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Implementation of the PCIMA Surge Approach in Mali in 2019 Review of the Kayes Health District

Authors: Samou Diarra, Bareye Ouologuem, Oumar Touré, Modibo Doumbia, Yiriba Diarra,

Mohamed Cissé, Awa Diallo, Bakary Sidibé, Issa Goïta, Mohamed Diabaté, Boubakar Keïta,

Ibrahima Dembele, Mamadou Dembélé.

Author Correspondent: Samou Diarra, Health Center of Reference of Kayes, Mali, Region of

Kayes, Area: Lafiabougou: Tel: 75 16 60 07/62 30 55 22.

Abstract

PCIMA Surge is a new approach applied in Mali to the management of severe acute malnutrition. It aims to increase the resilience of the health system so that it is able to provide quality services for the management of acute malnutrition at all times, especially during periods of high demand when the capacity to saving lives must be the most important without compromising the capacity and responsibility of government health actors. [1] The general objective of our study was to take stock of the implementation of the PCIMA Surge approach in the Kayes health district in 2019. The approach made it possible to mobilize nutrition stakeholders around the subject, to mobilize the sum of 8,072,074 FCFA at the community level, to improve the performance indicators of the PCIMA and to revive community activities.

At the end of the evaluation, the observation was that the surge approach remains a diagnostic and planning tool that contributes to strengthening the health system.

Key words: PCIMA Surge, implementation, Kayes.

Introduction

The PCIMA Surge is a new approach applied in Mali to the management of severe acute malnutrition.

The Surge approach within the framework of the PCIMA increases the resilience of the health system so that it is able to provide quality services for the management of acute malnutrition at all times, especially during periods of high demand when the capacity to save lives must be greatest without compromising the capacity and responsibility of government health actors. [1]

The need for this approach and a framework were first proposed in an article published in September 2010 in the Field Exchange, the authors of which are Peter Hailey and Daniel Tewoldeberha [2]. The approach has been described as a way to avoid intermittent emergency support associated with ongoing "emergency" programs; by making it possible to use and rather strengthen the ability of the health system to respond to recurrent problems of acute malnutrition.

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Under the leadership of an international non-governmental organization (NGO), Concern Worldwide; a number of tools have been developed to support this concept. Thus, a pilot project was launched in Kenya from May 2012 to the end of 2014. Fourteen health establishments in Marsabit county were involved. These efforts were extended to Kenya in 2014 and 2015 to three other counties (Wajir, Baringo and East Pokot) in 24 more health facilities, with support from Save the Children, Islamic Relief and World Vision. Concern also implemented the Surge approach in the Karamoja region of Uganda in 2009 and 2012, in addition to carrying out preparatory work in Niger [1].

In Mali, the approach was implemented for the first time in Mopti in 2017 by the NGO Save The Children. In August 2018, training of trainers on the approach took place in Bamako. The Kayes district nutrition manager participated in this training.

In the Kayes district, a series of activities were followed by the initiation of Bamako:

- An orientation workshop for administrative, health authorities and district partners on the approach in the presence of the Prefect in September 2018;

- A training workshop for DTCs (Technical Director of the Center) and ASACO (Community Health Association) presidents on the approach in which 30 DTCs, 30 presidents or members of ASACO took part, 2 URENI agents (recovery and intensive nutritional education unit) of the CSRéf (referral health center). This workshop was held from September 27 to 30, 2018.

- A training workshop for district facilitators (12 participants) from November 6 to 8, 2018.

- A formalization of commitments workshop held from January 21 to 22, 2019 in which 122 participants took part.

- Establishment of the PCIMA Surge coordination committee for the coordination of the implementation of the approach in the district in January 2018.

In addition, the district participated in the training workshop on techniques for mobilizing local and communal resources in order to support health actions, in particular the CMAM Surge response plans. This workshop was organized by Save The Children International with technical and financial support from other IRC, Tdh and COOPI partners. At this workshop, it was agreed to give the name "PCIMA Surge" to the approach in the Malian context.

On September 24 and 25, 2019, he also participated in the national workshop to validate the tools of the PCIMA Surge approach in the Malian context.

On January 29 and 30, 2020, the PCIMA Surge capitalization workshop was held in the Kayes health district with funding from Action Against Hunger.

