

**Performance of the Urenas of the Kayes Sanitary District Between April 2016 and March 2017 / Case of 50 Urenas**

DIARRA Samou, DEMBELE Mamadou, Modibo DOUMBIA, DIABATE Mohamed, NIARE Boubacar, BARRY Kassoum, DIALLO Awa, BERETE Kassim

Author corresponding: Samou DIARRA, Health centre of reference of Kayes, Mali, region of Kayes, district: Lafiabougou, Such: 75 16 60 07/62 91 46 46

**Abstract**

According to the 2016 SMART carryforward, in the Kayes area, among children aged 6 to 59 months, the total acute malnutrition disastrous was 8.4%, that of moderate acute malnutrition was 7.5% against 0.9% for severe acute malnutrition. [4] Thesis figures show has decrease compared to the situation in 2015 where they were respectively 13.3%, 10.9% and 2.4%. It is within this framework that we cuts studied the performance of the urenas of the health district of Kayes. The indicators selected were the disastrous of cure, abandonment, death; the average length of stay, and the average weight profit. The limitations of the studies were the lack of has remedy other than speculation to consider the resulting raised by our findings ace well ace the lack of studies comparing urenas indicators with each other;

Indicator analysis revealed that cure, dropout and death disastrous were acceptable in 86%,74% and 100% of urenas, respectively. Acceptable Mean length of stay and mean weight profit in urenas were not in 98% and 84%, respectively. Effective The urenas appeared goal inefficient. For the victory against malnutrition prevention must Be in order.

**Keywords:** Malnutrition, performance, urenas, pédiatric, Africa

**INTRODUCTION**

Malnutrition is a pathological state resulting from the deficiency or relative or absolute excess of one or more essential nutrients, that this state appears clinically or is detectable only by biochemical analyses, anthropometric or physiological [1]

According to the report 2017 of the world nutrition, the world coped with a serious nutritional situation: 2 billion people suffers from deficiencies in essential micronutrients, like iron and vitamin A; 155 million children presents a delay of growth, 52 million children are reached of emaciation [2]

In Mali, according to the EDS V (2012-2013), the level of acute malnutrition can be described as

high. Indeed, a little more than one child out of ten (13%) is reached of thinness (8% pennies the moderate form and 5% pennies the severe form). [3]

According to the report del' investigation of nutrition and retrospective mortality of type SMART 2016, in the area of Kayes, in the children from 6 to 59 months, the rate of acute malnutrition total (MAG) was of 8.4%, that of moderate acute malnutrition (MAM) was of 7.5% compared with 0.9% for severe acute malnutrition (FARMHOUSE). [4] These figures note a fall compared to those of 2015 when the rate of MAG in the area was de13.3% including 10.9% of MAM and 2.4% of FARMHOUSE. This fall can be registered in various registers on the basis of the performance of the units of recovery and severe education nutritional ambulatory (URENAS), with the crowning of the efforts of the whole of the actors intervening in the sector of the nutrition. It is in this context that we studied the performance of the assumption of responsibility of severe acute malnutrition in the urenas.

### **MAIN OBJECTIVE**

To study the indicators of performance in the urenas of the medical district of Kayes between April 2016 and March 2017.

### **SPECIFIC OBJECTIVES**

- To determine the frequency of the rates of cure, abandonment, acceptable deaths or not as well as the average duration of stay and the profit of middleweight in the urenas.
- To learn certain lessons from the analysis of the indicators of performance.
- To make recommendations.

## **2. METHODOLOGY**

Tally of study: the study proceeded in the medical district of Kayes

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

Study period: the study related to the data of the urenas between April 2016 and March 2017.

### **Criterion of inclusion and exclusion**

- Criterion of inclusion: were included in the study the urenas of the medical district of Kayes of which the data were grouped in the database between April 2016 and March 2017.
  - Criterion of exclusion: urenas of the medical district of Kayes of which the data were not taken into account between April 2016 and March 2017
- Sample: they are all the urenas included of the medical district of Kayes is 50.
- Unfolding: the database created to collect information of the urenas of the district was exploited to inform the data entry form. The reference document for the interpretation of the results was

the national protocol of the Integrated Assumption of responsibility of Acute Malnutrition (PCIMA) [5]

In the analysis of the average duration of stay, we carried out a simulation starting from table weight-size of WHO for child 2006. The weights appearing in the column -3 Z-score were taken for those of admission. The aforementioned weights were multiplied by 7 (to have the weekly profit of weight) then by variable weights in gram. The product obtained represents the profit of weight during the first week. He is added to the weight of admission to know what should be the weight of the patient in the end of the first week. The same exercise is made with this new weight until reaching the target weight at the third week so that the conditions of discharge of the protocol can be respected. This simulation made it possible to determine with all 151 weight which constitutes the aforementioned table; those necessary to take as their frequencies so that a discharge before four weeks is done.

