation, only one receives treatment through our programmes. None of the programmes surveyed so far has met the SPHERE minimum standards (>50% for rural areas, >70% for urban areas, >90% for camps). The comparison against SPHERE standards may only be relevant to some of these programmes which were implemented (directly by ACF) under emergency conditions. The remainder of these programmes have been implemented in partnership with (i.e. indirectly through) national MoH. The SPHERE standards represent a set of benchmarks that have proven difficult to attain by integrated programmes led by MoH. This has resulted in the commonly held belief that integrated CMAM programmes run by MoH are intrinsically limited by infrastructure and resources, and are thus naturally unable to meet previous CMAM outcomes and standards. Whilst integrated CMAM programmes are different, focusing on the need for new standards for integrated programmes (or provision of external inputs to support achieving standards) represents an easy way out. What this argument effectively does is remove the pressure from NGOs to understand the factors affecting the performance of integrated CMAM programmes. This in turn often leads to the creation of artificial programme conditions – including additional staff, financial incentives and supply systems – that help boost performance, but does little to strengthen local health systems.

The challenges faced by integrated CMAM programmes are very real: beneficiary populations, for instance, have a pre-conceived idea of what health facilities can and cannot offer, about the kind of (staff-patient) treatment they are likely to receive there, including official and/or unofficial costs of treatment. The location (often limited and sparse) of health facilities in a given area means that reaching those in need is generally determined by the proximity offered by the MoH infrastructure chosen as service delivery units for CMAM services. In addition, the resources (human and financial) available to MoH to carry out the supporting functions needed by any successful nutrition programme are very often not there. ACF has sought to address this, but the coverage performance of these programmes suggests that the current allocation of technical support and resources to support integrated programmes is based less on needs and gaps of health systems and more on the traditional organisational clinical expertise and focus on treatment efficacy. Meeting a higher proportion of the needs, and reaching the expected 500,000 SAM children a year, will require that ACF looks beyond clinical outcomes and addresses key factors for achieving high quality programmes.

Key factors for achieving high quality nutrition programmes

Part of the answer to the question of where support is needed to improve the quality and performance of our programmes is provided by the coverage assessments themselves. In 2007, the ACF Uganda nutrition team set out to prove that programme coverage could be increased through the strengthening of community mobilisation activities, including sensitisation, case-finding and follow-up. The programme succeeded in increasing coverage by more than 12% in 12 months[12]. More recently, in December 2010, a coverage assessment carried out in Kanem (Chad) once again highlighted the need for improved community engagement. By taking on board the recommendations from this assessment, the programme was able to increase its coverage by over 9% in 10 months. Together, these two experiences prove that within a relatively short period, programmes can positively influence their coverage by addressing some of the bottlenecks[13] affecting access and that community mobilisation can play a pivotal role in achieving this.

Since then, our understanding of the factors affecting programme performance has increased through available data from within and without the organisation. A review of 12 CMAM programmes published in 2010 concluded that programme coverage was directly affected by 1) the degree of rejection amongst referred children, 2) the level of awareness (about the condition and serv-

Table 3: Top reasons for non-attendance (by country)

ACF-supported CMAM Programmes			Reasons for non-attendance								
			Awareness about the programme	Awareness about malnutrition	Distance	SFP-OTP Interface	Rejection	Carer Busy	Waiting Times at OTP	RUTF Stock-Outs	Husband's Refusal
Burkina Faso	Tapoa	Feb 2010									
Chad	Kanem	Dec 2010									
Burkina Faso	Tapoa	Mar - Apr 2011									
Mauritania	Guuidimaka	Mar - Apr 2011									
Liberia	Greater Monrovia	Feb - Apr 2011									
Mali	Gao	Jul 2011									
Nigeria	Yobe	Aug 2011									
Chad	Kanem	Sep 2011									
Chad	Bahr el Ghazal	Oct 2011									
South Sudan	Gogrial West	Oct 2011									
South Sudan	Aweil East	Nov 2011									
South Sudan	Twic	Dec 2011									
Myanmar	Maungdauw	Nov - Dec 2011									
Haiti	Haut Artibonite	Jan 2012									
Sierra Leone	Moyamba	Feb 2012									

[10] All figures refer to point coverage.
[11] As defined by National Nutrition Protocols and corresponding admission criteria.
[12] Doledec, David (2008). Impact of community mobilisation activities in Uganda (Field Exchange, Emergency Nutrition Network, Issue 34, October 2008, p. 15)
[13] Not all bottlenecks can be addressed rapidly or through community mobilisation. For a more detailed discussion, see Tanahashi, T (1978). Health service coverage and its evaluation (Bulletin of the World Health Organisation, 56 (2):295-303.
[14] Guerrero, S et.al (2010). Determinants of coverage in Community-based Therapeutic Care programmes: towards a joint quantitative and qualitative analysis (Disasters, Overseas Development Institute, April 2010, 34(2); 571-585)


Saul Guerrero, Ethiopia, 2008

Health Centre, Ethiopia

ices) amongst the population, and 3) the distance between targeted communities and service delivery points[14]. The recognition and incorporation of mid upper arm circumference (MUAC) as part of national nutrition protocols for admission in many countries has significantly reduced rejections in programmes[15]. The other factors, however, continue to negatively impact programme performance. A pilot study carried out in 23 health centres by Concern Worldwide in Ethiopia identified lack of awareness about the programme as the single most important barrier affecting the performance of the integrated CMAM programme, preventing any of the facilities evaluated from reaching more than 50% of the affected population[16].

ACF's recent surge in coverage surveillance has created a body of evidence that corroborates these conclusions (see Table 3). In all coverage surveys carried out by ACF since February 2010, awareness about programme and/or malnutrition has been identified as the primary reason(s) for non-attendance. Simply put, the large majority of people in the communities where ACF works remain unaware of the existence of CMAM services, or do not perceive it as the solution to the condition affecting their children. The evidence suggests that the current approach to implementing and supporting integrated-CMAM programmes is inappropriate to deliver the promise of greater access that the CMAM model was built on. As the CMAM approach continues to be scaled-up and rolled out, it is more pressing than ever to revisit and review the current model involving health systems, communities and nutrition organisations. This does not mean starting from scratch; the wider public health sector has been tackling these issues for years, gathering valuable lessons and experiences that can be brought into the fold.

Rethinking the CMAM service delivery model and the role of nutrition organisations

The role of humanitarian agencies has shifted significantly since the direct interventions of the 1970s and 1980s. Organisations involved in public health programmes have gradually scaled up by working in partnership with local authorities. For nutrition organisations like ACF, this has represented a shift from direct implementation to "focusing on strengthening health systems' own capacities to treat severe acute malnutrition"[17]. The health system strengthening approach – with nutrition as an entry point – often varies between nutrition organisations as well as between ACF missions[18]. Generally speaking, however, there are some fundamental areas for support:

- Supporting the coordination & creation (or review) of technical frameworks including national nutrition policy, protocols, guidelines, and training manuals, as members of National Technical Working Groups.
- Supporting strengthening capacity efforts (i.e. training, coaching, in some cases additional human resources (HR)) for staff involved in the management and implementation of CMAM activities, including national/regional/local managers, health facility staff and outreach workers.
- Strengthening/supporting supply chain management, including systems for forecasting, requesting and distributing essential drugs and/or ready to use therapeutic food (RUTF).

Though these areas remain key to supporting the integration of CMAM into national health systems, the performance of integrated-CMAM programmes continues to falter. Addressing this requires a rethink of the present and future of the CMAM service delivery as part of the health system and the role of nutrition organisations like ACF in this process.

Consolidating experiences in health system strengthening

What is ACF's CMAM health systems' strengthening approach? With so many varying integration definitions and approaches between ACF missions, ACF is in the process of defining a clear position and model on the key factors that ensure ownership, performance and sustainability of integration of CMAM into routine health services. As health systems vary from country to country, one model cannot fit all, and it becomes important to learn from our existing experiences to see where we are, and to define a CMAM institutionalisation framework that is adaptable and replicable within different health systems. The emphasis of such a framework should consider all key elements for successful treatment yet maintain the existing health system as central to decision making.

Since 2009, a CMAM Integration Guide has been under development by ACF. The success of such a guide rests on its ability to capture experiences from across a wide range of contexts, and in particular, on its capacity to identify successful approaches and provide practical guidance in some key areas, including:

1) **Operational Planning** (e.g. what is the case load? How is it managed? How many days of treatment are provided and why? What incentive systems are in place and why?)
2) **Human Resources** (e.g. who is managing treatment? How are health workers involved in treatment? Are additional staff supported? How? Why?)
3) **Logistics** (e.g. who does the supply management? What is the medicine provision system?)
4) **Training** (e.g. what is the training approach? Who conducts training? How is training impact measured?)
5) **Monitoring & Evaluation (M&E)** (e.g. who does data collection and how? What is the health system personnel involvement and understanding of M&E?)

[15] In countries where MUAC has not been incorporated as an admission criterion, such as Burkina Faso, rejection continues to be an important barrier to access.
[16] Schofield, L et.al (2010) SQUEAC in routine monitoring of CMAM programme coverage in Ethiopia (Field Exchange, Emergency Nutrition Network, April 2010, 38: p. 35)
[17] ACF West Africa Strategy, 2011-2015, p.6.
[18] CMAM Integration Guide draft, Feb 2011
[19] WHO (2010). Monitoring the Building Blocks of Health Systems: A Handbook of Indicators and their Measurement Strategies.

In collecting such information in a systematic manner, ACF can consolidate experiences, identify areas for further research/analysis, and develop an operational framework/key principles for integration including timeframes and exit strategies. In this process, factors will be addressed through the health system strengthening lens, in exploring how different components fit into the six health system strengthening blocks – service delivery, supply, health workforce, financing, health information systems, leadership & governance[19]. This framework will provide a clear position and strengthen the capacity of ACF in the shift from direct implementer to advisor on health systems' strengthening. This requires looking at nutrition as a specific treatment in a larger public health setting.

Revising and prioritising community mobilisation

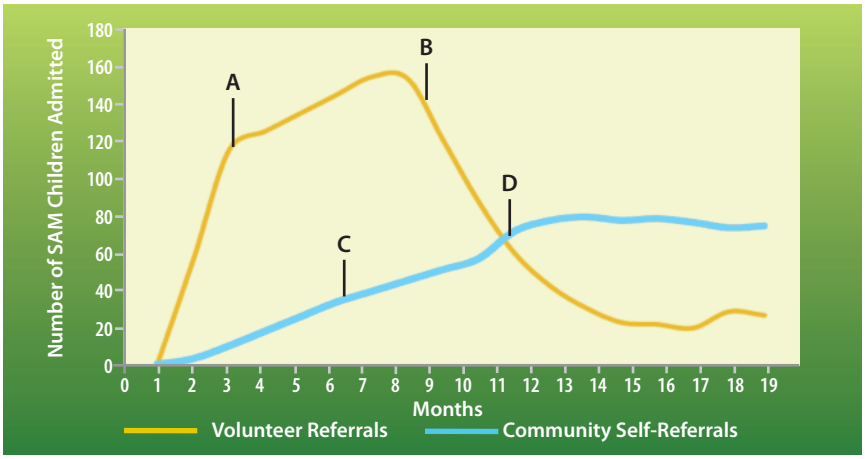
Raising awareness, sensitisation and social marketing have long been recognised as key components of successful public health interventions. The challenge for programmes operating through health structures is the limited or complete absence of financial resources allocated by most MoH to sensitisation and/or outreach activities. As a result, nutrition organisations like ACF have sought to replicate the same strategies used in NGO-implemented CMAM programmes, but without the financial compensation given to outreach workers. Instead, integrated CMAM programmes increasingly rely on existing community volunteers (generally linked to MoH) to deliver community mobilisation activities. Whilst this avoids creating parallel (and unsustainable) structures, this approach consistently faces operational challenges that ultimately define the (poor) performance of integrated CMAM programmes.

Improving community mobilisation to foster optimal programme coverage is less about addressing the individual challenges associated with working with volunteers[20], and more about redefining the overall paradigm that places individual community members (volunteers) and sustainability at the heart of a community mobilisation strategy. The current working model behind community mobilisation in integrated CMAM programmes is based on two fundamental assumptions: community volunteers are the primary means by which to identify and refer cases, and the activeness of these volunteers must be maintained without incurring payments which cannot be sustained by the local health systems. The biggest weakness of this model is that it overestimates the importance of individual volunteers and underestimates the importance of collective community involvement. The proportion of admissions in CMAM programmes between those referred by individual volunteers and self-referred by communities themselves is such that a different approach is possible.

Integrated CMAM programmes should aim to create a critical mass capable of triggering a more sustainable dynamic between the community and the services provided (see Figure 2). At the start of CMAM activities, efforts should be placed on large-scale community sensitisation and case-finding. This would lead to volunteers referring the majority of cases at the start (A). After a short period, motivation would naturally decrease leading to a drop in referrals by volunteers (B). In the meantime, the critical mass or momentum created by the rapid and visually clear recovery of SAM children would lead to a gradual increase in self-referrals (C). Over time, the number of cases that seek CMAM services spontaneously would overtake those referred by volunteers (d) and can (assuming no significant barriers to access) lead to a sustainable and comprehensive model for ensuring programme coverage.