WHAT IS THE PCIMA SURGE APPROACH

The PCIMA Surge approach is a mechanism that aims to strengthen the resilience of the health system through a process of analysis and participatory planning without compromising its normal functioning. The underlying principles are: government leadership, effectiveness / efficiency, strengthening and resilience of the health system, adaptation / flexibility, innovation, participation and transparency, promotion of partnerships, sustainability.

It is structured around eight steps divided into two stages which are titled as follows:

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Stage 1: Implementation, analysis and Planning

It includes five steps according to the Concern Woldwide operational guide and four steps according to the document adapted from Mali.

- Step 1: Analysis of trends and risks

At this stage, we identify the different factors that have a low, medium or high impact in the occurrence of malnutrition as a function of time. We also analyze the curves of certain morbidities over two or three years. The step allows you to take stock of the risks and see the evolution of the expected morbidity trends.

- Step 2: Capacity analysis

It assesses the supply of services by identifying the gaps in the activity package, the centre's normal capacity to cope with curative consultations. Thus the normal load in the context of the management of severe acute malnutrition is determined.

- Step 3: Establishment of thresholds

Once the normal workload has been determined; we proceed to the establishment of thresholds. These thresholds provide information on the state of exceeding the capacities of the center called phase. We distinguish the normal phase (normal workload), alert phase (the workload overflows, but can be managed by the center requiring little or no external input), serious phase (the load is largely overflowing, requiring substantial external support), and emergency phase (the workload is even greater, requiring a greater external contribution).

- Step 4: Define the surge actions and quantify their costs

Depending on the phases, relevant and feasible actions will be identified and budgeted at the same time as the actors supposed to bear the costs of the surge actions.

- Step 5: Formalization of commitments

Formalization means bringing together the actors to act on commitments in relation to the various actions. It is done through the signing of an agreement between the stakeholders.

Stage 2: Monitoring and action in real time

It includes three stages which are:

- Step 6: Monitoring of thresholds

Once the thresholds have been established, periodic monitoring is carried out at the level of the center to determine whether or not they have been exceeded.

- Step 7: Scaling

This step triggers the actions planned in the event of a threshold being exceeded or the said actions being stopped in the event of a threshold reduction.

- Step 8: Review and follow-up of Surge activities

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It serves as a framework for evaluating the approach after a peak or after a certain period of implementation, judging the adequacy of the thresholds, phases and actions. The same goes for the whole process.

The PCIMA Surge approach can be implemented at different levels of the health pyramid: Operational level:

- Community health centers (cscom) / Secondary health center: at this level, the workload which determines the different phases is linked to the number of new cases of severe acute malnutrition (SAM) admitted into the care program.

- Health district: it is an entity that supports and supervises the activities of the cscom. At this level the workload is determined by the number of health centers in differents phases (normal, alert, serious or emergency).

Intermediate level:

- Regional level: the regional health department in turn supports the health districts that make up its area of intervention. Its workload is also linked to the number of health districts in the different phases.

Central level:

- National level: its charge will depend on the number of regions in the different phases.

It could be the same for the sub-regional, continental levels, etc.

General objective: to take stock of the implementation of the PCIMA Surge approach in the Kayes health district in 2019.

Specific objectives:

1. Take stock of the mobilization of stakeholders around nutrition through the approach;

2. Take stock of the mobilization of financial resources at the community level through the approach;

3. Determine the performance of the PCIMA indicators in the health centers that have implemented the approach;

4. Take stock of promotional activities, SAM admissions, the availability of inputs in surge centers, the resolution of minimum activity package (MAP) gaps and that of the achievement levels of the different surge phases.

Method

1. Study framework: Kayes health district.

The Kayes health district is located between 14 $^{\circ}$ and 17 $^{\circ}$ North latitude and between 11 $^{\circ}$ and 27 $^{\circ}$ West latitude. It stretches 140 km from East to West and 221 km from North to South. With an area of 22,190 km²; dependent on Sahelian and Sudanese climates, its population was estimated at 704,686 inhabitants in 2019 (source DNSI 2009 updated in 2012) with a density of 31 inhabitants per km2 representing 24% of that of the region.

On this same date, he took into account in these plans 47 cscom, 3 secondary health centers and one URENI (recovery and intensive nutritional education unit) which offered acute malnutrition

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care services. In 2019, he admitted 5,071 severe acute malnourished (SAM) with 5,015 discharged in his URENAS (recovery and severe ambulatory nutritional education unit). The number of children cured was 4,824 against 168 dropouts and 23 deaths.

