



Semi-Quantitative Evaluation of Access & Coverage (SQUEAC)

**Greater Monrovia
LIBERIA**

February – April 2011



ACRONYMS

ANDP	Aid for the Needy Development Programme
MoHSW	Ministry of Health and Social Welfare
OIC	Officer in Charge
OTP	Outpatient Therapeutic Programme
RUTF	Ready-to-Use Therapeutic Food
SQUEAC	Semi-Quantitative Evaluation of Access & Coverage
TFC	Therapeutic Feeding Centre
THPs	Traditional Health Practitioners

EXECUTIVE SUMMARY

Between February and April 2011, a Semi-Quantitative Evaluation of Access & Coverage (SQUEAC) was carried out by ACF, the Ministry of Health and Social Welfare and ANDP in Greater Monrovia (Liberia). The SQUEAC evaluation was designed to provide an estimate of city-wide coverage as well as key barriers/boosters to access affecting the programme. The evaluation used a simplified version of the standard, 3-stage, Bayesian beta-to-binomial conjugate analysis. Programme coverage in Greater Monrovia was estimated to be:

Point Coverage	24.8% (15.6% - 37.0%)
Period Coverage	48.6% (38.6% - 58.8%)

Coverage was determined to be low across the entire city, with no identifiable variations across its different communities/sub-communities. Initial assumptions about high programme coverage in areas surrounding long-running OTPs were found to be inaccurate. The decentralisation of the programme through an increase in OTP locations has contributed positively to programme uptake, but limited linkages with other health facilities in Greater Monrovia, and the limited integration of services into MoHSW structures/health facilities, has hampered access to the programme. Community awareness about the programme, however, was found to be the single most significant barrier to access, with communities showing little/no knowledge about the programme, its services, location or intended beneficiaries. RUTF stock outs and the underreporting of defaulting in the programme has also made it difficult for the programme to take remedial action when/where needed. The evaluation recommends that; 1) the programme moves towards a more profound integration of CMAM into MoHSW services; 2) complements and supports this integration with a robust sensitisation strategy and; 3) ensures more regular monitoring of programme activities.

BACKGROUND

ACF has been implementing a therapeutic feeding programme in Greater Monrovia since March 2006. During this period, the involvement of ACF has evolved from direct implementation of inpatient facilities, to the introduction of outpatient care, and finally to the support of a local implementing partner, Aid for the Needy Development Programme (ANDP). The ultimate objective of the programme is to enable the Ministry of Health and Social Welfare (MoHSW) to treat acute malnutrition at community level. The SQUEAC evaluation came at a crucial moment in this process: as such, it was expected to not only provide a comprehensive picture of the factors affecting coverage, but also a robust baseline from which to measure the future progress of the programme. The decision to carry out a comprehensive survey (including city-wide sampling in Stage 3) as part of this SQUEAC was in response to this dual objective.

This also represented the first attempt by an ACF programme to carry out a SQUEAC evaluation without external technical support or individually assigned surveyor. Instead, the entire process relied on the human resources available in the organization at country and international level. The evaluation was carried out by ACF-Liberia, ANDP and Ministry of Health staff, with the support of

ACF-UK’s Evaluations, Learning & Accountability Unit. In order to ensure the viability of this approach, a simplified, easy-to-use version of SQUEAC was trialled; a version designed to facilitate the implementation and reporting of findings. This trial of the simplified version also allowed the organisation to explore the flexibility of the SQUEAC methods, and in particular, the capacity of field teams to implement and integrate the methodology and its associated activities as a monitoring tool. This exercise emphasised simplicity and practicality, without compromising the depth or quality of the data collected.

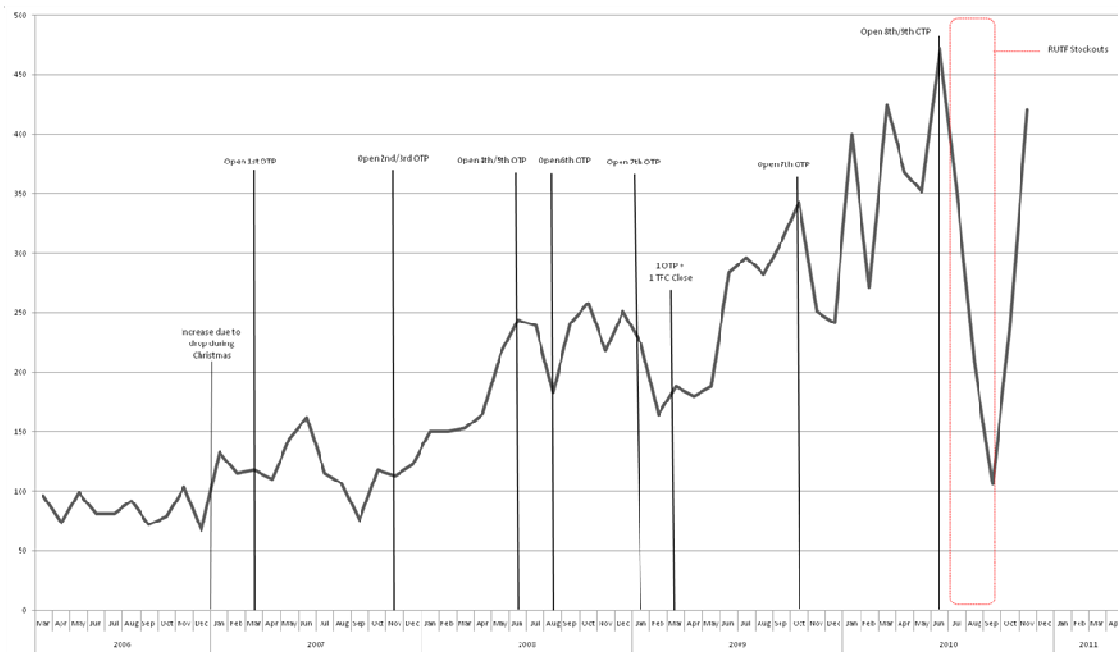
1. STAGE ONE

The objective of Stage One was to identify areas of low and high coverage and the reasons for coverage failure using routine programme data or easy-to-collect quantitative and qualitative data.