Achieving this dynamic would require, first and foremost, a prioritisation of community mobilisation activities as a key feature of the support provided by organisations like ACF. In practical terms, this would have implications for the profile of staff, and resources made available, to integrated CMAM programmes. Nutrition organisations like ACF should support MoH in the design, planning and implementation of sensitisation activities including mass media, traditional communication channels and the use of new technologies. It would also mean the involvement of nutrition organisations in the training and coordination of community outreach activities by volunteers. All efforts to increase community uptake of CMAM services, however, will need to be accompanied by the introduction of a service delivery structure capable of absorbing the increase in caseload, and capable of providing effective and appropriate care (including low waiting times, regular supply

Figure 2: Programme admissions by source



[19] WHO (2010). Monitoring the Building Blocks of Health Systems: A Handbook of Indicators and their Measurement Strategies.

[20] The first challenge relates to volunteer's workload. Because of how important they are, many public health interventions incorporate the same cadre of volunteers into their outreach strategies. The result is an increasingly overburdened work force capable of dedicating increasingly less time to each activity. The second challenge relates to the motivation of volunteers. The issue of motivation is linked to the issue of workloads and the issue of compensation. The tendency has been to motivate volunteers through the ad hoc provision of incentives, ranging from in-kind items (e.g. soap, sugar, t-shirts and bags) to cash payments. Whilst this commonly raises questions about sustainability, the bigger and more relevant issue is whether volunteers should be placed at the heart of community sensitisation and case-finding in the short, medium and long-term


Samuel Hauenstein Swan, Haiti, 2011

Training session with health staff in Port-au-Prince, Haiti

of RUTF, positive staff-beneficiary interface, high cure rates, etc). Experience has shown that it is this third element – capacity to deliver - that often proves problematic, in particular for integrated-CMAM programmes dependent on the availability and quality of existing health human resources and infrastructure.

Exploring alternative models of CMAM service delivery

The current model for integrated-CMAM programmes relies on the utilisation of health facilities for the delivery of treatment services. Based on this model, support organisations like ACF are tasked with identifying facilities capable of mainstreaming CMAM activities as part of their daily and/or weekly activities. The aim is then to introduce health system strengthening initiatives (e.g. staff training) designed to prepare these facilities for the arrival of newly identified SAM cases from the community.

This model represents a limited vision of health systems. Health systems can also include additional tiers such as Community Health Workers (CHWs). For many years, public health interventions tackling TB, HIV/AIDS, Malaria and Family Planning have turned to this tier for the delivery of support and care. Many of the reasons that have led to the decentralisation of care reflect the same challenges currently faced by integrated-CMAM programmes: weak health facilities with limited and overworked staff, high caseloads leading to long-waiting times, stigma associated with the condition and high opportunity-costs linked to attendance.

There is encouraging evidence that community case management (CCM) of acute malnutrition is not only possible, but can effectively deliver high quality results. Existing evidence from Malawi has shown that the outcomes of treatment delivered by CHWs are comparable to treatment delivered at health facility level[21]. Available studies have concluded that "home-based therapy with RUTF administered by village health aides is an effective approach to treating malnutrition during food crises in areas lacking health services".[22] Similar large-scale research also carried out in Malawi[23] concluded that "home-based therapy with RUTF yields acceptable results without requiring medically trained personnel".

In 2011, Save the Children with the support of Tufts University, GAIN and Pepsico, carried out operational research on CCM of SAM in Southern Bangladesh. Unlike previous research, the Save the Children project measured both the efficacy of treatment and the coverage of the intervention. As in Malawi, the project achieved high recovery rates (92%), and low defaulting and mortality rates (7.5% and 0.1% respectively). The coverage of the programme (89%)[24] was found to be one of the highest ever recorded by a CMAM programme. Subsequent research has also shown that the project delivered high quality of care.

The Malawi and Bangladesh experiences show that a CHW-based service delivery model can be effective, but the evidence so far has been largely based in contexts with robust CHW networks or where additional resources have been made available to support these. The existence of a professional cadre of paid CHWs is no guarantee in itself. In 2005, the Ethiopian Government introduced the Health Extension Programme (HEP) designed to bring together all basic maternal and child health interventions, including nutrition. Yet, CMAM programmes have often struggled to incorporate nutrition activities (even case-finding alone) into a workload that initially included 17 different health packages, from HIV/AIDS to control of insects and rodents.

The evidence from Malawi and Bangladesh is promising, and the improved access and proximity offered by this approach could offer a way of decreasing pressure on health facilities (in high prevalence areas in particular), decreasing defaulting and improving programme coverage. More evidence is needed, from larger interventions, over longer periods of time and outside of the controlled environments (where there is large scale resource investment) of the Bangladesh and Malawi experiences. However, the real success of this type of CCM model may ultimately rest on the ability to implement such programmes as part of the much broader process of strengthening health systems and successfully linking CHWs, health facilities and the communities which they serve.

Conclusion

The shift away from centralised, inpatient care towards a community-based model was arguably one of the most important paradigm shifts in the history of public health nutrition. This shift, however, is far from complete; as nutrition interventions enter a new phase characterised by the integration of nutrition services into national health systems, the coverage and impact of these interventions is decreasing. Turning this around is possible, but to do so, nutrition organisations must adapt to the changing demands linked to health system strengthening and the prioritisation of community mobilisation/awareness. The question for organisations like ACF is not how to provide the same support in a different context, but rather, what kind of support does the new context require and how can this be provided. The answers to these questions are likely to fundamentally change nutrition support organisations – from their staff profiles to their strategic objectives – but in doing so it will make organisations better prepared to deal with a rapidly changing sector.

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[21] Amthor R, Cole SM and Manary M (2009). The Use of Home-Based Therapy with Ready-to-Use Therapeutic Food to Treat Malnutrition in a Rural Area during a Food Crisis. J Am Diet Assoc. 2009;109:464-467

[22] Ibid. p. 464

[23] Linneman Z et.al. (2007). A large-scale operational study of home-based therapy with ready-to-use therapeutic food in childhood malnutrition in Malawi. Maternal and Child Nutrition (2007, 3 , pp. 206–215)

[24] Proportion of affected population, based on programme admission criteria, receiving treatment.

Coverage Assessment Methodology

Boosters, Barriers, Questions:

an approach to organising and analysing SQUEAC data

By Andrew Prentice (VALID), Balegamire Safari Joseph (VALID), Esther Ogonda McOyoo (Concern), Faith Manee Nzidka (ACF), Hassan Ali Ahmed (Mercy USA), Jackson N Chege (Islamic Relief), Jacqueline Wairimu Macharia (ACF), Kennedy Otieno Musumba (ACF), Lilian Mwikari Kaindi (ACF), Lioko Kiamba (ACF), Mark Murage Gathii (IMC), Muireann Brennan (CDC), Samuel Kirichu (Concern), Salim Athman Abubakar (IMC), Stephen Musembi Kimanzi (IMC) and Mark Myatt (Brixton Health)

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Box 1: Triangulation by source and method

It is important that the collected qualitative data are validated. In practice, this means that data are collected from as many different sources as possible. Data sources are then cross-checked against each other. If data from one source are confirmed by data from another source, then the data can be considered to be useful. If data from one source is not confirmed by data from other sources then more data should be collected, either from the same sources or from new sources, for confirmation. This process is known as triangulation.

There are two types of triangulation:
Triangulation by source refers to data confirmed by more than one source. It is better to have data confirmed by more than one type of source (e.g. community leaders and clinic staff) rather than just by more than one of the same type of source. Type of source may also be defined by demographic, socio-economic, and spatial attributes of informants. Lay informants such as mothers and fathers are sources of differing gender. Lay informants from different economic strata, different ethnic groups, different religious groups, or widely separated locations are also different types of source.

Triangulation by method refers to data confirmed by more than one method. It is better to have data confirmed by more than one method (e.g. semi-structured interviews and informal group discussions) than by a single method.

You should plan data collection to ensure triangulation by both source and method. The BBQ approach is designed to help you do this.

Data collection using triangulation is a purposeful and intelligent process. Data from different sources and methods should be regularly and frequently compared with each other. Discrepancies in the data are then used to inform decisions about whether to collect further data. If further data collection is required, these discrepancies help determine which data to collect, as well as the sources and methods to be used.

This article outlines an approach to organising and analysing collected data and for planning further data collection during a SQUEAC coverage assessment. The approach, known as 'Boosters, Barriers, Questions (BBQ)' involves examining the collected data for boosters (i.e. anything that might act to support coverage) and barriers (i.e. anything that might act to undermine coverage) – see Figure 1. The approach was developed during a Coverage Monitoring Network (CMN)[1] training on the SQUEAC coverage assessment methodology in Kenya in October and November 2012.

The BBQ approach uses three panes to record (1) boosters, (2) barriers and (3) issues arising that require further data collection (questions). A fourth pane acts as a key to symbols that are used to indicate data sources and data collection methods. Figure 2 shows the parts of the BBQ tools and explains their purpose.

A large hand-drawn BBQ tool, such as is shown in Figure 3, proved useful for managing a SQUEAC investigation. The BBQ tool provides a summary of the current state of the investigation and serves as a focal point when deciding data collection needs and dividing tasks between team members. The collaborative focus provided by the BBQ tool facilitates team building and improves the quality of the investigation.

When using the BBQ tool, each of the listed boosters and barriers is tagged with symbols that indicate the different sources of data supporting each finding (e.g. programme staff, carers of severe acute malnutrition (SAM) cases, community leaders) and the different methods used to collect the data (e.g. structured interviews, semi-structured interviews, informal group discussions). The use of these symbols allows the easy identification of findings that have, or have not, been validated using triangulation by source and method – see Box 1, Box 2, and Figure 4.

Findings associated with different sources and/or methods can be treated as validated. Figure 5, for example, shows a barrier "Mothers go to traditional healers who are not linked to the programme" revealed by in-depth interviews with carers of SAM cases in the programme and several informal group discussions with traditional birth attendants and traditional healers.

Figure 1: The boosters and barriers model of programme coverage

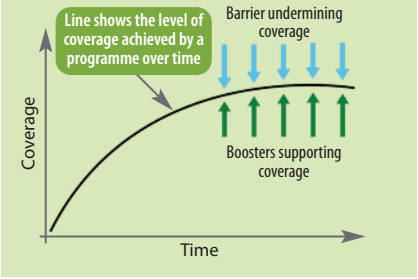


Figure 2: Components of the BBQ tool

Boosters	Questions	Barriers
List boosters to coverage here at the end of each day of data-collection.. Mark each **booster** with symbols that indicate the sources and methods that were used to collect the data. This allows you to check that findings have been validated using triangulation by source and method. Any findings **not** confirmed by triangulation should prompt an entry in the central **Questions** section. This list will tend to grow over time. Periodically check whether findings may be combined and redraft as required.	Use this section to list uestions and issues that need to be resolved by additional data collection. These should include findings that have **not** been confirmed by triangulation Record issue, data source, and method to be used to collect data. This section will require frequent redrafting. **Key/Legend** Use this section to list the symbols used in the **Boosters** and **Barriers** sections to indicate sources and methods.	List barriers to coverage here at the end of each day of data-collection.. Mark each **barrier** with symbols that indicate the sources and methods that were used to collect the data. This allows you to check that findings have been validated using triangulation by source and method. Any findings **not** confirmed by triangulation should prompt an entry in the central **Questions** section. This list will tend to grow over time. Periodically check whether findings may be combined and redraft as required.

Findings associated with few sources of data and/or few methods of data collection are candidates for further investigation. Specific questions for further investigation are listed in the central 'Questions' section of the BBQ tool. Figure 5, for example, shows a potential barrier "Only person who can identify malnutrition is the Community Health Worker" revealed by a single source/method (i.e. informal group discussion with carers of young children in communities) and required, therefore, further investigation by collecting data from different sources and/or similar sources using different methods.

As the investigation proceeds, the BBQ tool is redrafted to (e.g.) combine similar findings and remove invalidated findings. Figure 6 shows the result of redrafting the BBQ tool shown in Figure 3 to combine similar findings. Note how some of the findings related to barriers have been combined using diagrams showing cause and effect linkages between barriers.

Figure 3: A hand-drawn BBQ tool from day four of a SQUEAC investigation

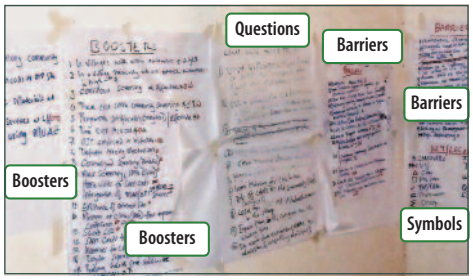
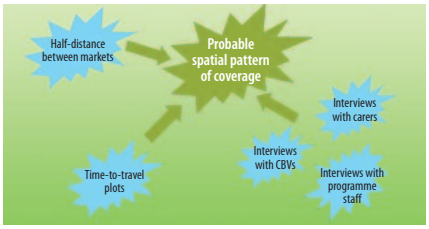


Figure 4: Illustration of how triangulation by source and method may (e.g.) be used to investigate the spatial pattern of coverage



Grouping findings by consequence helps with building concept maps that describe the relationships between boosters and barriers in a programme. For example, a programme's failure to recruit traditional healers as community-based case-finders may lead to late admissions, complicated cases requiring long stays or inpatient care (which may lead to defaulting), poor outcomes and negative opinions of the programme. Figure 7 shows a fragment of a programme concept map illustrating these relationships.