Also, the protocol being quiet on the significance of some indicators, we proposed some in various cases. The following table builds the facts:

TABLE I: Values of the indicators of performance to the URENAS

The observation of the table makes it possible to note that the protocol is dumb on the significance of a rate of cure between 50 and 75%, of a rate of death between 10 and 15%, of a rate of abandonment between 15 and 25%, one average duration of stay between 4 and 6 weeks. This is why within the framework of this study, these intervals were qualified the precarious ones.

For the data processing, the software used was ear information version 3.3.2 and Word 2007.

Variables:

- Rate of cure (TG)
- Rate of abandonment (MT)
- Rate of death (TD)
- Profit of middleweight (GPM)
- The average duration of stay (DMS)
- Significances of the rate of cure
- Significances of the rate of abandonment
- Significances of the rate of death
- Significances of the profit of middleweight
- Significance of the duration of the stay

### 3. RESULTS

Distribution of the urenas according to the rate of cure (Table II) 86% of the urenas had an acceptable rate, precarious 12% and 2% alarming.

Distribution of the urenas according to the rate of abandonment (Table III)bThe acceptable in 74% of the urenas, alarming in 14% and precarious rate of abandonment in 12%.

Distribution of the urenas according to the rate of death (Table IV ) In all the urenas, the rate of death was acceptable and went from 0% and 3%.

Distribution of the urenas according to the average duration of stay (Table V) in 56% of the urenas, the average duration of stay was alarming while it was precarious in 42%. Only in a urenas, it was acceptable. Thus 98% of the urenas lasted one nonacceptable stay average duration.

Distribution of the urenas according to the profit of middleweight (Table VI) in 82% of the urenas, the profit of middleweight was alarming. For 16% (8.5 to 13 g/kg/j) it was acceptable.

Distribution according to the various indicators for the whole of the district (Table VII)

#### 4. DISCUSSION

Our study related to fifty urenas of which the data were grouped to evaluate their performances between April 2016 and March 2017. Although there exist several types of indicators in the various programs (urenam, urenas/ureni) [6], here, it was retained account only of the rates of cure, abandonment, of death, the average duration of stay, and the profit of middleweight. The data were collected over 12 months in 43 urenas, 11 months in 5 urenas, 5 months in 1 urenas and 3 months in another. The limits of the study were the absence of other appeals that calculation to consider the questions raised by the various results. Also we did not find studies comparing the indicators of performance of the urenas between them; The analysis of the indicators revealed that the rates of cure, abandonment and death were acceptable respectively in 86%, 74% and 100% of the urenas. For the whole of the district, they were also acceptable is a rate of cure of 90%, that of abandonment 10% and 0% of death. Indeed, in 2013 in the medical district of Kita (area of Kayes) the TG was of 83%, MT with 15% and that of the death was to 2%. [7] A this same period, in the medical district of Baraouli (area of Ségou), the TG was of 82.9%, MT was to 12.1% and the TD with 0.9%. [8] Always in 2013, in the medical district of Koutiala (area of Sikasso) the TG was of 95.03%, MT with 4.97% and the TD with 0%. [9] In 2014, an investigation financed by ONG Is in hiding Men in the medical districts of Markala and of Macina (area of Ségou) found the following rates: Markala (TG: 92.75%; MT: 5.16%; TD: 1.18%; Not-guarantor: 0.91%), Macina (TG: 73.55%; MT: 24.02%; TD: 2.34%; Not-guarantor: 0.10%). [10] According to the organism International rescue committee (IRC), in 2014 in the medical district of Ménaka (area of Gao) in connection with 11 urenas; the TG was to 95.26% compared with 4.74% of abandonment; and 0% of death. [11] In 2015, an investigation SQUEAC conducted by the IRC (International Rescue Committee) noted that the indicators of performance of the urenas of Kati (region of Koulikoro) answered the values standards of the standard sphere of the national protocol between January 2013 and November 2014. [12] In 2016, COOPI brings back in his report of investigation SQUEAC conducted in the medical district of Douantza (region of Mopti) a TG of 97.3%; 2.7% from abandonment and 0% of death. [13] In 2017, investigation SQUEAC conducted by ONG ACTED in the medical district of Koro (region of Mopti) in 25 urenas found a rate of cure of 89%, an abandonment with 9% and the rate of death to 2%. [14] The comparison of the results of the various districts makes it possible to note that the TG of the

district of Kayes is higher than those of Kita, Koro and of Baraouli which are of 2013. It is lower than that of Markala, Menaka, Douantza. These data which are of 6 administrative areas of the country (Kayes, Koulikoro, Sikasso, Ségou, Mopti, Gao) make it possible to observe by taking of account the TG and the TD; a progressive improvement of the effectiveness of the assumption of responsibility of severe acute malnutrition [6]. One can as notice as only in Macina in 2014, the acceptability and the receptivity of the assumption of responsibility (Abandonment) are taken failing this (24.02%).