1.1. Programme Admissions (Overall Numbers & Trend over time)

Since it first opened in March 2006, the ACF therapeutic feeding programme in Greater Monrovia has admitted over 11,296 children. The programme began as an (ACF-implemented) TFC but it has gradually expanded: through the decentralisation of care and the implementation of an Outpatient Therapeutic Programme (OTP), but equally through the handing over of the implementation of activities to the local partner (ANDP). Programme admissions have reflected these changes and expansions, primarily through a positive upward trend of admissions over time. Key events (including the opening/closure of sites) were clearly identified by the ANDP/MoHSW/ACF team (see Figure 1). The most significant event in the calendar (the drop in admissions in the second half of 2010) was identified as a direct result of RUTF¹ stock outs.

Figure 1. Programme Admissions over Time



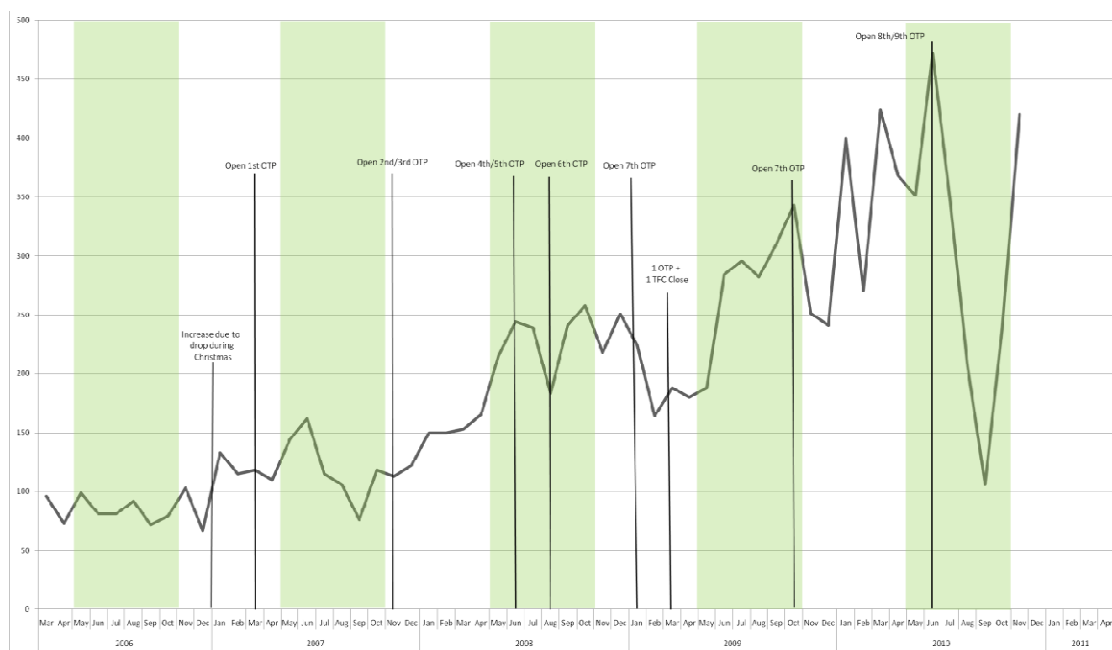
1.2. Admissions vs. Needs

The ANDP/MoHSW/ACF team identified the months between May and October (rainy season) as the yearly period when needs were greatest (i.e. peak of childhood, and malnutrition-related, illnesses).

¹ ©Plumpynut is the commercial name of the RUTF used in the Greater Monrovia programme.

Programme data shows that in the first two years of the programme (2006 & 2007) the mostly TFC-based programme did not admit more children during the yearly peaks (not responding to need). In subsequent years (2008 & 2009) with the decentralisation of care through the OTPs, programme admissions did increase during these peaks (responding to need). In 2010, because of RUTF stock outs, admissions dropped during the period when admissions should have been at their highest (see Figure 2). This suggests that not only has the programme not responded to need, but also that the stock outs were likely to have had a much bigger impact in terms of coverage than originally anticipated.

Figure 2. Admissions vs. Need (Disease Calendar)