Figure 5: The barriers pane from a SQUEAC investigation

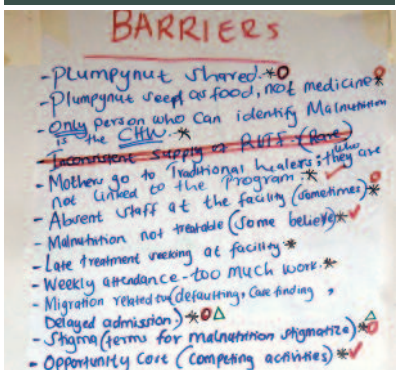


Figure 6: The BBQ tool redrafted to combine similar findings

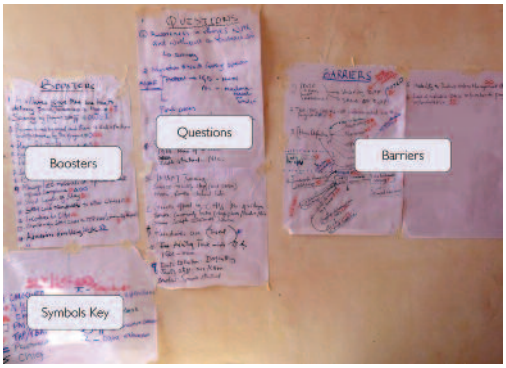
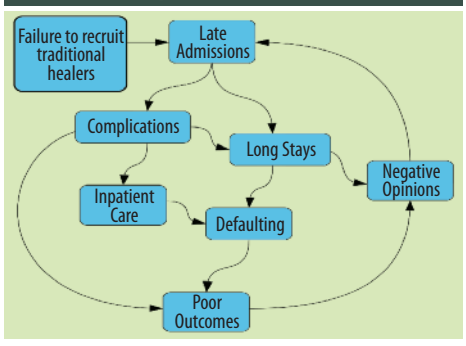


Figure 7: A concept map showing the likely consequence of a single barrier



Note how some of the findings related to barriers have been combined using diagrams showing cause and effect linkages between barriers.

Figure 8: First draft of a programme concept map from day five of the SQUEAC investigation

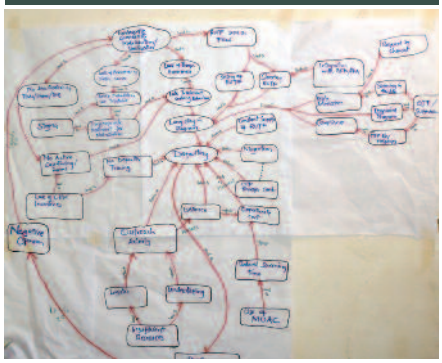


Figure 8 shows the first draft of a programme concept map from day five of the SQUEAC investigation. This illustrates the richness of data that arises from SQUEAC investigations and the ability of the BBQ tool to assist with data-analysis and presentation.

Sorting the lists of boosters and barriers into three categories with regard to the likely size of their effect on coverage (i.e. large, moderate, and small effects on coverage) helps with building the prior for the stage three survey.

The BBQ tool proved useful during the CMN training in Kenya and helped trainees make sense of large quantities of data from many and disparate sources. The boosters and barriers model helped trainees maintain the focus of the investigation and to plan data collection. The BBQ tool may be used as an alternative to mind-mapping or as a complement to mind-mapping.

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Box 2: Example of using the BBQ tool for triangulation by source and methods and hypothesis formation and testing in SQUEAC assessments

On the first day of collecting qualitative data, one of the teams found that carers of young children living in villages near health facilities delivering integrated CMAM (iCMAM) services were more aware of the iCMAM programme than carers of young children living in villages further away from health facilities delivering iCMAM services. This information, collected using informal group discussion with carers of young children in their home villages, was not confirmed by information collected by other teams. This finding was, therefore, placed in the 'Questions' section of the BBQ tool. To confirm this finding, questions were developed and incorporated into interview guides for semi-structured interviews intended to be administered to other sources (i.e. teachers and villages leaders and elders) on the following day.

On the second day of collecting qualitative data, information collected using semi-structured interviews with teachers, village leaders and village elders confirmed the original finding that distance was negatively associated with awareness of the iCMAM programme. The finding had, therefore, been confirmed by triangulation by both source and method:

Source	Method
Carers of young children	Informal group discussion
Village chiefs	Semi-structured interview
Village elders	Semi-structured interview
Teachers	Semi-structured interview

The collected data led to the formation of two linked and formal hypotheses:

> *Carers of young children living in villages* **close** *(i.e. within 1000 metres) to health facilities delivering iCMAM services are aware of the iCMAM programme (i.e. know it exists, know that it treats malnourished children, know that entry is decided by mid-upper arm circumference (MUAC), and know that the programme delivers RUTF).*

and:

> *Carers of young children living in villages* ***far*** *(i.e. further than 5 kilometres) from health facilities delivering iCMAM services are* ***not*** *aware of the iCMAM programme (i.e. do not know it exists, do not know that it treats malnourished children, do not know that entry is decided by MUAC, and do not know that the programme delivers RUTF).*

To confirm these hypotheses, small studies were performed by two different teams on days three and four of the SQUEAC assessment. Each team travelled to two villages, one of which was located near (i.e. within 1000 metres) to a health facility delivering iCMAM services and the other located far (i.e. further than 5 kilometres) from a health facility providing iCMAM services. The EPI5 sampling method was used to select five households from each of the selected villages. The EPI5 sampling method was used because it is known to return a sample similar to a simple random sample of households. Carers of young children in each of the selected households were interviewed about their awareness of the programme. An in-depth interview guide was developed for this purpose. In addition, each team was given MUAC tapes and sachets of Ready to Use Therapeutic Food (RUTF) (two types) in order to test whether informants recognised them, reflecting an awareness of the programme.

The data arising from the small studies are summarised in figure 9.

The summary data were analysed using the simplified Lot Quality Assurance Sampling (LQAS) testing procedure with good awareness defined as more than 50% of carers of young children being aware of the programme.

The first hypothesis (i.e. good awareness if near to an iCMAM facility) would be confirmed if more than:

$$d=\left\lfloor 10\times\frac{50}{100}\right\rfloor=5$$

respondents were aware of the programme in the near villages. The study found ten respondents who were aware of the programme. The first hypothesis was, therefore, confirmed.

The second hypothesis (i.e. poor awareness if far from an iCMAM facility) would be confirmed if:

$$d=\left\lfloor 10\times\frac{50}{100}\right\rfloor=5$$

or fewer respondents were aware of the programme in the far villages. The study found one respondent who was aware of the programme. The second hypothesis was, therefore, confirmed.

Given these results, the SQUEAC assessment team concluded that distance was a factor affecting programme awareness and was likely to be a factor affecting coverage.

The approach outlined here is typical of the SQUEAC investigation process. That is:

1. Qualitative data are collected and validated using triangulation by source and method.
2. Validated qualitative findings are then used to develop formal hypotheses which are tested using simple quantitative techniques.

These are sometime referred to as *Stage I and Stage II* of a SQUEAC investigation.

A note on samples sizes and methods: Small sample sizes are common in SQUEAC. This is because the use of prior information acts to reduce both classification and estimation error. In the example small studies presented here, the association between proximity and awareness is very marked and a naïve frequentist analysis (i.e. an analysis that discounts all prior information) testing the null hypothesis that programme awareness was independent of proximity to the programme would return a p-value of $p < 0.0001$ (one-tailed Fisher Exact Test). This is very strong evidence against the null hypothesis. An estimation approach would return a risk ratio of 10.00 (95% CI = 1.56; 64.20) with proximity as the 'risk exposure'.

Figure 9

Study team	Village name	Distance class	Distance from iCMAM facility	Number of respondents interviewed	Number of respondents aware of the programme	Number of respondents *not* aware of the programme
1	Lakole	Near	1 km	5	5	0
	Mlandanoor	Far	6 km	5	1	4
2	Bilikomarara	Near	1 km	5	5	0
	Martaba	Far	13 km	5	0	5

Causal analysis and the SQUEAC toolbox

By Mara Nyawo and Mark Myatt

Mara Nyawo is a nutritionist specialising in nutrition surveys and surveillance. She has nine years experience working in emergency and chronic emergency settings in Africa and is currently working for UNICEF in Sudan.

Mark Myatt is a consultant epidemiologist. His areas of expertise include surveillance of communicable diseases, epidemiology of communicable diseases, nutritional epidemiology, spatial epidemiology, and survey design. He is currently based in the UK.

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In this article we report our experiences using the SQUEAC[1] toolbox to undertake a causal analysis of severe wasting (SAM) in a rural area of Eastern Sudan. The work reported here took place during a trainers-of-trainers course in SQUEAC and SLEAC[2] coverage assessment methods. The course was organised by UNICEF and held in the city of Kassala in Eastern Sudan in September 2011. Course participants were drawn from United Nations (UN) organisations, non-governmental organisations (NGOs), and state and federal ministries of health. None of the course participants had prior experience with SQUEAC, SLEAC, or the CSAS[3] coverage assessment method.

A semi-quantitative model of causal analysis was proposed and tested. The elements of this model are outlined in Figure 1. It is important to note that many of the activities required to undertake the causal analysis are existing SQUEAC activities. The approach uses SQUEAC tools to identify risk factors and risk markers for subsequent investigation by case-control study. A matched case-control design was proposed and tested as this requires a smaller sample size than an unmatched design for the same statistical power. Matching was done on location and age. Cases were children aged between six and fifty-nine months with a mid-upper-arm-circumference (MUAC) below 115 mm and/or bilateral pitting oedema. Controls were nearby neighbours of cases and of similar age (i.e. within ± three months) with a MUAC greater than 124 mm without bilateral pitting oedema. Data were collected on 35 sets of matched cases (n = 35) and controls (n = 78). The overall sample size for the study was, therefore, n = 113.

Collection of causal data using the SQUEAC toolbox

Trainees had no difficulty collecting case-histories from the carers of SAM cases in the programme and from carers of non-covered SAM cases found in the community during SQUEAC small-area surveys. Trainees also had no difficulty collecting causal information from a variety of informants (e.g. medical assistants, community based volunteers (CBV), traditional birth attendants, traditional health practitioners, village leaders, etc.) using informal group discussions, in-depth interviews, and semi-structured interviews. They also had no difficulty in collating and analysing the collected data using concept-maps and mind-maps (see Figure 2). Trainees had little difficulty expressing findings as testable hypotheses. These are all core SQUEAC activities. Trainees selected potential risk factors and risk markers for further investigation with minimal intervention from the trainer.

Translation of findings to data collection instruments

Some trainees had difficulty in designing instruments (i.e. question sets) to test stated hypotheses. The problem appeared to be in formulating unambiguous questions and in breaking down complex questions into small sets of simple linked questions. Future development work should explore whether role-playing might help with this activity. Trainees found little problem identifying, adapting, and using predefined question sets (e.g. for a household dietary diversity score and for infant and young child feeding (IYCF) practices) when these were available. Future development work should focus on building a library of pre-tested and ready-to-use questionnaire components likely to be of use. Trainees had little difficulty field-testing their data collection instruments and adaptations were made and tested in the field and again at the survey office.

Case-finding and questionnaire management

Trainees quickly developed the skills required for active and adaptive case-finding (this was expected from previous SQUEAC trainings). Identification of matched controls was performed well under minimal supervision. The management of questionnaires for a matched case-control study was also performed well under minimal supervision.

Applying the case-control questionnaire to cases, identifying appropriately matched controls for each case, applying the case-control questionnaire to controls, and the management of study paperwork added a considerable data-collection overhead above that already required by the SQUEAC likelihood survey[4]. It is estimated that surveyor workload for the likelihood survey may increase by 50% or more.

Data-entry and data-checking

Great difficulty was experienced and much time wasted working with EpiInfo for Windows. This software proved both difficult to use and unreliable. Data were lost on two occasions. Switching to EpiData proved necessary. This software proved much easier to learn and use. Future development work should use a simple and

[1] Semi-quantitative Evaluation of Access and Coverage
[2] Simplified LQAS Evaluation of Access and Coverage (LQAS: Lot Quality Assurance Sampling)
[3] Centric systematic area sample
[4] The survey conducted in the (optional) third stage of a SQUEAC investigation which, when combined with other data, provides an estimate of overall programme coverag

reliable data-entry system such as EpiData. This software can be run from a USB flash drive and does not require software to be installed.

Data-analysis

No attempts were made to teach the details of the techniques required for data management and data analysis. This component was not tested because the computers available were configured so as to prevent the installation of software (the intention had been to test this activity using a free student version of a major commercial statistics package). Data were analysed using the MSDOS version of EpiInfo (v6.04d) and the cLogistic add-in software. This command-line driven software may not be suitable for use by workers used to using more graphical software.