2. Type of study: it is a cross-sectional, retrospective study.

3. Study period: from January to December 2019.

4. Sample size: the evaluation concerned 30 health centers which implemented surge.

5. Inclusion and non-inclusion criteria:

- Inclusion criteria: all the health centers that implemented the approach were included.

- Criteria of non-inclusion: the non-surge health centers and the URENI of the CSRéf.

6. Variables: characteristics of health centers (community health center (cscom), secondary health center (CSS), center in rural or urban areas, distance from centers to the CSRéf), monthly total of children (6-59 months) screened, total annual children screened, number of children screened through quarterly active screenings (DAT), cure rate, dropout rate, death rate, number of ruptures (PPN, amoxicillin, Albendazole), number IEC sessions, number of participants per IEC, number of nutritional demonstration sessions, number of participants in nutritional demonstrations, Percentage of gap resolved, events having impacted the occurrence of malnutrition in the uren (recovery and recovery unit) education), the different phases reached by the health centers, costs of the different activities (transport of nutrition inputs, nutritional demonstrations, DAT, resolution of gaps, monthly meetings, monitoring, other costs).

NB: A secondary health center is a structure that offers the minimum package of activities but does not meet the criteria of a cscom that has a board of directors, a management committee. The secondary health center being in the health area of a functional or non-functioning cscom generally only has a management committee. Some centers of this type only take care of the village; others take care of the health of other surrounding villages like cscm. In addition, health centers are not normally part of district planning.

7. Data entry and analysis: the data were collected using a framework established for this purpose. They were entered in Words 2007 software and analyzed by SPSS software.

Results

1. Characteristics of the health centers that have implemented the approach

In the health district, the approach has been implemented in 30 health centers (27 cscom, 3 CSS). Among the 30 centers, 25 were rural and 5 urban. They were managed by general practitioners in 46.6% of cases, senior health technicians (36.6%), health technicians (13.3%) and by a doctor specializing in family and community medicine (3.3%).

The distance from the centers to the CSRéf was less than 50 km in 33.3% of the cases, between 50 and 100 km in 53.33% of the cases; more than 100 km in 13.33%.

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2. Mobilization of nutrition stakeholders

The implementation of the Surg approach has brought together the main players in nutrition around this subject. These are the prefect (administrative authority) of the circle, sub-prefects (10), mayors or councilors of the municipalities concerned (28), presidents of ASACO or management committees (30), the president of FELASCOM (Local Federation of Community Health Associations), DTCs (Technical Director of the center) and staff of the cscom, agents of the nutrition division at the national level, the nutrition focal point of the regional health directorate, the District Chief Doctor, agents from the local social development and solidarity economy service, the district nutrition manager (RND), community relays, community health workers (ASC), village chiefs, managers of youth and women's associations, representatives of expatriates in Europe, agents trained in facilitation of the approach, focal points in reproductive health, vaccination, malaria, ECS (Community essential care); a member of SIS (Health Information System), nutrition partners in the district (ACF, USAID / SSGI, WFP, UNICEF, RED CROSS).

These different actors intervened at the different moments of the implementation of the approach: the orientation workshop for administrative and health managers, the implementation in the cscom and CSS, the formalization of commitments workshop, the implementation place of the PCIMA Surge coordination committee, supervision of surge centers by the district, joint supervision (district, region and national level) of surge centers, workshop to capitalize on the implementation of the approach in the health district.

The active participation of certain actors such as the prefect, sub-prefects, mayors, ASACO presidents, technical agents, district agents and partners in the activities of the Surge approach had a remarkable impact. Because on many occasions, this has made it possible to raise the problems involved in the dysfunctions identified during the provision of services. It is also thanks to the pleas made in their presence that many decision-makers (presidents of ASACO, mayors) have funded actions to enhance community and health promotion activities (monthly meeting of ASACO with community intermediaries, active quarterly screening, nutritional demonstration sessions) which are decisive in the fight against malnutrition. They were therefore massively carried out without funding from NGOs.

In addition, the involvement of the prefect and sub-prefects made it possible to give nutrition activities a priority aspect in the eyes of the health area actors who mobilized little before.