1.3. Programme Exits

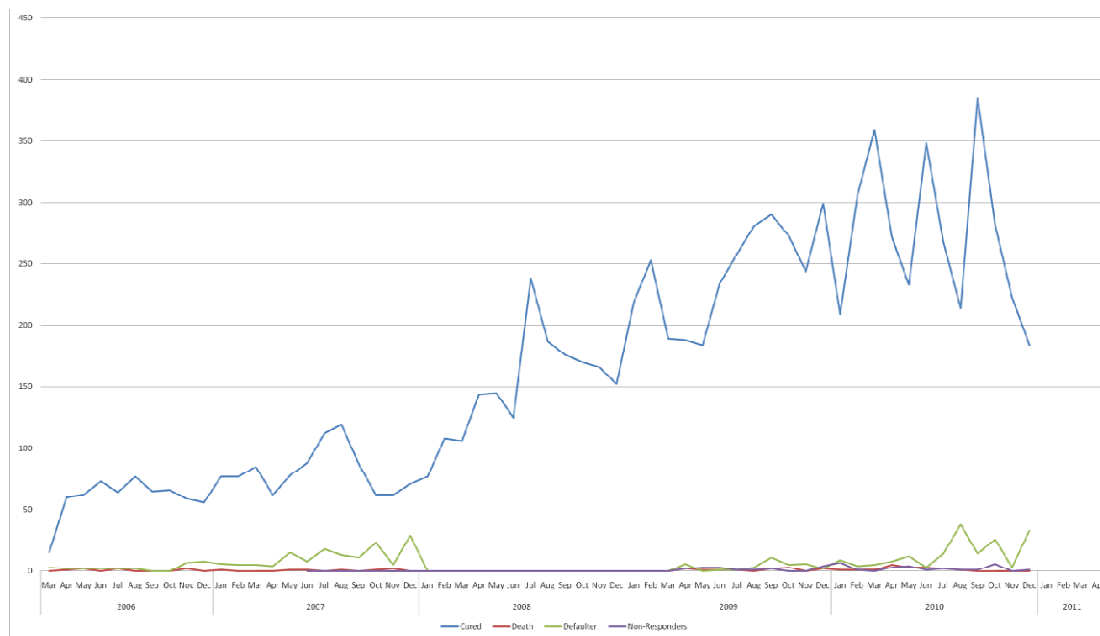
A review of programme exits dating back to 2006 showed high cure rates (95.4%), and low defaulter (3.7%), mortality (0.4%) and non-responder (0.4%) rates, all in line with SPHERE minimum standards. When programme exits were analysed over time, the rise in defaulters in second semester of 2010 confirmed previous indications of the negative impact of RUTF stock outs (see Figure 3). The concurrent decrease in cure rates was also connected to the stock outs, as well as to changes introduced by UNICEF to the national nutrition protocols (and corresponding exit criteria). Programme exit data is, on the surface, very positive and suggests that coverage rates should be high. Nevertheless, defaulter data does not correspond to anecdotal data on the high opportunity-costs of attending the programme in Monrovia, nor with the performance of other urban CMAM programmes and the high defaulting commonly recorded. The investigation therefore turned to a review of OTP records.

1.4. Review of Discharged (OTP) Cards

A total of 1,310 OTP (discharged) cards were reviewed (see Table 1), representing 11.6% of all programme admissions since 2006 (B1). Of those, only 46 or 3.5% were officially recorded as defaulters (C1). Of those, the large majority (93.4%) had defaulted before completing six weeks of treatment (C2). Whilst stock outs had led to some cases of defaulting, official records suggest that other factors play a more significant role (C5). When the sample of OTP records was analysed in detail, however, a total of 106 “hidden defaulters” (exits classified as something other than defaulter) were found (D1). The large majority of these “hidden” defaulters (86.79%) were in fact

linked to stock outs (**D2**). The review of OTP cards concluded that; 1) the 2010 RUTF stock outs had led to more defaulting over the last nine months than originally perceived by the programme, but; 2) that there was no evidence to suggest that defaulting rates prior to that had in fact been higher than originally reported².

Figure 3. Programme Exits (actual numbers)



1.5. Qualitative Data

As part of the gathering of qualitative data, members of ANDP, the Ministry of Health and Social Welfare (MoHSW), Officers in Charge (OICs) at Health Centres and caretakers of children in the programme were interviewed, both formally and informally. The investigation focused on four key areas

1.5.1. Causes of Malnutrition

A number of factors were highlighted when explaining malnutrition in Greater Monrovia. But perhaps most important of all, were feeding habits. Breastfeeding in particular was reported to be practiced by only a small proportion of the population. This was closely linked to the prevalence of young mothers, many of whom engage daily in petty trade, forcing them to leave children from an early age with their grandmothers or with older siblings. This pattern reduces the capacity of young mothers to breastfeed, and contributes to the premature introduction of other (mostly solid) foods. This pattern, coupled with a reportedly unbalanced diet and regular exposure to diseases (characteristic of overpopulated urban/peri-urban environments) makes children particularly vulnerable to malnutrition in Greater Monrovia.

² Projections made using non-stock out related defaulting yielded similar to the defaulting numbers officially recorded by the programme (**E5** vs. **A2**)

Table I. OTP Discharged Card (Defaulter Data)

A	Databases	#	%
A1	Total Admitted	11296	
A2	Total Defaulters (Recorded in Database)	374	3.31
B	Patient Record Analysis		
B1	Total Record Reviewed	1310	11.60
C	Number of Recorded Defaulters		
C1	Number of Defaulters adequately recorded	46	3.5
C2	Number of Early Defaulters (<6 weeks)	43	93.48
C3	Number of Late Defaulters	3	6.52
C4	Number of Defaulters linked to stockout	10	21.74
C5	Number of Defaulters linked to other factors	36	78.26
D	Number of Hidden Defaulters		
D1	Number of Hidden Defaulters	106	8.09
D2	Number of Hidden Defaulters linked to stockouts	92	86.79
D3	Number of Hidden Defaulters mislabelled	14	13.21
E	Number of Actual Defaulters		
E1	Number of Actual Defaulters (Recorded + Hidden)	152	11.60
E2	Number of Actual Defaulters (not linked to stockouts)	50	32.89
E3	Number of Actual Defaulters (linked to stockouts)	102	67.11
E4	Projection Based on All Defaulters	1310.68	
E5	Projection Based on Defaulters (not linked to stockouts)	431.15	

1.5.2. Health Seeking Behaviour

There are multiple factors influencing caretaker's decision of where and when to seek care for acute malnutrition. Alternative paths to treatment include Traditional Health Practitioners (THPs), religious leaders, private health facilities and inpatient hospitals. The timing of health seeking behaviour is particularly important, not only because early presentation ensures higher cure rates, but also because it suggests that a programme is known, trusted and – perhaps most importantly – accessible to the population. The information collected as part of this SQUEAC provides a complex picture; many of the cases arriving at OTP are severely wasted, suggesting late presentation. If late presentation is indicative of the opportunity costs linked to programme attendance, this pattern suggests that there are significant numbers of less severe (but equally eligible) cases in the communities that are not being brought to the programme.