The process of data analysis (i.e. conditional logistic regression with backwards elimination of non-significant variables) was demonstrated to a local supervisor with some experience with the analysis of cross-sectional survey data (e.g. SMART[5], IYCF, MICS (Multiple Indicator Cluster Survey)). He managed to replicate the demonstrated analysis using EpiInfo and cLogistic. He later demonstrated the analysis to the trainee group and independently reproduced the analysis using STATA. The results of the analysis (from cLogistic) are shown in Figure 3.

Further work is required to identify useful software and to develop a practical manual including worked examples. The manual could be a self-paced programmed learning course. This would allow both self-teaching and classroom-based teaching. The manual should cover data-entry and checking, data-management, data-analysis, and reporting.

Summary

The data collected in this exercise were sufficient to identify risk factors and risk markers (i.e. diarrhoea, fever, early introduction of fluids other than breastmilk – a marker for poor IYCF practices) that were significantly associated with SAM. This suggests that it is possible to use the SQUEAC toolbox to collect causal data using the level of staff selected for training as SQUEAC supervisors and trainers. Data analysis may, however, require staff with a stronger background in data-analysis.

Consideration should be given as to whether a case-series or set of case-reports collected from carers of cases in a community based management of acute malnutrition (CMAM) programme and non-covered cases found in the community during SQUEAC small-area surveys could provide a useful causal analysis. Collected data could be organised and presented using a mind-map (as in Figure 2). This would be simpler and cheaper than a case-control study and would probably be more robust than currently utilised methods which tend to use a single round of focus groups (typically excluding carers of SAM cases) and a 'problem-tree' analysis.

The work reported here supports the further development and testing of the proposed model for a causal analysis add-in to SQUEAC. This article is intended to inform the emergency and development nutrition community of our experiences with this model so as to allow us to judge the level of interest in further development of the method.

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Figure 1: The proposed model of causal analysis

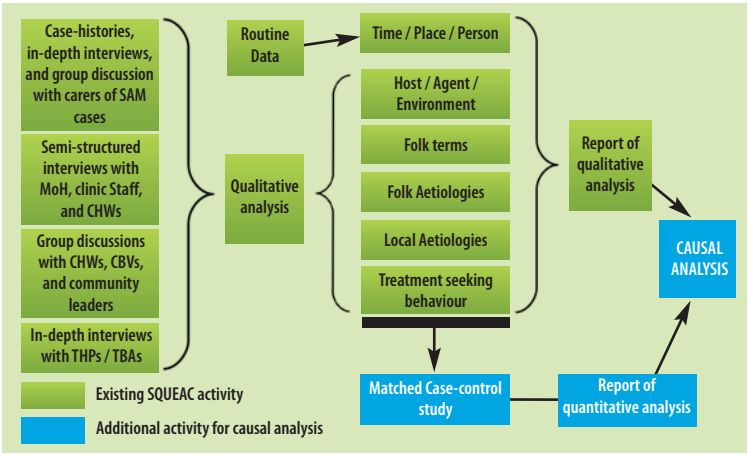


Figure 2: Mind map of potential risk factors and risk markers for severe wasting created using standard SQUEAC tools

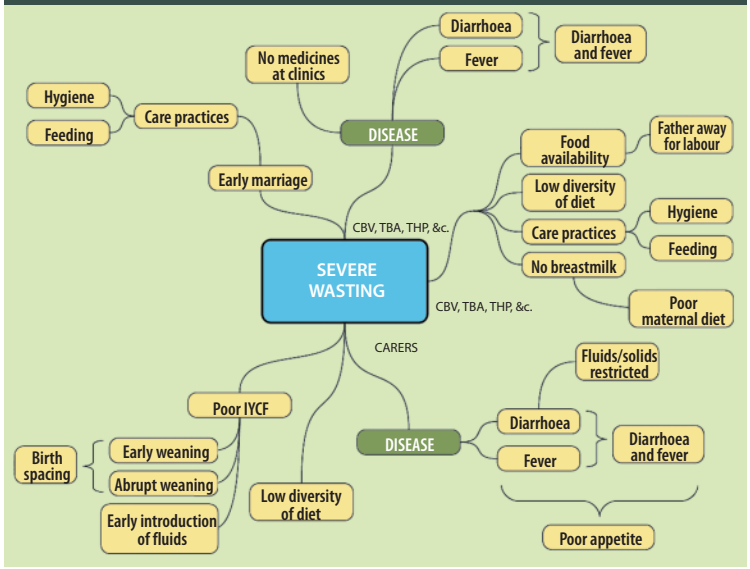


Figure 3: Results of the analysis in cLogistic

```
Conditional logistic regression DIA + FEVER + FLUID
Score statistic = 24.0557 3 df (P = .0000)
Likelihood ratio statistic = 28.9999 3 df (P = .0000)
Dependent Variable = CASE

Standard          Coefficient  Error     Coef/SE    "P value"
DIA               1.5247       .5675     2.6866     .0072
FEVER             2.1704       .6589     3.2941     .0010
FLUID             -.3233       .1717     -1.8829    .0597

95% Confidence    Coefficient                       Odds ratio
limits            lower limit  upper limit  lower limit  upper limit
DIA               .4124        1.5247       2.6370       1.5104       4.5938       13.9713
FEVER             .8790        2.1704       3.4617       2.4085       8.7615       31.8721
FLUID             -.6599       -.3233       .0132        .5169        .7237        1.0133

Likelihood ratios H0: coeff = 0 lr statistic (1 df) P-value
DIA               8.6471                    .0033
FEVER             15.6792                   .0001
FLUID             4.3655                    .0367
```

This analysis shows that diarrhoea (**DIA**) and fever (**FEVER**) are strongly and positively associated with SAM. The variable **FLUID** is the age (in months) at which the mother reports that fluids other than breastmilk were introduced into the child's diet. Increasing age is negatively associated with SAM (i.e. early introduction of fluids other than breastmilk increases the risk of SAM).

Analysis of other data that were collected during the case-control study revealed that around 63% of carers whose child had a recent episode of diarrhoea had (inappropriately) restricted the intake of both fluids and solids.

This analysis suggests the following interventions:

- Promotion of ORS
- Promotion of hand-washing and other hygienic practices
- Improved provision of antimicrobials at PHC facilities
- Increasing water availability (supporting hygiene promotion)
- Promotion of appropriate IYCF practices

Lessons from the Field

Participatory analysis of barriers to access in Central Polkot, Kenya

By Samuel Hauensteinswan

Samuel Hauensteinswan is the senior research and policy advisor for ACF UK. Over the years, he has conducted much participatory research on the interlinkages between nutrition and livelihoods. He has worked for humanitarian organisations for over two decades.

Original Article

Alongside the county-wide SLEAC[1] survey in Central Pokot, Kenya , led by Action Against Hunger (ACF) and the Ministry of Health (MoH), a Participatory Rural Appraisal (PRA) assessment was conducted in conjunction with the Coverage Monitoring Network (CMN) of self-identified barriers to access to the Integrated Management of Acute Malnutrition (IMAM[2]) programme supported by funds from ECHO and UNICEF. The assessment focused on one sub-location in the central part of the county, around the administrative Centre of Sigor.

The aim of the PRA was to identify what, in the eyes of the guardian of the patient using IMAM services, are the key barriers to programme access and how can these be overcome. The research visit does not put forward preconceived ideas but collects the local views as accurately as possible. The finalised paper: *Barriers to CMAM/IMAM Services in Central Pokot, Kenya PRA Assessment with Users* is on the CMN website. This article highlights the main findings and illustrates these with accounts from some individual guardians of malnourished childen.

One hour ago Cheposokol arrived at the IMAM Lomut health centre in Central Pokot, Kenya, with one-year-old Pkorir. She walked from her hill side village in down the long and winding path for hours to get to the centre. Her son has been unwell for a couple of weeks, with a fever, diarrhoea and vomiting. His face and body are very swollen and he is in a lot of pain and very weak. Tragically, Cheposokol had another child, a two-year-old girl called Cherimo, who had similar symptoms to Pkorir but sadly past away three weeks ago.

"I know the children don't have good or sufficient food to eat," explains Cheposokol. "My husband does not support the family much and so I have to look after my children alone and work in the field to get money for food, clothes and all the rest. When Cherimo was falling ill I had too little time and money to come to the centre. I had to keep working."

Nancy and Joseph, interviewed at Sigor's Hospital Stabilisation Centre (SC), have also had to leave their fields and occasional work with better off neighbours, in order to stay with their daughter Irine. It is the planting season; they are extremely worried that the fields will be damaged when they return, which will be very costly for them.

Samuel Hauensteinswann, West Pokot, Kenya, 2013

Joseph says: "We are concerned about financial problems resulting from us missing three weeks work. And who knows if the neighbour will have found other people to do my jobs". Mary adds that she is worried about her other children, will they get to eat and be looked after?

These and other similar stories give real insight into the decisive factors for carers, mainly mothers, when deciding whether to bring their children to, or delay access to, IMAM services. In the face of deprivation, weak health and hunger, doing one thing impacts on the whole livelihood of a family: (i) can care of siblings be organised in the family, community or along the way? (ii) is the service compatible with her other (domestic and farm) duties? and (iii) how great a demand is the treatment on the household resources? Through conversations with affected people, the research showed that only if all of these questions are considered and the carer understands the full threat that malnutrition poses to their child, can they reach a decision.

For the IMAM providers it is paramount to understand such factors that feed into the decision-making process of a carer, as to whether to stay at home or to bring their child to their clinic in time. In order to adjust and become a truly accessible service, participatory exercises must become routine and must be systematically integrated into the project cycle management. Understanding of the decision-making process can then feed into progressively better ac-

[1] Simplified Lot Quality Assurance Sampling Evaluation of Access and Coverage (SLEAC), *West Pokot County, Kenya, July 2013*, Action Against Hunger (ACF) and Coverage Monitoring Network (CMN)

[2] Also refered to as Community Management of Acute Malnutrition (CMAM)

commodated health care delivery, resulting in fewer barriers to access and higher coverage.

The participatory methodology involved well tested, rapid and established PRA research methods, such as preference ranking, seasonal calendars and dream mapping. Following each step, we verified the outcomes and data collection with a triangulation discussion to ensure all voices were taken into account. An additional step involved cross-checking qualitative information with the multi-disciplinary ACF and MoH teams, as well as aligning it with secondary data/sources (including a temporary hypothesis resulting from the on-going SLEAC survey).

The close relationship between communities, ACF and the MoH ensured optimal condition and trust for the participatory exercises in the villages. On the other hand, the fact that ACF was known to the villagers, resulted in a bias towards focus groups that had come in contact with malnutrition and the services offering treatment.

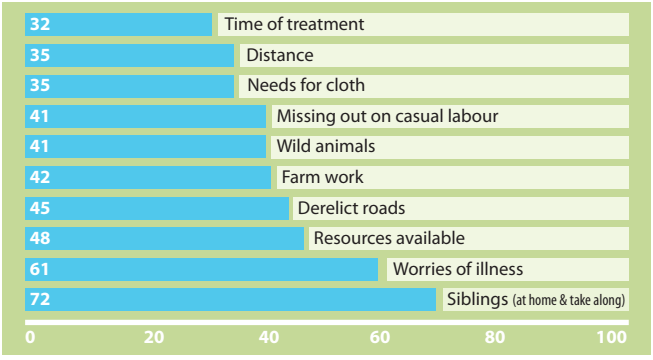
Therefore it is expected that the first barrier cited in the SLEAC assessment regarding "knowledge about the programme" was not likely to feature much in our discussions, nor the conclusions of this PRA research.

The consolidated result of the participatory research confirmed some of the findings from the SLEAC survey, and also added several layers to the assessment. Where the SLEAC found "distance" to be of great importance, the PRA considered the term "too great distance" to be a combination of interrelated issues.

Nancy Lomwai unties Joyline and Belina, her twin daughters, from her shoulders. It took her several hours to get to the Chesta health centre to monitor their weekly progress and give them the Ready-to-Use Therapeutic Food (RUTF).

Nancy says: "I try to give my babies breast milk but I never have enough and so I must add porridge and Ugali to satisfy their appetite. It is the dry season and we have no green vegetables, milk or

Figure 1: Barriers to CMAM access: combined PRA scores (women groups), Pokot Kenya July 2013



Samuel Hauensteinswanm, West Pokot, Kenya, 2013

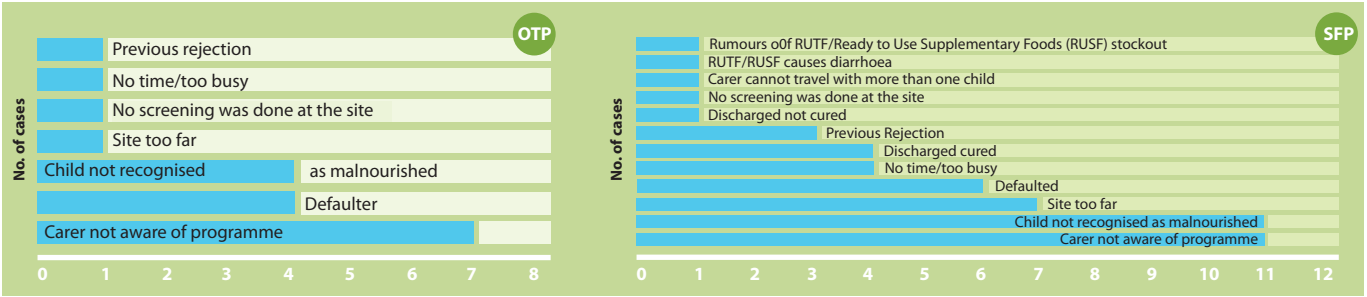
pulses. We are lucky the twins are not too heavy and there is no river in our way so I can come here". She is implying that if her children were older or they lived on the other side of one of the temporary rivers, which swell up after a rain shower, she would have to climb on to a bus at great expense, maybe too great an expense.