The average duration of stay went from 3 to 9.3 weeks. Only one urenas was at 3.6 weeks (2%); 56% between 7.1 and 9.3 weeks; 42% between 4 and 7 weeks. In reference to the national protocol, the acceptable DMS is lower than 4 weeks. Beyond 6 weeks, it becomes alarming. We can thus deduce that 98% of the urenas of the district of Kayes have a nonacceptable DMS of which 42% have precarious.

For the whole of the urenas of the district, the DMS was 39.6 days is 5 weeks and 4.6 days. This duration, nonacceptable is not either alarming. It is precarious according to the name adopted in this study.

In the medical district of Kita in 2013, the DMS went from 1 to more than 12 weeks and the majority of the durations was between 4 and 6 weeks. [7] In 2016 to Douentza, it was reported that the median of the DMS was 6 weeks and that a strong proportion was beyond 7 weeks. [13] In 2015, it was reported that the median of the durations of stay in the medical district of Kayes was 5 weeks and 6 for the medical district of Yélimané. [15] The results of investigation SQUEAC conducted by ACTED in 2017 in the medical district of Koro reported that the median duration of the durations of stay was 5.1 weeks. [14]

The near total of the documents of which we were used for ourselves to discuss our results speak in general about median of the durations of stay. Also, some of these documents present average durations of stay beyond 4 weeks and lower or equal to 6 weeks as in harmony with the national protocol [9, 11,13,15,16,17,18]. What is absolutely not the case. In the direction of the protocol, very lasted of stay equal or higher than 4 weeks is considered nonacceptable.

The profit of middleweight, in 84% of the urenas was alarming. For 16%, it was acceptable. For the whole of the medical district of Kayes, it was of 6.3 g/kg/jour, which is nonacceptable for the national protocol.

In 2014, in the report of surveyed the SQUEAC with Macina and Markala [9], one can note that between August and December 2013, the average of the profits of middleweights was of 7g/kg/jour with Markala and 5,76g/kg/jour with Macina. According to a study of ONG Is in hiding Men, in the medical districts of Gao and of Ansongo (their data were amalgamated), the profits of middleweights were of 7g/kg/jour in 2008, 6g/kg/j in 2009 and still of 6g/kg/j in 2010. As for the medical district of Kayes, all these profits of weight are below the standard according to the national protocol.

On a side, our study noted that 98% of the urenas lasted completely one nonacceptable stay average being imbricated with a profit of weight also nonacceptable in 82% of the urenas. This aspect of the analysis of the performance of the indicators of the urenas concludes with a greater use (more than one should not any) put resources concerned, i.e. a lack of efficiency. This fact questions various aspects of the assumption of responsibility, of tracking to the admission, the follow-up in the program but also of the adaptation of the criteria of performance to the reality of the offer of the care in the medical district. In the context like that of the urenas of the medical district of Kayes where the part played by the extracommunity and extra actors public is rather dominating (non-governmental entities; U.N. or ONG working against malnutrition, WFP, the UNICEF, the Action Against the Hunger, etc), it are not enough anymore to cure the children malnutris, i.e. to be only effective but rather to take into account imperative efficiency. The urenas of the district must thus be efficient to reduce the weight of the efforts on the agents of assumption of responsibility, the moms of the patients, the other actors of the sector. Other side, we wondered about the appreciation of the DMS and the GPM to the ell of the protocol. The conditions of discharge stipulated by the protocol are they adapted to the field realities? In front of those, which are especially characterized by a significant proportion of the little qualified agents of assumption of responsibility (matrons, assistance-looking after), little justified (much is volunteers) with a recurring human resource gap [19], it not recognition of malnutrition like a disease on behalf of the population, the deficit in the quality of the care offered by the sanitary institutions, the profusion of poor households, illiteracy; to put the bar too high would de facto bring to make negative the performances under certain angles. The question was: can any profit of weight higher than 8g allow all the severe malnourished without complication to be cured in less than four weeks? Indeed, by estimating a profit of weight higher than 8g per kilograms and day like acceptable; that implies that this weight is sufficient to allow any patient allowed to be cured within the time.