Self-referrals, transfers from other health centres/hospitals and referrals by home visitors reportedly represent 50, 30 and 20% respectively of all programme admissions. In CMAM programmes where community awareness about the programme is widespread, high rates of self-referrals can signal higher coverage (i.e. communities are aware of a service and chose to use it). In programmes where awareness is low (programme uptake is dependent on active case-finding) low referrals from outreach staff tend to signal low coverage. The Greater Monrovia programme appears to be in this second group.

1.5.3. Barriers to Access

The key to understanding health seeking behaviour in Greater Monrovia is to recognise the impact of the urban environment and the role of opportunity-costs in particular. In rural settings, programme attendance is generally influenced by household and agricultural duties and activities,

both of which can potentially be reorganised around OTP visits. In urban environments, the allocation of a full working day to OTP visits represents a direct loss of income for women dependent on daily petty trade. The costs for those working on official/semi-official jobs are even higher. This effectively reduces the coverage/increases defaulting in urban programmes. Each context, however, presents individual challenges or barriers to access. In the case of the Greater Monrovia programme, the main barriers to access identified during this evaluation have been summarised in Table II.

Table II. Reasons for Defaulting & Non-Attendance

Awareness about the programme	Awareness about the programme was found to be low, even in areas surrounding OTPs. Many of the cases admitted into the programme from nearby areas have not come on their own accord, but instead, did so after being identified and referred by programme staff and/or caretakers of children in the programme. Awareness seems to be closely linked to visibility; the absence of any regular presence by programme staff at community level is contributing to a perception that the programme is no longer running. The lack of integration of CMAM services into the health facilities themselves has also meant that this continues to be seen as an external (and therefore transient) programme, rather than a regular feature of the health centres. This, compounded by the absence of any consistent community-presence, has combined to create uncertainty about whether or not the services/programme are available.
Child not recognised as acutely malnourished	Knowledge about severe acute malnutrition was 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.
Trust in Health Centre Care	Poor interface between health centre staff and patients was also identified as a barrier to access. Mothers of malnourished children are often publicly berated for the child's condition, contributing to the shame and stigma associated with malnutrition. This perception may not be linked to the specific health centres in which the programme operates, but reportedly affects all/any health centre-based programme. In addition, trust in the availability of care is low, in particular in public health facilities that are commonly understaffed and/or undersupplied.
Number of Health Facilities	CMAM services are available in only 8 out of the over 250 health facilities in Greater Monrovia. The high number of facilities presents a clear opportunity for identifying cases. But so far the absence of a robust web of interconnected facilities capable of identifying and referring cases has limited enrolment in the programme. In some facilities (e.g. Pipeline) linkages with nearby hospitals and Health Centres is purportedly stronger, but it remains ad hoc and punctual.
Admission Schedule	Health centres in which OTPs operate are able to screen and identify children daily, but admission into the programme only takes place on a weekly basis (when ANDP teams visit the centres). The inability of the facilities to enrol children into the programme on first contact leads caretakers to seek care elsewhere or to desist altogether. This is intrinsically connected to the running of OTP services parallel to, rather than as part of, the health services in participating facilities.
Stigma	Shame or stigma about malnutrition is reportedly high, in particular, amongst younger mothers. This is compounded by the attitude of health centre staff, and together, contributes to late/limited presentation of cases.
Trust in Traditional Health Practitioners (THPs) and Religious Leaders	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 health seeking behaviour. Similarly, religious leaders (including Christian Pastors) also have a central place in the paths to treatment.
Relocation (inter-city temporal migration)	Change of address and short and mid-term relocation within Greater Monrovia is common. When these occur, caretakers seldom inform the programme, thus preventing transfer to facilities closer to the new locations, and thus contributing to defaulting.

1.6. Areas of High and Low Coverage

Based on the information collected in Stage One, the evaluation concluded that coverage is not homogenous in Monrovia. Instead, the evaluation hypothesised that coverage is determined by three factors:

- **Distance** to OTP
- **Awareness** about the Programme
- **Linkages** with other health facilities

The hypothesis was therefore that

- **Coverage is high** in areas near health facilities with OTP, in which awareness is high and that have linkages with other health facilities (for referral of cases)
- **Coverage is low** in areas far from health facilities with OTP, and awareness is low and that have no linkages with other health facilities (for referral of cases)

To test this hypothesis, four areas were selected according to the criteria

Table III. Criteria for Selection of High & Low Coverage Areas

		Distance	Awareness	Linkages
High Coverage Area	Area H.1	Low	High	High
	Area H.2	High	High	High
Low Coverage Areas	Area L.1	Low	Low	Low
	Area L.2	High	Low	Low

Two areas of Monrovia were selected based on the above criteria: Pipeline A (**H.1**) and New Georgia (**L.1**). Pipeline A is the longest-running OTP facility in the city, and New Georgia is one of the most recently added (2010).

2. STAGE TWO

The objective of Stage Two was to confirm the location of areas of high and low coverage and the reasons for coverage failure identified in stage one (above) using small area surveys.