Visiting the mother of a child, missing for several weeks during the follow up visits at the clinic, we heard that after she had found that the clinic had run out of RUFT and told her to return home empty handed, she decided that she could no longer justify undertaking the weekly journey to the clinic. "I have to work. I get whatever I can, to feed the children. We have no good clothes to wear and the trip costs too much not to get any thing. It is too far!"

The prioritisation exercises during the focus groups confirmed these individual stories: poor road infrastructure, flooding rivers, costly transport and unpredictable health services (pipeline breaks, waiting times and absent staff) were all subsumed into the family's decision as to whether a trip is "too great distance" to undertake. Increased geographic coverage is already part of the ACF/MoH strategy in so far as the programme is expanding into additional health delivery points across the county. The PRA assessment however points to areas where the IMAM teams could potentially support other factors for positive decision making, by analysing and enhancing other issues that are associated with "too great distance".

In respect to sibling care, the community suggested a continuation of initiatives that strengthen horizontal solidarity and spread knowledge about malnutrition. Ongoing education that encourages carers of children that have recovered from acute malnutrition to meet and talk to peers in their communities proved very popular with women and men. They are already taking place in parts of the county where 'man to man' and 'woman to woman' groups are organised by the community health workers (CHW). These groups are assessed by the community as valuable tools to inform commu-

Figure 2: Barriers identified for OTP and SFP coverage in central Pokot (primary analysis SLEAC 2013)



nities on the symptoms, prevention and treatment of acute malnutrition. A woman participant of this research tells us: "Our men are often not aware about the risk and the urgency to seek treatment. Men to men groups help them to understand and makes it easier for the wife to get their blessing to go to the clinics". These groups have proven to be useful in spreading information. In addition they are a great place for the IMAM project to get feedback on their own performance and how to lower barriers to access.

Neither Cheposokol, Nancy, Joseph, nor the many others we encountered for this research, are far from being fatalistic and provided practical suggestions for lowering barriers to access. For a detailed and quantitative discussion see the full report available on the CMN website. The outcome makes it clear that project planning, and delivery can significantly accelerate coverage if it manages to shift guardian's decision-making, based on a participatory assuagement considering not only on the individual needs of the malnourished child, but also the wider collective environment of that child. Only when all household members agree, that seeking treatment is balanced against other livelihood necessities the coverage will rise significantly and, more importantly, sustainably.

Samuel Hauensteinswann, West Pokot, Kenya, 2013

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Remote monitoring of CMAM programmes coverage:

SQUEAC lessons in Mali and Mauritania

By Jose Luis Alvarez Moran, Brian Mac Domhnaill and Saul Guerrero

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The authors would like to thank Chantal Autotte Bouchard, David Kerespars, Dr. Theophane Traore, INSTAT, and the ACF teams in Mali, Mauritania and Spain (Elisa Dominguez in particular) for their support. To Ernest Guevara (Valid International) and Mark Myatt (Brixton Health) for their valuable comments and to the European Commission Office for Humanitarian Aid & Civil Protection (ECHO) for their financial support

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Action Against Hunger (ACF) currently supports community based management of acute malnutrition programmes (CMAM) programmes in over 20 countries around the world, with a long-standing presence in the Sahel region of West Africa, including Mauritania, Niger, Mali and Chad. Most of these interventions are integrated CMAM programmes, operated by Ministries of Health and local partners with technical and logistical support from ACF teams on the ground. Monitoring the impact of these interventions, and their coverage in particular, is of paramount importance to the organisation. Increasing coverage was instrumental in the shift from inpatient care in the form of therapeutic feeding centres (TFCs) to outpatient models (CMAM) and remains one of the most widely accepted indicators of programme performance and impact. Whilst other indicators (e.g. cure rates, length of stay, average weight gain) provide an insight into the efficacy of treatment, only when combined with coverage do they provides an accurate and reliable indication of the needs met by a programme. Since December 2010, ACF has been increasingly relying on the Semi-Quantitative Evaluation of Access & Coverage (SQUEAC) to measure programme coverage and identify the factors affecting the performance of CMAM programmes[1].

[1] For more on the SQUEAC method and its use see Myatt, M. SQUEAC: Low re source method to evaluate access and coverage of programmes. (Field Exchange, Emergency Nutrition Network, Issue 33, June 2008, p.3) & Schofield, L. et.al. (2010) SQUEAC in routine monitoring of CMAM programme coverage in Ethiopia (Field Exchange, Issue 38, April 2010, Emergency Nutrition Network, p.35).

According to a recent UNICEF estimation, there are 55 countries currently implementing CMAM in one form or another[2]. The scale of CMAM programming, limited non-governmental organisation (NGO) resources, and deteriorating security conditions in many regions (including in the north-west and Horn of Africa) is increasingly forcing support organisations such as ACF to operate remotely with limited access to programme areas. The extent of the constraints varies, from limited access to areas within a district (e.g. ACF supported programme in Guidimaka, Mauritania), to limited access to parts of a country (e.g. ACF supported programme in Gao, Mali) to limited access to an entire country (e.g. ACF supported programmes in Somalia). All of these environments present challenges, in particular for the implementation of monitoring and evaluation activities with a strong field component such as SQUEAC.

Monitoring coverage remotely

Experiences in using SQUEAC remotely have been limited, with the most notable experience provided by Valid International and Oxfam-Novib in Somalia[3] (see Box 1). Recently, ACF carried out SQUEAC investigations in Mauritania (February 2011) and Mali (July-August 2011). In both cases, lack of security prevented the SQUEAC lead investigators from travelling to the programme areas. In the case of Gao (Mali), the lead investigator was unable to visit the district in which the programme operated but was able to visit a neighbouring district. In the case of Guidimaka (Mauritania), the investigator was able to visit the district but could not travel to most areas outside of the district capital.

The analysis presented here will draw largely from these two experiences. A brief synopsis of the SQUEAC methodology and its key features in more conventional settings is included in Box 2. The article focuses its attention on two general stages of using SQUEAC to monitor programme coverage remotely: planning and implementation. It will conclude with some lessons learned and provide practical suggestions for other practitioners wishing to undertake similar exercises in the future.

ACF's remote experiences in Mali and Mauritania

CMAM programmes supported by ACF in Gao (Mali) and Guidimaka (Mauritania) are largely inaccessible to expatriate staff due to security threats posed by AQMI (Al-Qaida au Maghreb Islamique) in the region. Security threats do not prevent local teams from implementing programme activities, but monitoring supervision is more difficult since the local teams often need to travel to more accessible areas to meet with technical support and management staff. The decision to evaluate the coverage of both these programmes forced the organisation to explore different means of employing SQUEAC.

Both investigations faced similar accessibility problems and relied on the work of external SQUEAC lead investigators brought into the programme especially to carry out the investigations. The lead investigators had constant remote support from ACF's Evaluations, Learning & Accountability (ELA) Advisor based in London. In both countries, two teams were formed: a coordination team (including the lead investigator, the ACF Medico-Nutritional Coordinator, and the logistics department at capital level) and a data collection team (composed of the investigator's assistant and local enumerators recruited for the purposes of SQUEAC).

The type of training received by the lead investigators prior to their respective SQUEACs was different. The lead investigator for Mauritania received a three-day SQUEAC introductory training prior to departure, and remote technical support throughout the investigation period. The lead investigator for Mali received a 5-day, on-the-job training in-country, which included joint analysis of existing programme data and the development of preliminary hypotheses. The availability of previous SQUEAC experience was helpful in planning SQUEAC remotely, particularly for developing a hypothesis about coverage with limited access to the programme.

Box 1: Monitoring coverage remotely in Somalia: The Valid International experience

Valid International has supported the set-up, monitoring and evaluation of a community therapeutic care (CTC) programme in Mogadishu, Somalia for the past 2 years. The monitoring and evaluation support was built around the assessment of coverage using SQUEAC as a framework. Hence, components of the SQUEAC toolbox were put in place right from programme set-up. This allowed for a more organic SQUEAC process that followed the programme cycle of implementation.

This was deemed suitable in the context of programming in Mogadishu where access to the programme sites by external persons is an issue. Institutionalising a routine system of coverage evaluation was the most suitable way and SQUEAC proved to be an effective framework. This allowed for a mechanism by which the use of different components of the SQUEAC toolbox at various periods or steps, rather than in 'just one go' typical of other investigations. This also allowed for remote external support to be provided appropriately and as needed.

This is the approach that Valid International is taking in contexts such as Mogadishu but is an approach that is ideal even in developmental and more stable conditions.

Key lessons learned

ACF's experiences in implementing SQUEAC remotely in Mali and Mauritania provided five key lessons:

Advanced planning

When undertaking SQUEAC remotely, forward planning is essential. This is partly due to time constraints. When working remotely, activities take longer, but since the exercise must be completed in a similar timeframe (to remain practical and cost-effective), time must be managed more strategically than in 'conventional' environments. ACF's experience showed that both the coordination and data collection teams must be well coordinated to ensure an optimal use of each team's time. For example, with advanced planning, the coordination team is able to carry out some parts of the analysis whilst the field team simultaneously collects field data. In that respect, the SQUEAC methodology is appropriate for such environments, as it is not always a linear process (between inputs and outputs) and is flexible enough to allow for multiple activities to be implemented, sometimes in parallel. Advanced planning is also essential to ensure an adequate recruitment process for reliable enumerators that can take significantly longer when undertaken remotely.

Data collation

The first stage of a SQUEAC investigation involves collating/collecting programme data to build a picture of what programme coverage is and where the areas of high and low coverage are likely to be. This process of data collation normally takes place during the SQUEAC investigation period, partly on the assumption that these data are readily available from programme reporting, databases and other information management systems. Collating all this information in remote programmes can be a long process, especially for integrated (MoH-led) programmes where information is often held at the Service Delivery Units (e.g. health centres). The experience

[2] UNICEF & Valid International (2011) Global Mapping Review of Community-based Management of Acute Malnutrition with a focus on Severe Acute Malnutrition (Nutrition Section, Nutrition in Emergency Unit, UNICEF HQ-NY and Valid International, March 2011)

[3] Valid International. Personal Communication.

Box 2: SQUEAC: a summary

In 2007, Valid International in collaboration with FANTA/AED, UNICEF, Concern Worldwide, World Vision International, ACF-UK, Tufts University and Brixton Health, developed the Semi-Quantitative Evaluation of Access & Coverage (SQUEAC). The SQUEAC methodology was designed as a low-resource method capable of evaluating programme coverage and identifying barriers to access. SQUEAC is not a survey method but a toolkit designed to provide programme practitioners with different means to evaluate the proportion of the target population covered by a nutrition programme.

Whilst the need to increase nutrition programme coverage was one of the central pillars behind the shift from centre-based treatment to community-based models, measuring programme coverage directly has often proven difficult. Existing tools, such as the Centric Systematic Area Sampling (CSAS) technique, were robust and reliable, yet by their very nature, resource-intensive and often costly. This effectively led to their use as evaluative tools rather than monitoring mechanisms.

SQUEAC investigations are generally carried out in three distinct stages :

Stage One identifies areas of high and low coverage and reasons for coverage failure using existing programme data (e.g. admissions, exits) and easy-to-collect data. Whilst much of this data analysis can be collected remotely, access to programme areas is normally required to allow for the collection of additional data (qualitative data in particular) used to triangulate existing information.

Stage Two is designed to test the hypotheses (about areas of low and high coverage and reasons for coverage failure) developed in Stage One. Testing can be carried out using small studies, small surveys and/or small-area surveys. All of these alternatives normally require access to the programme area.

Stage Three uses Bayesian techniques to estimate programme coverage. The technique relies on previously collected data to develop a 'prior'[4] about programme coverage. A wide-area survey is then carried out to collect data to develop a "likelihood"[5] (which, together with the "prior", helps provide a "posterior"[6] or final estimate of programme coverage). Wide area surveys require access to all survey areas of the programme. Whilst Stage 3 can potentially be left out of the SQUEAC process, it is an essential component if overall coverage estimate is required.

There are no pre-set timeframes for a SQUEAC investigation, but under stable conditions in which information can be accessed and tested relatively easily, a full SQUEAC can last between 14-28 days. Whilst SQUEAC was designed to be implemented by programme staff directly, SQUEAC investigations are still commonly implemented under the supervision of SQUEAC lead investigators.

from Mali shows that collating such information prior to the start of SQUEAC can ensure that Stage One focuses mostly on analysing the data (and requesting additional data) rather than on collating it. In this respect, having a multi-layered team (with coordination and a data collection team in the field) enables some elements of the analysis/collection of (last minute) data to be undertaken in tandem.

The Mali and Mauritania experiences show that some data can and should be collected in advance (see Box 3). Some of this information is consistently collected through routine monitoring data (including admissions, defaulters and deaths) but other atypical and non-routine data require specific mechanisms to collect them. Integrating these last ones in the basic programme monitoring data would facilitate the implementation (and mainstreaming) of coverage investigations.