After simulation, the reports were the following:

- The profits of weights necessary for a discharge before 4 weeks evolved between 5.2 and 10,1g per kilograms and day, 92% between 5.2 and 7.9 and 8% between 8.1 and 10,1g. In front of this report where any profit of weight of more than 8g makes it possible more than 92% of the patients to be discharged, one wonders why require that for which, it suffices a daily profit to 5.2 g/kg/j to be discharged in four weeks; a profit of 8 G to be in the standards. Note 1, page 45 of the national protocol of the PCIMA affirms that one can decrease by 15 to 20% the quantity of ATPE (therapeutic Food ready with employment) data to counter possible complications inherent in an abrupt catch of significant amount which could show a death. The remark is that if that is the case where the agent of assumption of responsibility to the free hands to decrease the first two week old ration to avoid complications; could one expect that the children malnourished of such a process reaches the target weight in two weeks? If this last acted thus systematically, it cures everyone in vain the acceptable average duration of stay will be exceeded blaming the efficiency of its program.

Through the analysis of the profit of middleweight, we estimate that the factors surrounding the assumption of responsibility having a negative influence make difficult the discharge before four weeks; otherwise the current standards compared to the DMS, GPM and with the criterion of discharge do not seem to take account of this field reality.

At the conclusion of our study, we retain that the urenas of the medical district of Kayes were effective between April 2016 and March 2017 with rates of cure, abandonment and acceptable deaths. However within sight of what remains reference, they appear no efficient with a no acceptable DMS and GPM. Also, the analysis of the latter enabled us to question ourselves as for the possibility of the respect of the criterion of discharge taking into account the multiplicity of the factors contributing to its non-observance.

We recommend concerning the protocol of:

- To raise the ambiguity on the values located between those acceptable and those alarming
- To raise the ambiguity being able to bring to make believe that one needs necessarily a profit of weight higher than 8 g/kg/j to reach the target weight at the fourth week by drawing up a table which specifies than the profit of weight than it is necessary so that each that weight of admission can reach the target weight in accordance with the protocol.
- To re-examine the acceptable duration of stay while adapting to the context of the care of the country

## **5. Conclusion**

The urenas of the medical district of Kayes appeared effective with the waning of this study, however the effectiveness of the assumption of responsibility does not appear to us the key of the victory against malnutrition. It would reside in the capacity of the populations and the structures implied to prevent malnutrition. And approaches it the first 1000 days appears more convenient to us for the attack of this objective.

## **6. REFERENCES**

1. Ministry for health: Module of training in human nutrition for the medical assistants, High-level technicians and Technicians of Health. 207p.
2. Développement Initiatives, 2017. Report on the world nutrition 2017: Nutrition with service of the ODD. Bristol, the United Kingdom: Development Initiatives. 2017. 115p.
3. Ministry for health and the public health: EDS V: Social survey and of health (EDSM-V) 2012-2013.577p.
4. Republic of Mali. Anthrometric Nutritional investigation and of retrospective mortality, Mali. July 2016. 118 p.
5. Ministry of health and the public health: Protocol of Assumption of responsibility Integrated of Acute Malnutrition into Mali. 2011. 204p.
6. Save The Children/Humanitarian Innovation Fund (HIF): Standard indicators and categories

for a better reporting of the pcma edition April 2015. 48p.

7. Action Against the Hunger: ACF. SQUEAC – stages 1 et 2 and followed by the indicators medical district of Kita, area of Kayes - Mali – December 2013. 37P.

8. AEDES. Vicente PARDO INIESTA, Pooch Alti TAMBOURA. Final report. Final independent evaluation. Community project of assumption of responsibility of acute malnutrition in the circle of Baraouli. May 2013. 54p.

9. Beatriz Pérez BERNABÉ. Evaluation of the cover of program PECIMA in the medical district of Koutiala of the area of Sikasso. Helen Keller International (HKI). December 2013. 50p.

10. Lionella FIESCHI. Enquête of cover of the Integrated Assumption of responsibility of Acute Malnutrition (PCIMA) with method SLEAC. Medical districts of Markala and Macina, area of Ségou. Be in hiding Men (TdH). January 2014. 51p.

11. International rescue committee (IRC). Beatrizpérez BERNABE. Investigation squeac. Medical district of Ménaka, area of Gao, Mali. avril, 2014. 53p.

12. International Rescue Committee (IRC). Issiaka Traore, Goita Ousmane, Marie Biotteau. Investigation SQUEAC: integrated programme of fight against infant mortality. Medical districts of Kati and Kalabancoro, Area of Koulikoro, Mali. November 2014. 71p.