Two teams (6 people each) were assembled for these small areas surveys. New Georgia was sampled in one day, whilst Pipeline A was sampled over 2 days. The teams used a case definition that included both marasmus and kwashiorkor cases, as well as children in the programme but no longer acutely malnourished (recovering cases). The teams used a combined active/adaptive & house-to-house case-finding strategy in recognition of the challenges faced when sampling in urban environments. They also relied heavily on pictorial representations to establish the type of children being sought. The main findings from these small-area surveys are included in Table IV.

Table IV. Stage Two - Small Area Survey (Findings)

Low Coverage Area (<i>New Georgia</i>)	Total Number of SAM Cases Found	4	
	SAM Cases in the programme	0	
	SAM Cases not in the programme	4	Relapse
			Defaulter (Child did not Improve)
			Defaulter (Change of Address)
		Child Not recognised as Malnourished	
High Coverage Area (<i>Pipeline A</i>)	Total Number of SAM Cases Found	10	
	SAM Cases in the programme	1	
	SAM Cases not in the programme	9	Relapse
			Defaulter (Change of Address)
			Defaulter (Refused TFC transfer)
			Child Not recognised as Malnourished
			Child Not recognised as Malnourished
			Not Aware of the Programme
			Not Aware of the Programme
		Not Aware of the Programme	

Based on the information collected, coverage was classified against a threshold of 40%³. A decision rule (d) was calculated using the following formula:

$$d = \left[\frac{n \times p}{100} \right]$$

n = total number of cases found

p = coverage standard set for that area

The results of coverage classification are presented in Table V.

Table V. Small Area Survey (Coverage Classification)

Low Coverage Area (<i>New Georgia</i>)	Coverage standard (p)	40%	Number of cases covered (0) is < decision rule (2) Coverage is <40%
	Decision Rule (d)	[n x 40/100]	
		[4 x 0.4]	
		1.6	
	d	2	
Cases covered	0		
High Coverage Area (<i>Pipeline A</i>)	Coverage standard (p)	40%	Number of cases covered (1) is < decision rule (4) Coverage is <40%
	Decision Rule (d)	[n x 40/100]	
		[10 x 0.4]	
		4	
	d	4	
Cases covered	1		

The small-area surveys revealed that; 1) the hypothesis made incorrect assumptions about distance and levels of awareness in the programme (in long-running sites in particular); 2) coverage is low across Greater Monrovia, and; 3) awareness (about malnutrition and the programme), defaulting and limited linkages between health facilities are primary barriers to access.

³ The threshold was set at 40% based on discussions about most likely coverage in the programme. The SPHERE minimum standard for urban contexts (70%) was considered unsuitable.

3. STAGE THREE

The objective of Stage 3 was to provide an estimate of overall programme coverage using Bayesian techniques. To do this, the evaluation relied on the standard Bayesian beta to binomial conjugate analysis.

3.1. Developing a Prior

The information collected was segregated between factors that reflect positively about programme coverage, and factors that reflect poorly. Each factor was ranked using a simple (5-3-1) point system⁴. All positive factors were added to the minimum possible coverage (0%) whilst all negative factors were subtracted from a highest possible coverage (100%).

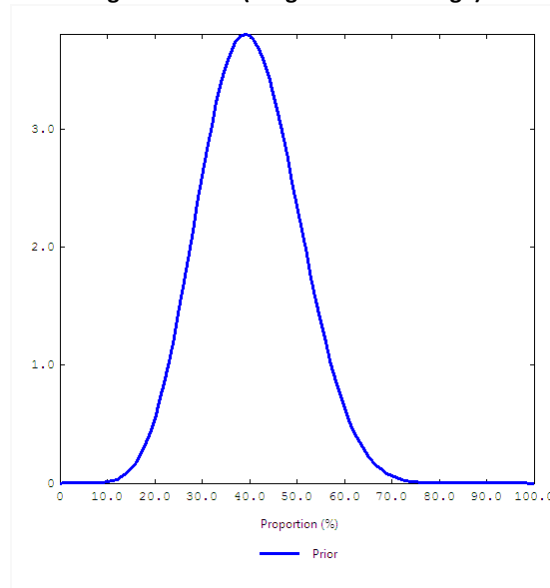
Table VI. Measuring Contributing Factors (Prior)

Positive Factors	Value		Negative Factors
Admissions (over time)	5	5	Linkages with other Health Facilities
Exits (high cure, low death rates)	5	5	Awareness about the programme
		5	Opportunity Costs
		5	Impact of Stockouts
		5	Health Seeking Behaviour
		3	Late Presentation
		3	Admission Schedule
		1	Attitude of Health Centre Staff
		1	Stigma/Shame (about Malnutrition)
		1	Admissions (vs. Needs)
	10	34	
Added to Minimum Coverage (0%)	10	66	Subtracted from Maximum Coverage (100%)
Median	38		
α value	8.9	13.3	β value

An average was calculated and used as the median for a distribution curve (Prior) plotted using the BayesSQUEAC Calculator (see Figure 4).

⁴ An alternative raking systems using the same value for all identified factors (3) was also tested, producing comparable results.