Multi-layered team

SQUEAC investigators will still need to determine what and how additional qualitative and quantitative data are to be collected, as well as means of analysis. In conventional SQUEAC investigations, these processes generally occur in the same place and are carried out by the same teams (enabling a more real-time, active/reactive process of data collection). In remote investigations, a separation of the two processes may be necessary, employing a multi-layered team approach. The model used in Mali replicated the two-tier CMAM implementation approach used by ACF to support the CMAM programme. In other words, most technical/ strategic/analytical processes were carried out remotely by one team (the coordination team) while a second team (the data collection team) had access to the programme area and was in charge of carrying out qualitative and quantitative data collection processes (see Figure 1). For this two-tier arrangement to succeed, regular communication (prior to and during) the investigation was crucial.

Regular communication

Even when a programme area is not equally accessible to all, it is important to bring all the teams working in a SQUEAC to an accessible location for discussion about the activities and processes involved (e.g. calculating weight for height, measuring mid upper arm circumference (MUAC), presence of oedema, etc.). Face-to face communication should occur at least once with the lead investigator. During these meetings it is important to involve everyone in the development of a map of the programme area. The development of a map jointly with the team not only ensures that the spatial dimension of the exercise is understood, but it is a critical step in ensuring that the lead investigator gets an opportunity to discuss and explore questions about the programme area. Working with a map will help in the implementation of SQUEAC and also assist the supervision of the teams.

Once SQUEAC begins, regular communication becomes essential. New technologies, such as internet, emails and mobile telephones, are able to provide a real-time link between those with direct access to the field and the coordination team working remotely. In Mali, other platforms such as radio proved helpful in enabling field teams to notify remote communities of their planned field visits. New technologies allowed for a timely transfer of information between field teams and coordination teams. More importantly perhaps, new technologies enabled both teams to remain in touch and in the process steer the process of data collection and data analysis.

Linking data analysis and data collection and steering the process of data collection is particularly important when it comes to collecting qualitative data. Qualitative data collection in SQUEAC can set out to assess factors that are known to influence coverage (see Box 4) but it must ultimately be an iterative process, adapted to newly emerging information and trends. Communication between those collecting qualitative data, and those responsible for analysing it and identifying new lines of enquiry, is therefore essential, as is the triangulation of qualitative data.

Supervision & motivation

The process of qualitative and quantitative data collection in SQUEAC often merits close supervision to ensure that data are adequately triangulated (by source and method) and to ensure that sampling is comprehensive and exhaustive. In Mali and Mauritania, supervision could not be undertaken directly by the coordination

[4] In Bayesian inference, the prior is a probabilistic representation of available knowledge about a quantity. In SQUEAC, the prior is a probabilistic representation of knowledge relating to programme coverage. SQUEAC uses a Beta distributed prior.

[5] In Bayesian inference, the information provided by new evidence. The likelihood is use to modify the prior to arrive at the posterior. In SQUEAC, this is the information provided by a survey (the likelihood survey).

[6] In Bayesian inference, the posterior is the result of modifying prior belief using new evidence

team or the lead investigator due to a lack of access to (most) programme areas. Some of the issues already discussed (e.g. regular communication, advanced planning and recruitment of adequate field teams, etc.) combined with well managed workloads and clear roles and responsibilities can help minimise risks of remote coverage The selection of a strong and reliable assistant(s) is an essential part of remote SQUEAC implementation. Spending sufficient time to transmit the methodology and the processes involved can ensure that the assistant(s) will be able to steer the teams in the right direction. Constant communication is also essential.

The experiences from Mali and Mauritania provide some examples of how how proactively to strengthen supervision and motivation. In Mali, teams carried out daily phone conversations at the start of the day to discuss the daily plan of action and at the end of every day to follow up, strengthen the team motivation and address everyday field problems. In Mauritania, data collection teams returned to base whenever possible to debrief, relay data, and discuss challenges.

Proactively investing in recruitment and training cannot always ensure a successful outcome. In Mauritania, the data collected as part of the wide-area survey (Stage 3) was found, upon checking, to be unreliable. A decision was made to send a second team of enumerators to re-verify the data. This was only possible because of the contingency planning developed to accommodate the remote nature of the exercise.

Conclusions

ACF's experiences in Mali and Mauritania have shown that physical lack of access to programme areas is not an insurmountable barrier to monitoring the performance of the intervention. Implementing remote SQUEAC investigations is feasible and can provide sufficiently reliable data about programme coverage and the factors affecting it. Remote coverage investigations do not require additional time or resources if there is enough advance planning, support from the local base and a contingency plan has been provided. They do require that standard SQUEAC processes be accentuated or strengthened. These include: advanced planning, preparation of data for its analysis, separating data collection and data analysis processes, using new technologies to ensure regular communication between both sets of activities, and addressing the issue of supervision and motivation proactively and reactively as the investigation develops.

Like other aspects of remote technical support, implementing SQUEAC investigations remotely does require a greater degree of reliance on field teams. Trust is of the essence, but CMAM programmes can minimise potential risks by investing time in the selection of these teams and by allocating manageable daily workloads. Although SQUEAC was designed to be implemented by programme staff, the involvement of experienced lead investigators/technical advisors often proves valuable in the process of data analysis, by bringing a measure of objectivity to key processes (e.g. interpretation/weighing of findings when building a prior). In remote SQUEAC, the presence and input of external technical advisors can help bridge the gaps left by lack of access and limited data accessibility. As the experience from Mali showed, such input during the early part of the process (Stage One) was particularly helpful in ensuring that subsequent processes were adequately implemented. Finally robust data collection, always important for SQUEAC, is essential for remotely managed programmes. By introducing local teams to SQUEAC, it becomes easier for programmes to adopt SQUEAC-based monitoring frameworks that can facilitate future SQUEAC investigations and programme monitoring as a whole.

Box 3: Key CMAM programme data to be collected/collated prior to the start of a SQUEAC investigation

- Programme admissions (by month, by site, by home location)
- MUAC on admission
- Critical events calendar (i.e. annual calendar showing key events that influenced programme coverage positively or negatively)
- Seasonal diseases calendar
- Stock Break Calendar (i.e. annual calendar showing periods of disruption in RUTF supply)
- Referral effectiveness
- Volunteers activity data
- Programme exits

Box 4: Key themes for qualitative data collecting in SQUEAC

- Local aetiologies
- Community awareness
- Participation in the programme
- Barriers to access
- Perceived coverage
- Accessibility and insecurity

SQUEAC was developed as a way for nutrition programmes to monitor their own performance. For programmes operating in areas with limited access/mobility, the need for reliable self-evaluation tools is particularly pressing. Carrying out SQUEACs in such contexts is possible with only minimal changes to the methodology. The real challenge lies in creating the capacity within these programmes to collect, document, analyse and report routine data in a manner that enables them to carry out future exercises with minimum external support.

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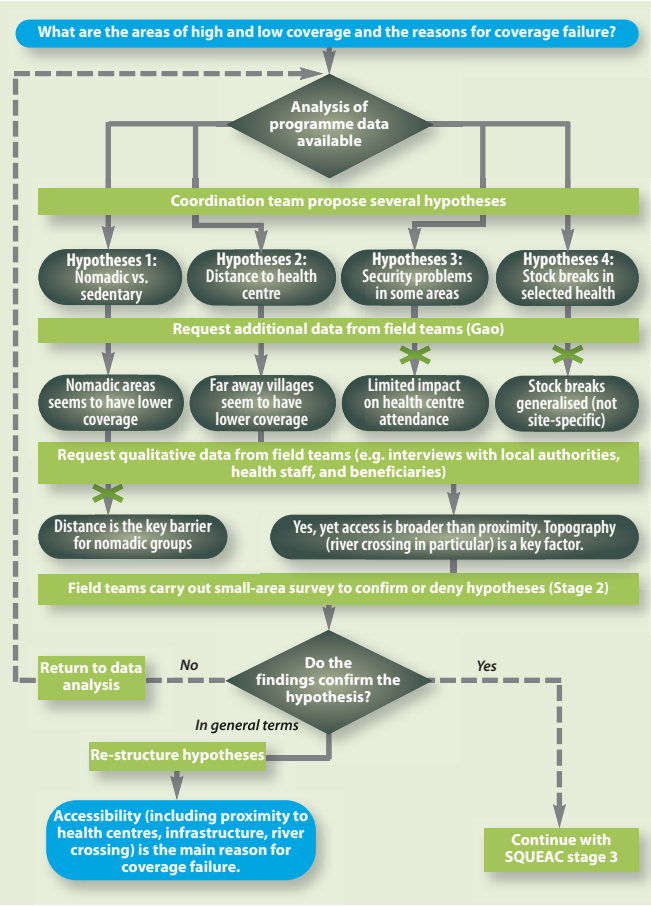
Figure 1: Development & testing of hypothesis by multi-layered team in Mali



Debunking urban myths:
access & coverage of SAM-treatment programmes in urban contexts

By Saul Guerrero, Koki Kyalo, Yacob Yishak, Samuel Kirichu, Uwimana Sebinwa and Allie Norris

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Introduction

Over the last decade, the treatment of SAM has been mainstreamed and rolled out around the world. Today, there are more SAM treatment services than ever before, covering a wider range of contexts. As part of that transition, SAM treatment has transcended from solely focusing on isolated, rural areas (often during/following a period of food insecurity and conflict), to urban areas in more stable, developmental contexts. This transition has exposed SAM treatment programmes to a number of variations in the causes (actual and perceived) of SAM and the way in which people respond to it, as well as variations in the way in which SAM treatment is delivered.

With the introduction of easy-to-use coverage assessment methodologies, and their application in a variety of urban contexts including Kenya, Liberia, Haiti, Democratic Republic of Congo (DRC), Afghanistan, Cameroon and Zambia, a growing body of evidence about SAM treatment in urban settings is emerging. What this evidence provides is a series of lessons about the challenges and opportunities presented by urban environments, and how, in reality, barriers and boosters to access are often dramatically different to how they were once perceived. As our understanding of urban programming grows, many of the underlying urban myths that have shaped SAM treatment programming have been exposed. This article draws from a range of experiences in different urban contexts to shed light on four of the most common myths influencing SAM programming.

Expectations & performance

There is a widespread consensus that urban contexts are unique, with specific sets of challenges and opportunities that affect access to primary health care programmes. In the case of SAM treatment, there are no universally agreed standards to evaluate how accessible SAM treatment programmes should be in urban environments. The only such available reference is the SPHERE Standards, which stipulate coverage rates of >50% for rural programmes, >70% for urban programmes and >90% for camp settings. These standards are clearly designed for humanitarian, emergency programmes and are therefore not always applicable to the developmental, urban environments in which SAM treatment is currently delivered. But there is a profound assumption underpinning SPHERE standards that has come to shape expectations of coverage in urban programmes; that SAM-treat ment programmes in urban programmes should reach a higher proportion of the affected population than its rural counterparts.

This in turn implies that access is easier in urban environments, that barriers are somehow more easily surmountable. Part of this belief stems from the fact that access is (wrongly) equated with distance, something which is indeed significantly different compared to rural environments. But physical access is only a part of it; coverage is ultimately defined by the capacity of a prog- ramme to enrol a high proportion of the affected population (uptake) and the capacity to retain these cases until they are successfully cured (compliance). Coverage and defaulting data therefore provide the necessary evidence to determine whether these assumptions about easier access in urban environments are justified.

Defaulting rates in urban contexts

Evaluating the comparative performance of urban programmes requires a baseline, a sense of what the average or expected defaulting rate is in a 'normal' SAM treatment programme. SPHERE stipulates that the default rate of a SAM treatment programme should be <15%. This threshold is corroborated by a recent analysis carried out by Action Contre la Faim (ACF) with publically available data from (urban, rural and camp) SAM treatment programmes (n =85 programmes) covering the period 2007-2013, which found a median defaulting rate of 13%.

Figure 1: Median coverage of out patient SAM-treatment programmes (2003-2013, by context with highest & lowest recorded rates)

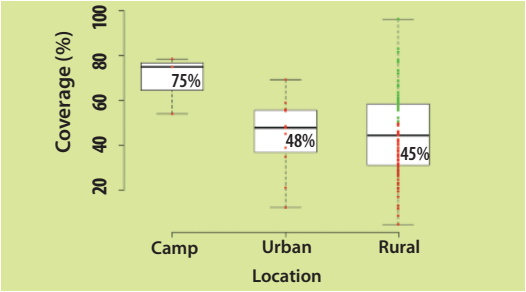

Table 1: Data from Nairobi SAM-treatment programme

Year	No. of Admissions	Cure Rate	Death rate	Default rate
2008	1,607	48.4%	2.4%	47.0%
2009	2,737	67.4%	3.1%	28.1%
2010	4,669	76.0%	2.0%	21.0%
2011	6,117	81.4%	1.8%	16.8%
2012	6,859	85.2%	1.0%	10.8%

Using these two figures as a reference, we find that defaulting is higher in urban SAM treatment programmes than in any other setting. Coverage assessments carried out in Lusaka (Zambia) in 2008 found defaulting of up to 69% of total exits in some facilities. Similar assessments carried out by the French Red Cross in urban Maroua (Cameroon) in 2013 found defaulting rates of 28%. Data previously published in Field Exchange (Issue 43) has shown the challenges faced by Concern-supported SAM treatment services in Nairobi (Table 1). Together this body of data suggests that compliance is actually lower (defaulting is higher) in urban environments.