The participation of the other actors (village chief, community relay, ASC, representatives of youth and women groups, etc.) of the area during the establishment, made it possible to raise awareness about malnutrition, to make them participate to the implementation process with the collection of their questions and possible solutions. This helped secure their commitment throughout the process.

3. Mobilization of financial resources in FCFA (CFA Francs) at community level

The total financial resources mobilized within the framework of the implementation by the community were 8,072,074 including:

o The cost of transporting nutrition inputs: 1,161,350

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o The cost of nutritional demonstrations: 1,113,300

o The cost of monthly meetings: 1,036,500

o The cost of quarterly active screenings: 1,522,700

o The cost of monitoring: 46,000

o Additional costs: 776,500

o The costs of resolving the gaps: 2,415,724

These data were collected for 27 centers (3 centers had not filled in this part of the outline) apart from monitoring which was only carried out by one center.

4. The origin of the FCFA financial resources mobilized by the community

o ASACO: 7,667,274

o Town halls: 294,000

o Other contributions: 110,800

5. Performance of the PCIMA indicators

Healing rate (acceptable if greater than 75%) [2]: all the surge centers had an acceptable healing rate (between 82.6 and 100%); 93.3% of them had a rate above 90% and 50% to 100%. A statistically significant association was found between the duration of the center in the alert phase and the cure rate (Chi-square value: 56.00; P: 0.001).

Dropout rate (acceptable if less than 15%) [2]: only one center (3%) had a high dropout rate (17.40%). However, 90% of the surge centers had a dropout rate of less than 6%. In addition, a statistically significant association was found between the duration of the center on alert and the drop-out rate (Chi-square value: 56.00; P: 0.001).

Death rate (acceptable if less than 3%) [2]: all cscom surge had a rate of 0%.

6. Total monthly children screened: in 28 surge centers, the number of children screened monthly ranged from 1848 to 15455 with an average of 2396 per center (figure 1). The total annual number of children screened was 67,106 which represents 61.37% of children aged 6 to 59 months in the 28 centers concerned in 2019.

7. Quarterly active screening (DAT)

To improve screening in the community, it was agreed with the cscom surge to organize quarterly screening campaigns for acute malnutrition at local level through community intermediaries.

The number of DAT performed has fluctuated between 0 and 8: indeed, some centers have coupled mass campaigns (Weeks of Intensification of Nutrition Activities (SIAN), CPS (Seasonal malaria chemoprevention campaign)) with the tracking of the acute malnutrition. The number of health centers that did not do any DAT was 6 out of 28 (centers for which data were collected). The centers which carried out at least 4 DATs were 5 out of 28. Those having made one to 3 DATs were 17 out of 28.

The DAT made it possible to strengthen the indirect coverage of severe acute malnutrition. This coverage was good for 96.7% of the centers (29/30) operating between 45 and 368.2%. The

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center which had 45% was at 24% in 2018. The average rate of children screened by DAT was 25.79%.

8. Severe Acute Malnutrition admission

The average MAS admissions per month fluctuated between 5 and 17 children in the surge centers (29) against 4 and 12 for the whole district. The total number of SAM children admitted by the surge centers (30) was 3,559 compared to 5,071 for the whole district, representing 70.18% of those in the district.

9. Availability of nutrition inputs

Sold out in RUTF: almost all of the surge centers (95.55% or 28/29 centers) did not experience a sold out in RUTF.

Sold out of Amoxicillin and Albendazole: for Amoxicillin, 96.6% of the surge centers had no sold out. As for albendazole, 65.5% did not experience a sold out.

10. Gap resolution

The gap resolution rate has evolved between 0 and 100%. It was more than 50% for 79.4% of the centers (10/16 who filled in the part of the outline) (Table I).

11. Promotional activities

- **IEC** (**Information, Education, and Communication**) **session on nutrition:** the number of IEC sessions fluctuated between 1 and 62 with a total of 1008. The annual average of IEC sessions was 36. In addition, 50% of the surge centers have had a number of sessions between 43 and 62. And 53.57% of the surge centers had an annual number of participants between 1017 and 12 898.

The total number of IEC participants was 42,014 with an annual average of 15,000 per center.

- **Nutritional demonstration session:** the number of sessions organized fluctuated between 1 and 32 with a total of 321 and an annual average of 19 sessions. And also 50% of the surge centers had an annual number of sessions ranging between 8 and 35.