Figure 4. Prior (Programme Coverage)



3.2. Sampling Methodology

3.2.1. Minimum Sample Size

To estimate the minimum number of cases (children) needed in the small-area survey (n), the following formula was used:

$$n = [S - (\alpha + \beta - 2)]$$

Using the α (8.9) and β (13.3) values (see section 3.1), we get

$$n = [S - (8.9 + 13.3 - 2)]$$

$$n = [S - 20.2]$$

$$n = [57 - 20.2]$$

$$n = 36.8$$

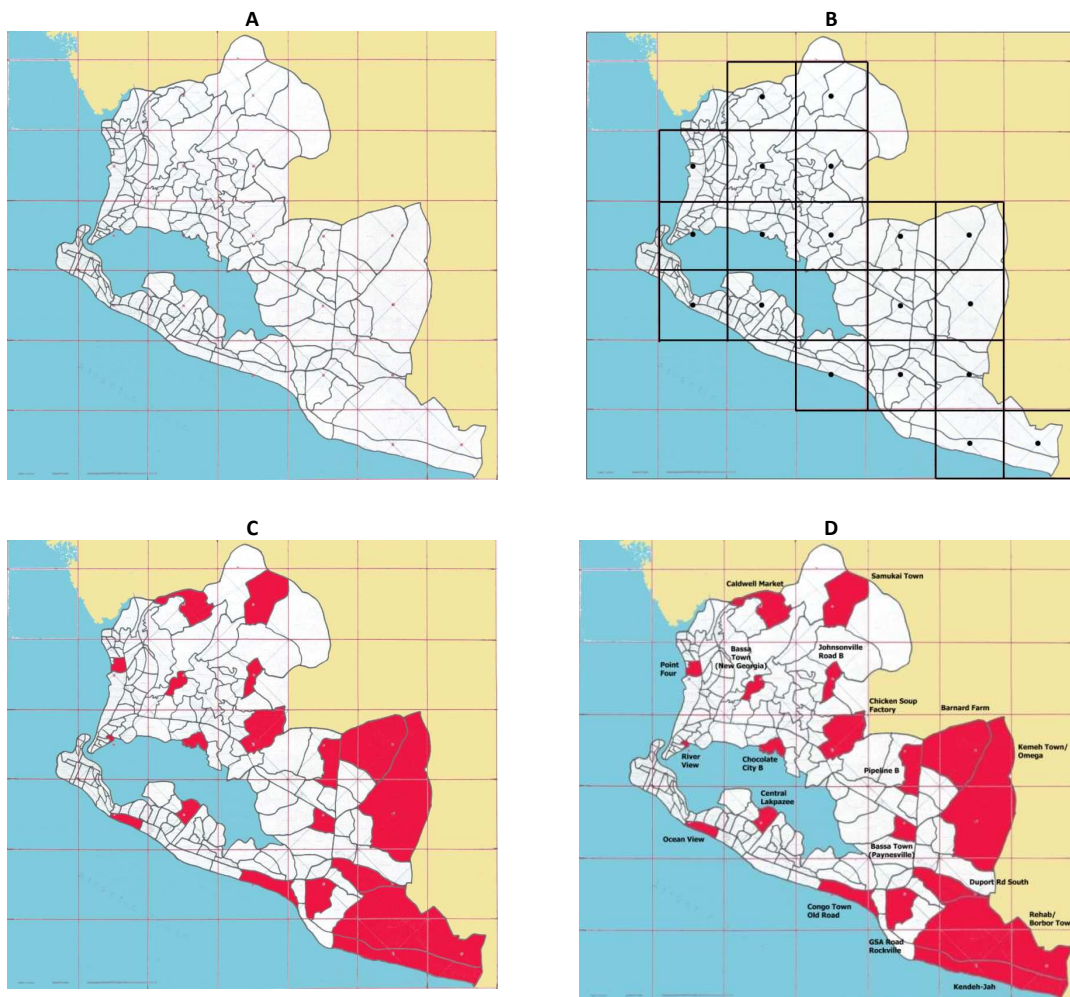
$$n = 37$$

3.2.2. Spatial Representation

In order to achieve spatial representation, the Stage Three survey plotted a 3.5 x 3.5km grid over a map of Greater Monrovia (Figure 5.A). In total, 19 quadrats were selected to cover all primary areas of the city (Figure 5.B), excluding quadrats made up of less than 50% land mass. Community areas closest to the centre of the quadrat were selected for the survey (Figure 5.C). These 19 community areas were further divided into a list of its composite sub-communities, to identify comparable primary sampling units (PSUs) and to ensure that sampling could be completed within the specified time period. In order to determine which PSUs to sample, a target number of PSUs was first set (20). The total number of PSUs (95) was divided by the target number of PSUs selected (20). The resulting number (5)⁵ was used as the selection interval. In order to randomly determine the starting point for selection of PSUs to sample, a number between 1 and the resulting interval number (5) was selected using a simply coin toss. The resulting number of heads (3, out of 4 tosses) was added to the first number (1) to identify the point in the list of PSUs (4) from which to start the selection. Every fifth PSU was selected, resulting in a total of 19 sub-communities.

⁵ Round up of actual result (4.75)

Figure 5. Sampling Areas (Greater Monrovia)



Stage Three used a combined active & adaptive case-finding & mass-screening approach to ensure that all PSUs were sampled exhaustively. The actual Stage Three small-area survey was carried out over nine days (April 2nd - 11th) by four (5 person) teams, a general supervisor and two nutrition programme managers. Case definition and methodology used in Stage Two was replicated in this stage of the process.