Some of the most extensive and diverse information on defaulting in urban contexts has come from SAM treatment programmes in Port-au-Prince (Haiti). Inter-agency coverage assessments carried out in 2012 found a range of defaulting rates across different agencies (from 4% to 39%). What these assessments also found was that defaulting was more pronounced in programmes operating in urban slums. And this raises an important point: urban areas are not homogenous but are a patchwork of different socio-economic groups facing different barriers to access. Designing and developing SAM treatment programmes for an 'average' urban population risks the marginalisation of some of these populations.

Coverage rates in urban contexts

There is additional evidence available to suggest that urban SAM treatment services are not more accessible than rural programmes. A sample of over 100 coverage assessments (including rural, urban and camp programmes) carried out between 2003 and 2013 shows that on average, urban programmes perform only marginally better than rural programmes. To date, however, no urban programme (in emergency or non-emergency context) has recorded coverage rates above or equal to those stipulated by SPHERE.

Coverage assessments, however, have done more than simply challenging the assumptions about access to urban programmes. More importantly, they have provided a wealth of data that sheds light on why access to urban programme is challenging, and the extent to which specific characteristics of urban environments affect coverage. The data are helping to provide the necessary evidence to debunk four of the most common urban myths about SAM-treatment services.

Urban myths about access to urban SAM-treatment services

Myth 1: Greater awareness about services and SAM in urban contexts leads to earlier presentation and improved health seeking behaviour

Access and coverage of SAM-treatment services is heavily influenced by health seeking behaviour (HSB). HSB in turn is influenced by a caretaker's understanding of the causes of SAM (aetiology) and the recognition and trust in health facilities where treatment can be found. One of the most common misconceptions about SAM treatment in urban environments is that traditional beliefs about aetiologies and corresponding HSB generally found in rural areas do not extend to urban environments. In other words, caretakers living in urban areas are thought to be able to recognise SAM as a health condition that can and should be treated in health facilities.

The experience of implementing SAM treatment programmes in urban environments, however, has helped uncover a more complex picture of HSB. In Monrovia (Liberia) and urban Maroua (Cameroon), for example, knowledge of SAM as a unique health condition has been found to be generally limited. Teenage pregnancies and the isolation of many households from the broader, inter-generational network commonly offered by rural communities were found to be compounding factors reducing awareness about the condition. Traditional Health Practitioners (THPs) are active in Monrovia, providing both preventative as well as curative services for malnutrition. There is evidence to suggest that they represent, in many cases, a first tier in HSB. Similarly, religious leaders (including Christian Pastors) also have a central role in HSB. In Kinshasa City Province (DRC), pastors are frequently consulted as a result of the stigma attached to malnutrition which discouraged cases from presenting openly at the health centre. In Kisumu (Kenya), coverage assessments have shown how cultural beliefs and practices have contributed to late presentation of SAM cases in treatment centres. Wasted and oedematous children are thought to have been bewitched and thus the services of a traditional healer are often sought first. In Port au Prince (Haiti), malnutrition signs were clearly recognised by mothers, but they were generally understood as being the signs of a natural/mystic disease (djiok) caused by a curse or witchcraft associated with jealousy. The taboo associated with malnutrition led health staff to focus on the issue of 'low weight' instead of malnutrition to prevent defaulting. In spite of the large scale efforts to identify and treat malnutrition following the 2011 earthquake, continuing late presentation of SAM cases suggests limited changes to HSB. A similar lack of understanding of the causal factors and signs of malnutrition in Tadjourah town (Djibouti) meant that, although fever and diarrhoea were clearly seen as health conditions that could and should be treated in a health facility, the resulting wasting was not always perceived as needing treatment.

What these examples demonstrate is that the need to understand community perceptions, and invest in community sensitisation and active case-finding activities, is as pressing in urban environ- ments as it is in rural areas. Many SAM treatment services, including those in Kisumu (Kenya), have recognised the need to identify and incorporate THPs into their community mobilisation activities. Programmes must recognise actual HSBs linked to SAM treatment and develop ways of adapting service delivery to reflect these.

Myth 2: Fewer facilities can deliver acceptable access and coverage in urban contexts

Geographical coverage, often defined as the prop- ortion of health facilities in a given area offering a particular service, is key to ensuring optimal programme coverage. In rural settings, SAM treatment programmes generally aim to locate services in hard-to-reach areas, ensuring that travel times are as low as possible. In urban settings, however, higher population density and a comparatively smaller spatial area often leads to a programmatic assumption that fewer service delivery points (health centres, posts, clinics) can still deliver optimal programme coverage.

In Monrovia (Liberia), for example, a SAM treatment programme supported by ACF aimed to deliver services for the entire

Greater Monrovia by using only eight out of the 250 health facilities in the city. When evaluated in 2011, the services were only reaching an estimated 24.8% of SAM cases. In Nairobi (Kenya), SAM treatment services supported by Concern Worldwide initially increased from 30 to 54 Outpatient Therapeutic Programme (OTP) sites in recognition of the need to increase service delivery points. Even then, coverage assessments showed that access was still limited, leading to a decision to double the number of sites. Today, SAM treatment services are delivered through 80 facilities.

Finding the right number of service delivery points requires a degree of advanced planning and testing. The right framework does not always involve incorporating SAM treatment services into all available facilities, and the costs associated with this may make it unfeasible. What experience has shown, however, is that successful urban SAM treatment services require networking and interconnectedness between different facilities that can assist in the identification and referral of SAM to treatment sites. In Nairobi (Kenya), for example, the project has identified the need for children being treated by Outpatient Departments (OPD) and Comprehensive Care Centres (CCC) in urban areas to regularly screen children's mid-upper arm circumference (MUAC) and refer SAM cases to connected facilities offering SAM treatment services. Such partnerships require collaboration and coordination between different stakeholders. In Port-au-Prince (Haiti), there were six organisations delivering SAM treatment services. A coverage assessment carried out in 2012 found poor linkages between the different non-governmental organisation's (NGO's) programmes, resulting in community volunteers referring SAM cases to the health facility supported by the NGOs they were working with, instead of referring to the nearest one. The multiplicity and high turn-over of the programmes/interventions from different NGOs in different fields was also identified to be a confusing factor for the population. Both of these factors had an impact on the collective coverage of these interventions.

Myth 3: Opportunity-costs for attending SAM-treatment services are lower in urban contexts

SAM treatment has traditionally been implemented in rural, mostly-agricultural environments in which seasonality and labour needs had a significant impact on treatment compliance and defaulting rates. It is often assumed that the absence of agricultural duties grants urban residents greater flexibility and lower opportunity costs for attending SA-treatment services.

In Nairobi and Kisumu (Kenya), however, SAM treatment services found that caregivers are time constrained, making weekly OTP follow up visits a significant challenge. Like many fellow caretakers of SAM children in Monrovia (Liberia) and Port-au-Prince (Haiti), most come from lower socio-economic strata and make their living as petty traders. Their ability to attend regular, day-long SAM treatment services can represent a loss of anywhere from 16% to 20% of their weekly income. Generally speaking, the risk is even greater for those formally employed; repeated absences can result in the loss of their (rare and difficult to obtain) employment. The high opportunity costs manifest in the high defaulting rates (see above) and low compliance with referrals that are commonly recorded by SAM treatment services in urban settings. Opportunity costs for caretakers in urban contexts are equal or higher than in rural areas. SAM treatment programmes can successfully deal with this by introducing operational measures designed to reduce attendance and opportunity costs. Potential measures can include bi-weekly visits (to replace weekly attendance) and extending opening times to evenings and weekends.

Myth 4: Urban populations are static with limited or no movement or migration

The fourth and last common urban myth is that migration (short or mid-term) and population movement somehow affects urban populations less than those in rural areas. Once again, the experiences from the field tell a different story.

The population of urban slums in Nairobi and Kisumu (Kenya), for example, have been found to be very mobile. The forces that shape their movement are many, and include short-term relocation to rural areas, accidental destruction of their homes (e.g. fires) and the need to identify new credit facilities after exhausting previous ones. In Monrovia (Liberia) and urban Maroua (Cameroon), change of address and short and mid-term relocation have also been found to be very common as land-ownership is even rarer than in rural areas, and residents relocate whenever employment or housing opportunities change. In Les Cayes City (Haiti), admission from certain neighbourhoods were subject to high defaulting rates due to the dynamic populations that often move from and to the capital and rural areas. In Tadjourah (Djibouti), the start of the school holidays and the peak of the hot season result in frequent population movements from urban areas to cooler, upland, rural areas, contributing to defaulting. This migration between urban and rural areas has also been noted in other settings. In Bandundu and Kinshasa City provinces (DRC), peri-urban populations retain land for farming in rural areas or near their village of origin and family members often relocate to this land for extended periods, particularly during the planting and harvesting seasons. This mobility is vital in order for families to ensure a degree of self-sufficiency and thereby reduce expenditure on expensive foodstuffs sold in the town. In Kabul (Afghanistan), the size of the population living in informal settlements (KIS) varies depending on the season, with significant seasonal migration occurring during winter, when weather conditions deteriorate and employment opportunities decrease. During this period, families tend to migrate to the warmer eastern part of Afghanistan and to other big cities, leading to significant drops in attendance and increases in defaulting.

When migration and relocation occurs, caretakers seldom inform SAM-treatment service providers, thus pre- venting transfer to facilities closer to the new locations, and thus contributing to defaulting. Service providers must recognise that urban populations are not static; efforts must be made to constantly communicate to caretakers their right to be transferred to other facilities.

Conclusions

As SAM treatment services become more widely available in different contexts, new challenges will continue to emerge. The experiences of rolling out such services in urban contexts has shown that many of the underlying assumptions, or 'urban myths', that have traditionally shaped these interventions do not correspond to the more complex reality posed by urban populations. These urban features mean that some core elements of outpatient SAM treatment must not only be maintained (e.g. community sensitisation and case-finding), but also adapted to the specific challenges and opportunities of urban contexts. The experiences of many urban SAM treatment programmes are increasingly proving that improving access to services is not only a question of doing more (more service delivery sites, more information) but also of doing better. What is needed is the kind of participatory design that truly acknowledges the needs of the population it seeks to support. Changing attitudes about urban populations is only part of the challenge to improving access to SAM-treatment services. Gaining the political will to radically reshape treatment services to make them truly accessible to a complex, mobile, and often marginalised urban population remains the greatest task yet.

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High OTP coverage through the Ministry of Health in Chad

By Casie Tesfai

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The community-based management of acute malnutrition (CMAM) has three key public health determinants of impact. The first is *access*, which is the degree to which patients with severe acute malnutrition (SAM) access treatment (through the out-patient therapeutic programme – OTP) early on in the course of their disease, which leads to uncomplicated cases and results in early recovery[1].

The second key determinant of impact is *coverage*, which is the ability to reach as many severely malnourished children as possible. Coverage also depends on programme retention; from admission to cure (this is the absence of defaulting). A defaulter is a SAM case that should be in the programme, but is not. For rural areas, coverage should be at least 50%[2], which means that 50% of SAM cases in the targeted area are in the programme. Both access and coverage depend on a strong community outreach and referral programme[1].

The third key determent of impact is *effectiveness* of treatment, whereby we expect a minimum of 75% of SAM patients discharged as recovered (or cured). To ensure effective treatment, standardised treatment protocols should be followed, staff supervised and supplies available (including drugs and ready-to use therapeutic food (RUTF)). Effectiveness also depends on good coverage so that SAM patients are referred early and without complications which lead to better and faster outcomes. This also results in patient satisfaction and community acceptability[1].

Both coverage and effectiveness affect programme outcomes. If a programme has low coverage, even with adequate recovery (cure) rates, few severely malnourished children will be recruited leaving the possibility that many may deteriorate in the community[1].

IRC in Chad

Mongo District in the rural Guera Region of Chad falls in the Sahel belt across Sub-Saharan Africa where acute malnutrition levels remain chronically high. Due to critical levels of acute malnutrition and under 5 mortality rates, the International Rescue Committee (IRC) began supporting the Ministry of Health (MoH) in Mongo District, Guera Region in Chad in April 2012 in the integration of OTPs in each of the 17 MoH primary healthcare facilities (PHC) and in the Stabilisation Centre (SC) located in the Mongo District hospital. The programme was developed in accordance with the MoH and UNICEF to complement existing services to enhance the programme effectiveness and to increase coverage.

SQUEAC

OTP rural coverage in Chad was measured through the Semi-Quantitative Evaluation of Access and Coverage (SQUEAC), which covered all of Mongo District, excluding Mongo town.[3] SQUEAC relies on collecting a diversity of information, both quantitative and qualitative, from various sources and methods (triangulated) and collected exhaustively until no new information is found. Each piece of information is displayed visually (in a 'mind map') so that the complete picture of coverage is built up and new information is collected to investigate and verify different hypotheses as they are uncovered, such as reasons for defaulting. The final step of the SQUEAC is to conduct a coverage survey[4].