The number of participants in the demonstration sessions was 9,985 with an average of 384 per session. Elsewhere, 73% (19/26) of the centers had a number of participants between 111 and 1717.

- Monthly meetings:

The number of meetings carried out was 123. And 34.48% of the surge centers (10) made at least 6 monthly meetings; 14% (4) achieved 12.

12. Seasonal events: the events that most impacted the occurrence of acute malnution or the influx of patients in acute malnutrition management programs were: mass screening of acute malnutrition in the community, the rainy season with the recurrence of certain diseases such as diarrhea, malaria, and lean periods of food.

13. The phases of the approach reached by the surge centers

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Normal phase: a center remained in normal phase for 10 months; while 3 made 11 months and 24 made 12 months

Alert phase: three centers did 1 month in alert phase and one did two.

Serious phase: no cscom has reached this phase.

Emergency phase: no cscom has reached this phase.

Discussions

The evaluation concerned 30 health centers which implemented the surge approach from January to December 2019. The limits of the evaluation concerned the deficit in filling the canvas with certain missing data, the incomprehension of certain parameters to be estimated by the technical managers of the centers. Also, few documents were found that take into account the aspects addressed in this work. And these were mostly in English.

1. Characteristics of the centers that have implemented the approach

As part of our study, the approach was implemented in 30 health centers. This number is high compared to that of the pilot project carried out by Concern Wolwide in Kenya where it was implemented in 14 health establishments in the county of Marsabit between May 2012 and the end of 2014 [1,4]. Implementation efforts were extended to Kenya in 2014, and then in 2015 to three other counties (Wajir, Baringo and East Pokot) in 24 more health facilities. [1]

The included health centers included cscom and secondary health centers. The approach was able to be implemented in both types of health facility. This differentiation of health centers is not taken into account in the pioneering documents of the Surge approach [1, 2, 4].

In our study, the majority of centers were run by doctors, followed by senior health technicians. The majority were also rural, located between 50 and 100 km from the CSRéf. No significant difference was found between the DTC grades, the rural or urban situation of the center, its distance from the CSRéf in carrying out IEC sessions, nutritional demonstrations, and monthly meetings. In the pilot project evaluation report, the centers included by district were examined on the basis of their performance (low, medium, high) [4].

2. Mobilization of nutrition stakeholders

The implementation of the approach has made it possible to bring together the different actors (state, community, NGO) to consider the local problems of malnutrition and propose solutions to them. The approach implementation activities, supervision, formalization of commitments, capitalization were used as advocacy and awareness-raising frameworks in favor of nutrition. For one of the rare times, we had the mayors or their representatives as well as sub-prefects during the supervisions. We had a large fringe of the ASACO to follow the supervisors' return. However, it should be noted that the financing of the activities has been taken over for the most part by the ASACO. Only two out of 28 town halls participated in the financing of the activities. Many mayors contended that they were not asked for the support concerned. It is all the same clear that without collegial funding of planned activities, sooner or later ASACO will run out of steam and this will have a negative impact on the dynamics initiated at community level in favor of nutrition.

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The participation of community stakeholders has improved the contextual analysis of risks and trends during implementation. The contribution of these actors was reported in the operational guide of Concern Worldwide [1] and the document of integrated management of acute manutriton of the Kenyan ministry of health [5]. But we have not been able to measure the role of hyphen that they would constitute between the health center and the community passing information on both sides.

3. Mobilization of financial resources at community level

The mobilization of financial resources was necessary for the implementation of the planned activities, the resolution of the gaps identified in the PMA offer. By taking into account only the data collected in the 29 centers that filled in the canvas; 8,072,074 FCFA were mobilized. This cost seems underestimated given certain limits (short collection time, deficit in estimating the costs of certain activities).

The size of the activities carried out (1008 IEC sessions, 321 nutritional demonstration sessions, 123 monthly meetings, resolution of the gaps at 50% or more in 10 out of 16 cscom, active quarterly screening) compared to the amount mobilized is an aspect efficiency of the approach.

4. The performance of the PCIMA indicators

All the surge centers had an acceptable cure rate (between 82.6 and 100%). In 2018 it fluctuated between 76 and 100%) [6]. This rate was higher than 90% (this figure was 83.3% in 2018) in 93.3% of the centers. It was 100% in 50% of them. In 2018, only 33.33% had a 100% cure rate [6].