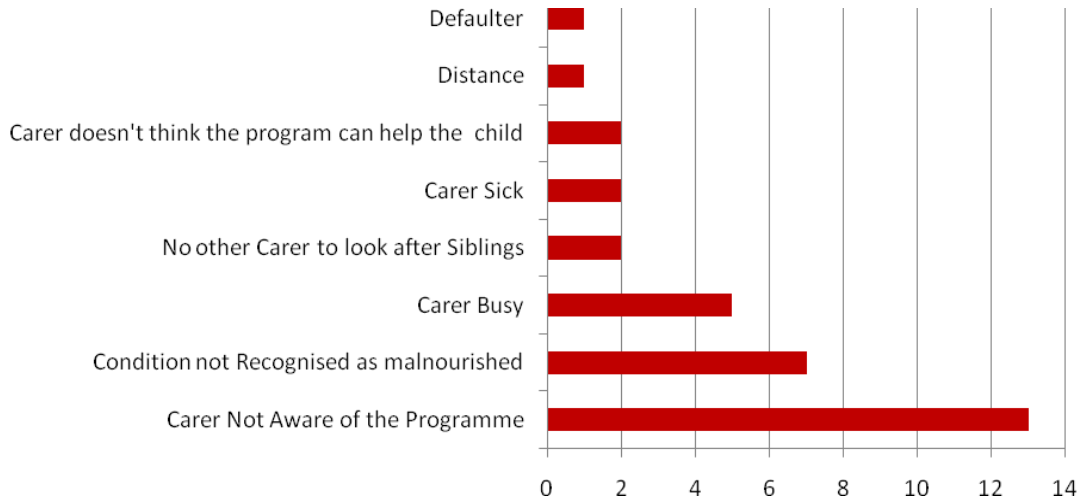
3.2.3. Small Area Survey Results

Key findings of the small area surveys can be found in Table VII. Main reasons for non-attendance (based on short questionnaires conducted with carers of current (SAM) cases not attending the programme) are included in Figure 6.

Table VII. Stage Three (Small Area Surveys) Main Findings

Type of Cases	Number of Cases
Number of current (SAM) cases	40
Number of current (SAM) cases attending the programme	7
Number of current (SAM) cases not attending the programme	33
Number of recovering cases attending the programme	28

Figure 6. Main Reasons for Non-Attendance



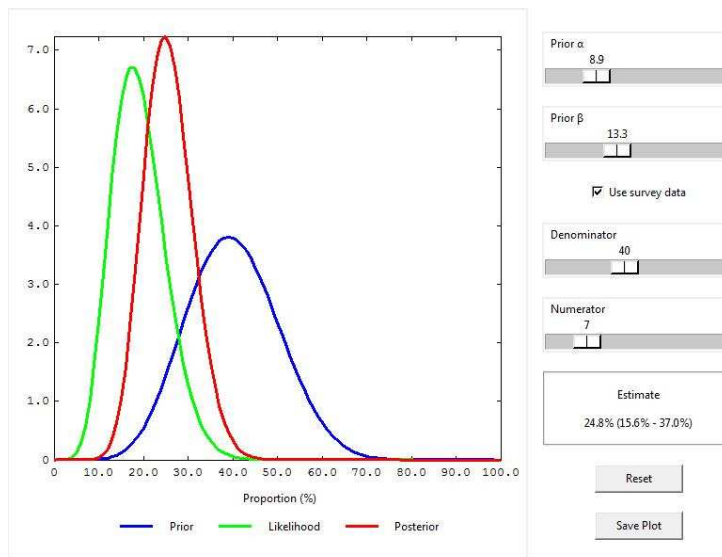
3.2.4. Overall Coverage Estimation

Point Coverage

Provides a snapshot of programme performance and places a strong emphasis on the coverage and timeliness of case-finding and recruitment. To calculate point coverage, the numerator and denominator were selected from the results of the small-area surveys using the formula

$$\frac{\text{No. of current (SAM) cases attending the programme}}{\text{No. of current (SAM) cases}}$$

Selected data was used as denominator (40) and numerator (7) when inputted into the BayesSQUEAC Calculator.



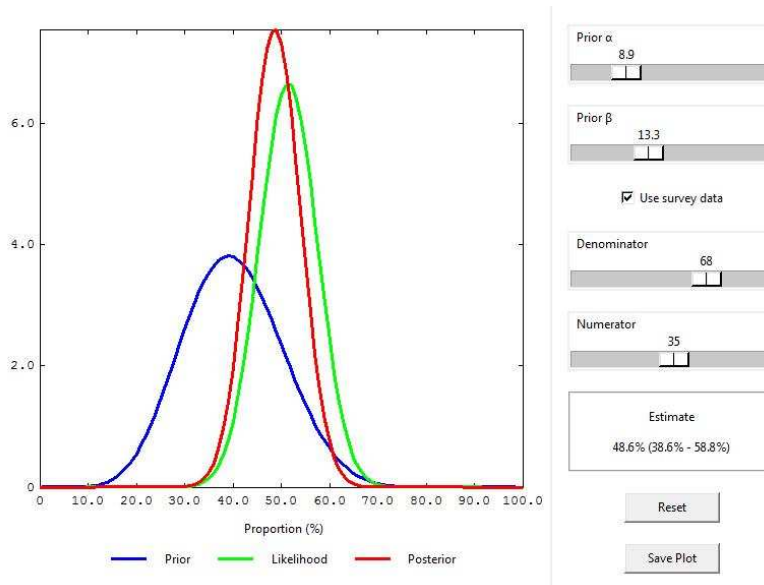
Based on the existing prior and small area survey (likelihood) point coverage was estimated to be **24.8% (15.6% - 37.0%)**

Period Coverage

Includes recovering cases; cases that should be in the programme because they have not yet met the discharged criteria. To calculate period coverage, the numerator and denominator were selected from the results of the small-area surveys using the formula

$$\frac{\text{No. of current (SAM) and recovering cases attending the programme}}{\text{No. of current (SAM) and recovering cases attending the programme} + \text{No. of current (SAM) cases not attending the programme}}$$