13. Cooperazione Internazionale (COOPI). Issiaka TRAORE. SQUEAC. Assumption of responsibility of severe acute malnutrition in the district of Douentza. July 2016. 35p.

14. ACTED-Mali. Geoffray KAKESI MANDELEVIUM. Support with the prevention and the integrated assumption of responsibility of acute malnutrition in the medical district of Koro, area of Mopti, Mali. (Phase II). Nutritional investigation of cover SQUEAC. February 2017. 71p.

15. Red Cross Malian/French Red Cross. Semi-Quantitative evaluation of accessibility and cover SQUEAC. Medical districts of Kayes, Yélimané, area of Kayes. March 2015. 48p.

16. International Rescue Committee (IRC). Issiaka Traore, Goita Ousmane, Marie Biotteau. Integrated programme of fight against infant mortality in the Medical Districts of Kati and Kalabancoro, Area of Koulikoro, Mali. January 2015. 71p.

17. Boncana Abdourhamane Traoré project manager nut Nioro/Nara, Mr. Yacouba Traoré male nurse project nut Nioro/Nara. Assumption of responsibility of acute malnutrition and prevention of malnutrition with Community base in the Circle of Barouéli, Area of Ségou in Mali. SQUEAC. Red Cross Belgian Malian Red Cross. Novemvre 2015. 39p.

18. Abdoul-Aziz GOZA, Caren MAGEN. Prevention and assumption of responsibility of malnutrition and of pathologies associated in the area with Koulikoro, Mali. SQUEAC. Alliance Medical Against Medical Paludism (AMCPP) and the Alliance for International Action (ALIMA). June 2015. 38p.

19. Ministry of Health and the public health: Socio-medical development program (PRODESS III) 2014-2018. 234p.



**TABLE I :** Values of the indicators of performance to the URENAS

URENAS	Acceptable Values	Alarming Values
Rate of cure	> 75%	< 50%
Rate of lethality	< 10%	> 15%
Rate of abandonment	< 15%	> 25%
Profit of middleweigh	> 8 g/ kg/ day	< 8 g/ kg/ day
Duration of stay	< 4 weeks	> 6 weeks

**Table II:** Distribution of the urenas according to the rate of cure

*Significance of the rate of cure standards Rate of cure Frequency Percentage*

<i>Alarming</i>	< 50%	28-49	1	2%
<i>Acceptable</i>	> 75%	76-100	43	86%
<i>Precaious</i>	50-75	50-75	6	12%
<i>Total</i>			50	100,0%

**Table III:** distribution of urenas in function of rate of abandonment

*Significance of the rate of cure standards Rate of cure Frequency Percentage*

<i>Alarming</i>	< 15%	0-13	37	74%
<i>Acceptable</i>	> 25%	26-72	7	14%
<i>Precaious</i>	15-25%	15-25	6	12%
<i>Total</i>			50	100%

**Table IV : Distribution of urenas in function of rate of death**

<i>Significance of TD</i>	<i>standards</i>	<i>TD</i>	<i>Frequency</i>	<i>Percentage</i>
<b>Acceptable</b>	< 10%	0%	47	94
		1%	1	2
		2%	1	2
		3%	1	2
<b>Alarming</b>	> 15%		0	0
<b>Precarious</b>	10-15%		0	0
<b>Total</b>			50	100,0

**Table V: Distribution of urenas in function of average duration of stay**

<i>Significance of standards</i>	<i>DMS</i>	<i>Frequency</i>	<i>Percentage</i>
<b>Acceptable</b>	< 4 weeks 25 days	1	2
<b>Alarming</b>	> 6 weeks 43-65 days	28	56
<b>Precarious</b>	4-6 weeks 29-42 days	21	42
<b>Total</b>		50	100

**Table VI: distribution of urenas in function of gain of middleweighth**

<i>Signification du GPM</i>	<i>Standards</i>	<i>GPM en g</i>	<i>Frequency</i>	<i>Percentage</i>
<b>Alarming</b>	< 8g/kg/day	3.9-7.9	41	82,0%
<b>Precarious</b>	8g/kg/day	8	1	2%
<b>Acceptable</b>	>8g/kg/day	8,5-13	8	16,0%
<b>Total</b>			50	100,0%

**Table VII: Distribution according to the various indicators for the whole of the district**

<i>Indicators</i>	<i>TG</i>	<i>TA</i>	<i>TD</i>	<i>DMS</i>	<i>GPM</i>
<b>District of Kayes</b>	90%	0%	10%	39,6days	6,3 g/kg/day