Only one cscom (3%) had a high dropout rate (17.40%). Said cscom remained in the alert phase for two months. Also, 90% of cscom surge had a dropout rate below 6%. This figure was 70% in 2018. All of the surge centers had a death rate of 0%. A statistically significant association was found between the number of months in the alert phase and the rates of recovery from abandonment. In the pilot project evaluation document; the level of evidence was limited as to the association of high threshold of the health center and the failure of the standards spheres [4].

The observation is that the surge health centers were generally more efficient after the implementation of the approach than before. In the pilot project evaluation report [4], it is reported that globally the sphere standards have been reached by the pilot centers.

5. Active quarterly screening (DAT): this activity remains a successful implementation of the approach in the district. Because the carrying out of active screenings by the community through its own resources remains a first in the fight against malnutrition in the district. Until then, the funding of mass campaigns was devolved to local partners (NGOs). The DATs also made it possible to significantly improve the indirect coverage of SAM between 2018 and the end of 2019.

6. Admission of SAM in the program: the average monthly admission of the surge centers was higher than that of the district as a whole. These centers accounted for 78.18% of admissions in

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the district. This situation could be justified by the realization of DAT, the training of accompanying mothers on the measurement of the brachial perimeter.

7. Resolving the gaps: the approach was an opportunity for all the surge centers to be able to question the PMA that they offer through the identification of the gaps concerning the various activities (CPN, Childbirth, PCIMA Vaccination, management of Drug sales depot (DV), number of staff, curative consultation, availability of materials, logistics, etc.). Gaps were thus corrected; thereby concretizing the strengthening of the health system whose approach is claimed. The following cases can be reported:

- Cscom 1: Purchase of speculum for the ANC, recruitment of nutrition officer,

- Cscom 2: Purchase of motorbike for the advanced strategy (contribution from all the villages in the area, the town hall, the ASACO, the village youth association, the DTC, the district supervisor), installation of electricity for packaging vaccines, purchase of blood pressure monitor;

- Cscom 3: motivation of the nutrition officer by the ASACO, awareness on early CPN

- Cscom 4: recruitment of additional staff (an obstetrician nurse to take care of maternity).

The findings on the resolution of the gaps highlight an elegant aspect of the approach: the diagnosis. Indeed, the approach made it possible to identify many discrepancies regarding the service offer in the various health centers.

Recommendations

Ministry of Health and its partners:

- Extend the implementation of the PCIMA Surge approach to a representative number of health districts in Mali in order to determine the ins and outs of the approach and create synergy with the national PCIMA protocol;

- Carry out the approach at different levels: health center, district and region;

Conclusion

The implementation of the PCIMA Surge approach in the Kayes district has made it possible to revive community activities (monthly meetings, nutritional demonstrations, active screening), to promote the financing of nutrition activities by ASACO and town halls.

At the end of the implementation, the approach appears to be a diagnostic and planning tool that has helped strengthen the health system.

Bibliography

1. Comprehensive approach in the context of community management of acute malnutrition. Operational Guide. Concern Worldwide. 2017. P68.

2. Peter Hailey and Daniel Tewoldeberha (2010). Suggested New Design Framework for CMAM Programming. Field Exchange 39, September 2010. p41.

3. Protocol for the integrated management of acute malnutrition in Mali. Version revised in 2017. p230.

Vol. 4, No. 03; 2020

ISSN: 2581-3366

4. Independent evaluation of the cmam model surge pilot. Concern Worldwide, Center for Humanitaria Change 2015. p60.

5. Ministry of Health. Surge approach for. Integrated management of acute malnutrition. Operational guidelines for health workers. Volume 1, August 2016. P73.

6. Kayes health district. PCIMA Surge implementation reports in health centers. 2019.

Figure 1: Distribution of the monthly total of children screened as a function of time



Table I: Percentage of gaps resolved by health center

	Percentage of gaps resolved	Health center staff	Percentage of health centers	Valid percentage of health centers
Valid	0	4	13,3	25,0
	28,60	1	3,3	6,3
	33	1	3,3	6,3
	50	2	6,7	12,5
	66,66	1	3,3	6,3
	71,40	1	3,3	6,3
	75	3	10,0	18,8
	86	2	6,7	12,5
	100	1	3,3	6,3
	Total	16	53,3	100,0
Missing	Missing system	14	46,7	
Total		30	100,0	