Selected data was used as numerator (7+28=35) and denominator (35+33=68) when inputted into the BayesSQUEAC Calculator



Based on the existing prior and small area survey (likelihood) period coverage was estimated to be **48.6% (38.6% - 58.8%)**

4. CONCLUSIONS & RECOMMENDATIONS

- Since it first started in 2006, the Monrovia programme has admitted and successfully treated a high number of cases. The operational changes made over the years, and the transition from TFC to CMAM, has led to significant and noticeable increases in programme uptake. The number of cases admitted is directly proportional to the number of health facilities in which CMAM services are available. The number of health facilities in which treatment is available must be scaled up if the intervention is to reach optimal coverage and increase its overall impact.
- All performance indicators (cured, death, non-responders and defaulters) are all above their corresponding SPHERE standard. There is, however, evidence to suggest that defaulting is underreported. Poor record keeping and limited supervision are limiting the capacity of the programme to identify peaks/negative trends in programme attendance. This is an essential step in setting the necessary processes in motion to identify and address barriers to access. Stronger and more regular programme monitoring is urgently required.
- Awareness about the programme remains the most significant barrier to access. Continuous availability of treatment over the years has done little to increase community awareness

about the programme, even in areas where the outpatient programme has been operational since 2007. The limited integration of CMAM services has played a crucial role in community awareness: CMAM, when known, is perceived as an external, ANDP/ACF project, rather than a (permanent) service offered by health facilities themselves. The integration of CMAM into regular programming at Health Facilities must be accompanied by a robust and regular community sensitisation strategy.

- The discrepancies between point coverage (24.8%) and period coverage (48.6%) are common in programmes where case-finding is weak. In such circumstances, point coverage is widely considered to be a better indicator of programme coverage. The coverage achieved is lower than original estimations. These estimations overestimated programme awareness, and were largely based on the areas of operation rather than Greater Monrovia as a whole. Data collected in Stage Two and Three of the evaluation suggest that coverage is low across the city with no distinct areas of higher coverage. Integration of CMAM into health facilities, stronger linkages with neighbouring facilities, closer monitoring and a concerted sensitisation approach will prove essential to improve coverage in the future.
- The experiences from Greater Monrovia demonstrated that ACF teams are in a capacity to successfully carry out SQUEAC evaluations with existing human and technical resources. The experience also showed that sampling in urban environments can be achieved, but early preparation – including the identification of communities, sub-communities and all other relevant geopolitical subdivisions - must be carried out to ensure that small-area surveys are adequate and exhaustive.

Annex I. Complete List of Sub-Communities (Primary Sampling Units)

Districts	Larger Communities	Sub Communities	Stage 3 PSU
Paynesville	Kenedjah	Block A	
		Block B	
	Rehab Borbor Town	Block A	
		Block B	1
		Block C	
		Block D	
		Block E	
		Block F	
		Block G	2
	GSA Road, Rockville	Zone one	
		Zone Two	
	Duport Road South	just one large Zone	
	Bassa Town (Near Red light)	Block A	
		Block B	3
		Block C	
		Block D	
		Block E	
	Kemah Town / Omega	New Kemah Town	
		Old Kemah Town	4
	Pipeline B	Block D	
		Block E	
		Block F	
		Block G	
	Bernard Farm	Block A	5
		Block B	
		Block C	
		Block D	
		Block E	
Block F		6	
Block G			
Block H			
Congo Town	Congo Town Old Road	Upper Congo Town Back Road	
		Lower Congo Town Back Road /Rock Crushers: Block one	
		Lower Congo Town Back Road /Rock Crushers: Block Two	7
		Lower Congo Town Back Road /Rock Crushers: Block Three	
		Lower Congo Town Back Road /Rock Crushers: Block Four	
		Lower Congo Town Back Road /Rock Crushers: Block Five	
Lakpazee	Central Lakpazee	Lakpazee West Point	
		Lakpazee Zoo	8
		Lakpazee Precious Andrew Drive	
		Lakpazee Community Church	
		Central Lakpazee community	
Sinkor	Ocean View, Nagbeh Bar (Sinkor)	Block A, Block Factory, 4th street	
		Bassa Town, Block B, 5th street	9
		ACFI Community, Block C, 6th 7th street	
		Kpelleh Town, 9th street	
		Down the beach community, 10th 11th street	
		Kings family community, down the beach	

Clara Town	River View	Block A	10
		Block B	
		Block C	
		Block D	
New Kru Town	Point Four	Madella field	
		Behind Madella field (Zimbabwe)	11
		Natay and Kortie yard	
		Pa-Kumen yard and Zuba yard	
Caldwell	Caldwell Market	Goway Town	
		Kama Zone	
		Back Road	12
		Layee Town	
		Mother Richel Hill	
		Tonsup	
		Paye Town, Watchen Town, Forken Town	
		Caldwell Market	13
	Samukai Town	king Zabedee	
		Kissi Koma	
		Gbesiah Town	
		Barka Town	
		Cess Town	14
		Cassava Hill	
		Congo settlement	
		Bowain Farm	
Bassa Town (Samukai town)			
Pepper Town		15	
Bardnersville	Johnsonville Road B	Block A	
		Block B	
		Block C	
		Block D	
New Georgia	Bassa Town (New Georgia)	Block A	16
		Block B	
	Chocolate City B	1305 A	
		1305 B	
		1305 C	
		1307 A	17
		1307 B	
		1307 C	
1307 D			
Gardersville	Chicken soup Factory	Block A	
		Block B	18
		Block C	
		Block D	
		Block E	
		Block F	
		Block G	19
Golf Area			