Average CMAM coverage

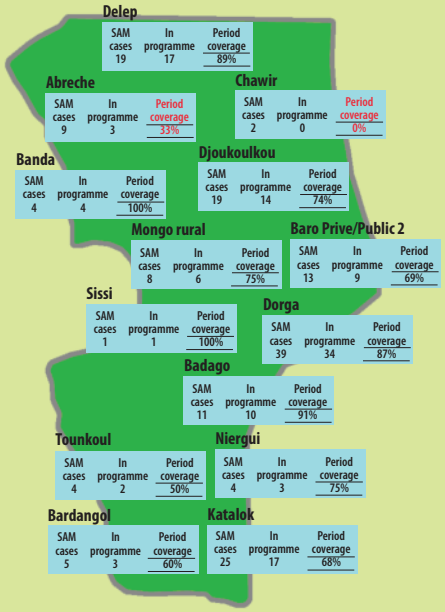
The average coverage of 13 SQUEAC coverage assessments from 2012 by the Coverage Monitoring Network (CMN)[5] was 40% with coverage in 12 assessments ranging from 14% to 59%. Only the refugee camps in Ethiopia achieved coverage higher than 75%. The average coverage of countries close to Chad, including Sudan, South Sudan and Burkina Faso, was 43% for the programmes that were assessed.[6] This is only a small example of SQUEAC coverage assessments, but what is becoming clear is that it can be challenging to achieve a high level of CMAM coverage.

Integration into MoH

There is currently notable commitment and recognition for the importance of integrating CMAM services into existing MoH structures to ensure uninterrupted services as emergencies abate and funding comes to an end.[7,8] As CMAM has been scaled up to more

1 Myatt M et al. 2012. Semi-Quantitative Evaluation of Access and Coverage (SQUEAC)/ Simplified Lot Quality Assurance Sampling Evaluation of Access and Coverage (SLEAC) Technical Reference. FHI 360/FANTA.
2 Sphere Project. Sphere Handbook: Humanitarian Charter and Minimum Standards in Disaster Response. 2011
3 Full report and methodology available upon request
4 See other articles in this issue of Field Exchange that describe SQUEAC.
5 http://www.coverage-monitoring.org/
6 Coverage Monitoring Network (2012). Visit http://www.coverage-monitoring.org/ and see news piece in this issue of Field Exchange.
7 Deconinck, H et al. (FANTA). Review of Community-based Acute Malnutrition (CMAM) in the post-emergency context: synthesis of lessons on integration of CMAM into National Health Systems: Ethiopia, Malawi and Niger (2008).
8 ENN. Government experiences of scale-up of Communitybased Management of Acute Malnutrition (CMAM). A synthesis of lessons. January 2012.

Figure 1: Spatial period coverage map for Mongo District



NB: 'In programme' includes both SAM cases (MUAC <11.5 cm) and recovering cases (former SAM cases that have already achieved a MUAC ≥ 11.5 cm but not yet discharged from the OTP)

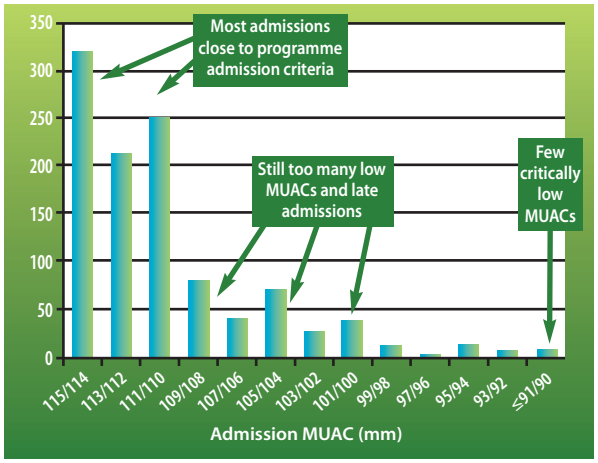
than 65 countries including Chad, community outreach – which is very important to ensure coverage – remains the weakest link. Many countries have not yet conducted coverage assessments to identify current programme barriers or whether programmes are meeting projected outcomes.[4] It's estimated that since 2009, the global scale-up of CMAM services has increased by more than 100%, where almost 2 million children have been treated for SAM. However it's estimated that this is less than 10% of the actual global SAM caseload.[9] Given the current global scale-up of CMAM, increasing coverage of existing services would reach even more SAM patients.

Support to the MoH in Chad

UNICEF supports the MoH in Mongo District through a combination of essential supplies, training, supervision and RUTF. The MoH provides a combination of essential OTP staff, essential drugs and supplies, supervision and storage. In partnership with WFP, the MoH also provides a food ration to the caretakers in the SC. It is important to note that the MoH is involved in leadership and coordination of CMAM at the district level and the nutrition focal point is involved in the activities of partners. IRC with donor support[10] provides a combination of support to the MoH which include the following key inputs:

- Technical staff for supervision and on the job training
- Trainings for MoH District staff on the national CMAM protocol
- Supervision, monitoring and evaluation and encouraging joint visits with MoH
- Supplies, materials and essential drugs
- Rehabilitation to enhance waiting areas for OTP patients
- Transport for referrals to the SC (or reimbursement of transport costs)
- Support to maintain the cold chain
- Mass sensitisation campaigns through local radio and theatrical groups to increase community awareness about the OTP programme
- Incentives for 200 community based volunteers (CBV) on a weekly basis who conduct routine screening and referral of SAM cases.

Figure 2: Timeliness of admissions – Mongo District OTPs



Period coverage in Mongo District

From the SQUEAC assessment conducted in Mongo District, the period coverage[11] was 74% with an OTP cure rate of 77%.[12] A total sample size of 163[13] current and recovering SAM cases were found in the coverage survey, where 123[14] were covered by the OTP.

The coverage for each OTP catchment area is shown in the map in Figure 1 of Mongo District where coverage is patchier in the northern part of the District.

OTP access

There is strong evidence that mortality in children substantially increases at a MUAC cut-off of 115 mm and this risk increases as the MUAC gets smaller.[15] It is therefore important that children are identified early on in the course of SAM

Figure 3: OTP performance indicators – Mongo District

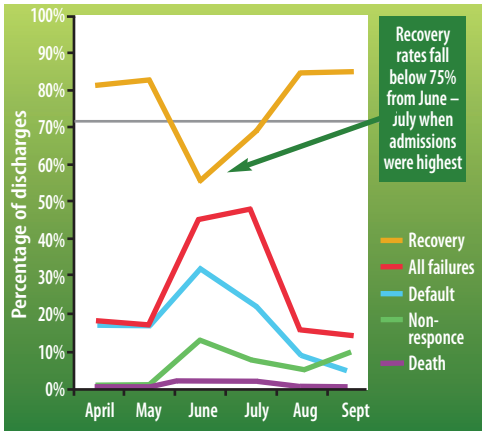
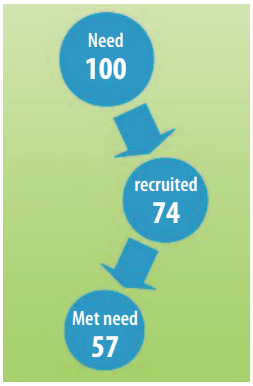


Figure 4: Overall OTP performance: the 'met need' of 100 SAM cases in Mongo District



[9] Treatment of 2 million cases out of a 20 million SAM caseload. Global caseload estimate based on weight for height z score.
[10] ECHO and OFDA
[11] Period coverage includes new SAM cases and recovering cases in the OTP
[12] Total cured divided by total discharged (not including transfers) since the start of the programme
[13] Total SAM cases (110) + recovering cases (53) = 163
[14] 70 SAM cases in OTP + 53 recovering cases in OTP = 123
[15] Myatt M, Khara T, Collins, S. A review of methods to detect cases of severely malnourished children in the community for their admission into community-based therapeutic care programmes. Food and Nutrition Bulletin, vol. 27, no. 3 (supplement), 2006
[16] Myatt M et al. 2012. Semi-Quantitative Evaluation of Access and Coverage (SQUEAC)/Simplified Lot Quality Assurance Sampling Evaluation of Access and Coverage (SLEAC) Technical Reference. FHI 360/FANTA

so that they have a lower mortality risk, lower complications and faster recovery. Figure 2 shows that the majority of admissions are early presenters as they are close to 115 mm and fortunately there are very few critically late admissions. Early treatment seeking and timely case finding results in a less complicated cohort of incident cases leading to faster recoveries[16], which is reflected in the short treatment episodes (average 5 weeks) and high recovery rates of the OTPs (77%).

OTP effectiveness

To ensure the OTP programmes achieve the met need of SAM patients, effectiveness is also important so that a high number are discharged from the programme recovered (cured). Figure 3 shows the OTPs in Mongo District meet the acceptable thresholds for effectiveness except during the peak in admissions from June to July, where coverage is likely to be lower. The peak in defaulting also correlates with the peak in women's labour demands as they prepare for the harvest. This is also the period when access is hindered by the rainy season which fills up the rivers and cuts off roads for the population to access the OTPs.

OTP barriers

It is important to note that often OTP staff perceived different reasons for OTP barriers (such as distance or poor treatment seeking behaviour) than those cited by the community or caretakers, which shows the importance of triangulation throughout the SQUEAC assessment. For example, distance was not found to be positively associated with defaulting as shown in Table 1.

The SQUEAC also allowed the community to provide thorough feedback on OTP programme performance and the barriers they face which is a valuable result of the assessment.

The reasons that were cited from caretakers who had a SAM child who was not currently in the OTP included the following: previous rejection; discharged as cured recently (so a relapse or an error); no time due to workload or social engagements; the child was found to be enrolled in the wrong programme (SFP) or the child had been previously discharged as a non-respondent.

The reasons for defaulting cited by caretakers included the following: no time due to workload or social engagements and lack of flexibility of the OTP to accommodate their absence; illness of caretakers; distance including nomadic movements and lack of access during the rainy season.

Conclusion

It was overwhelmingly observed that the community is well aware and in favour of the OTP services in Mongo District. Many caretakers reported that their children recover very quickly and gain weight when taking RUTF. This very good treatment seeking behaviour is evident in the fact that distance did not increase defaulting. Clearly caretakers are motivated and come from even very long distances.

The support to a network of 200 CBVs in Mongo District has clearly resulted in not only a motivated and active routine network of screening, but a network that has achieved mostly a very high level of coverage even in distant areas. This thorough case-finding and early treatment seeking results in mostly uncomplicated cases that can be cured quickly and cheaply.

The active participation and CMAM leadership of the MoH in Mongo District and Guéra Region has also created an enabling environment to achieve positive programme results, as well as support from partners to ensure a continuous pipeline of RUTF and supplies. The support and supervision to the OTP staff and to the CBVs has also helped achieve a high level of quality care and routine case finding and referral. As the MoH continues to increase their capacity and experience in CMAM, it will be interesting to explore more ways to increase the sustainability of what works.

Table 1: Distance and defaulting amongst OTP beneficiaries

Distance (time-to-travel)	Admissions	Defaulters	Grouped distance (time-to-travel)	Admissions	Defaulters	Defaulters/ Admissions x 100
10 minutes	205	20	≤30 minutes	276	25	9%
15 minutes	16	2				
20 minutes	7	0				
30 minutes	48	3				
45 minutes	10	3	> 30 minutes	458	24	5%
60 minutes	97	3				
90 minutes	69	5				
120 minutes	93	2				
150 minutes	21	0				
≥180 minutes	168	11				

Table 2: Priority issues to address to improve coverage

Recommendations	
Organisation	Reduce waiting time for beneficiaries
	Improve follow-up and referral between the OTP and SFP
Quality of programme	Ensure OTP staff are following the national treatment protocol
	Ensure admission criteria are adhered to so that no SAM patient is refused admission
	Implement a tally sheet for tracking community referrals and 'real cases' that meet the admission criteria
	Follow-up all early defaulters to ensure timely re-admission
Communication	Improve the communication between health personnel and beneficiaries
	Ensure flexibility of OTP staff to meet needs of beneficiaries
Access	Develop a strategy to prevent defaulters due to lack of access during the rainy season
Coverage	Improve coverage of northern and southern OTP catchment areas
	Enhancing identification of SAM cases through active and adaptive case finding including local terminology and assistance from key informants

Figure 4 shows the overall performance of the OTP programmes in Mongo District combining the effect of both coverage and effectiveness. This is the 'met need' of 100 SAM children given the current OTP coverage and recovery rates. The OTPs in Mongo District with a coverage rate of 74% and an average recovery rate of 77%, has a met need of 57 out of 100 SAM children.

Recommendations

To sustain and improve the current level of coverage, there are a few priority issues to be addressed, i.e. barriers for SAM cases not currently in the OTP (see Table 2). Early defaulters should also be prioritised and followed-up immediately to ensure a timely recovery. Many discharged caretakers refused to be followed-up in the supplementary feeding programme and a strategy should be developed to ensure adequate follow-up of SAM cases to avoid relapses.

The results of the SQUEAC assessment were presented to the MoH and partners in Mongo District who recommended that partners and donors in Chad invest in more coverage assessments. Furthermore, there is a need to develop a technical consortium to share experiences of what works in the country context so that this can be replicated with a view to scale-up and achieve good coverage in other parts of Chad.

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