



Families screening for malnutrition by MUAC and edema



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APRIL 2017

Family MUAC : Why ALIMA began this research...

-In 2011 ALIMA began studying the feasibility of training mothers to use mid-upper arm circumference (MUAC)

-We were responding to two recurring operational/medical issues:

1. Late presentation (resulting in more complications)
2. Low program coverage (often <50%)



MUAC I: Pilot Study, proof of concept

September 2011 – April 2012



[Arch Public Health](#). 2015 May 18;73(1):26. doi: 10.1186/s13690-015-0074-z. eCollection 2015.
Mothers Understand And Can do it (MUAC): a comparison of mothers and community health workers determining mid-upper arm circumference in 103 children aged from 6 months to 5 years.

[Blackwell N](#), [Myatt M](#), [Allafort-Duverger T](#), [Balogoun A](#), [Ibrahim A](#), [Briend A](#).

MUAC I: Mothers can reliably measure MUAC

Results

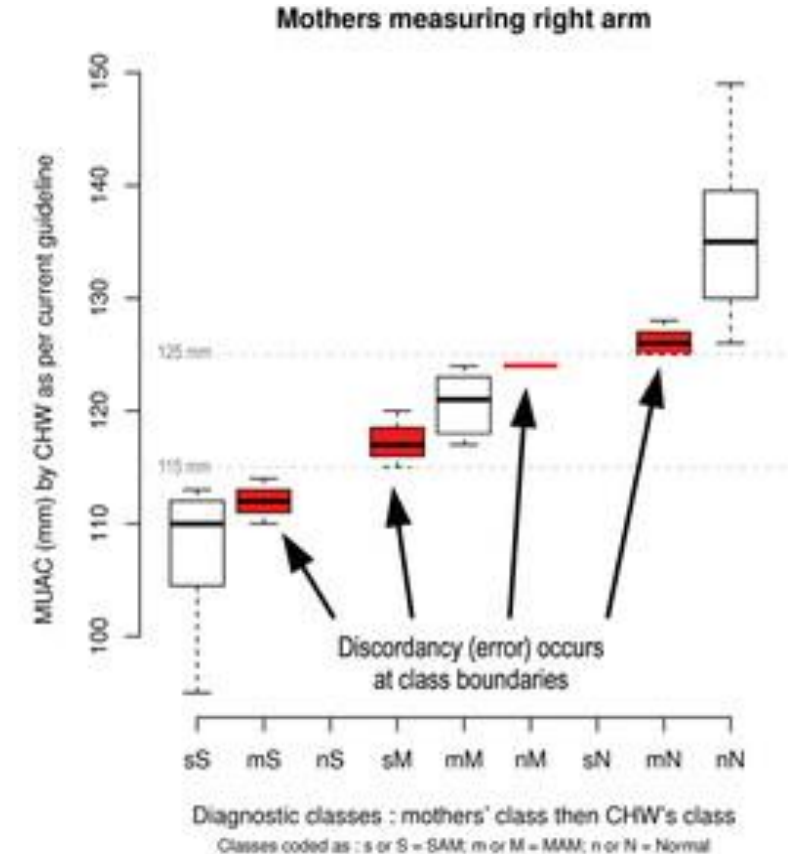
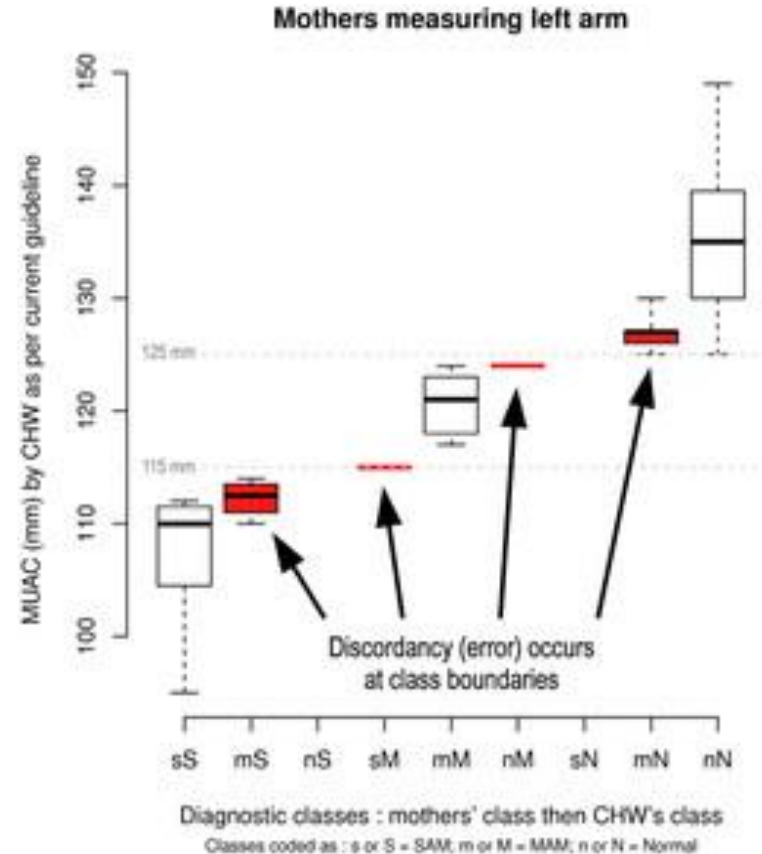
(n = 103 mother-child pairs)

→ Excellent agreement

→ Errors only at boundaries

→ No difference in:

- left vs right arm measures
- Estimating vs measuring mid point



Source: Blackwell *et al.* *Archives of Public Health* 2015 **73**:26 doi:10.1186/s13690-015-007

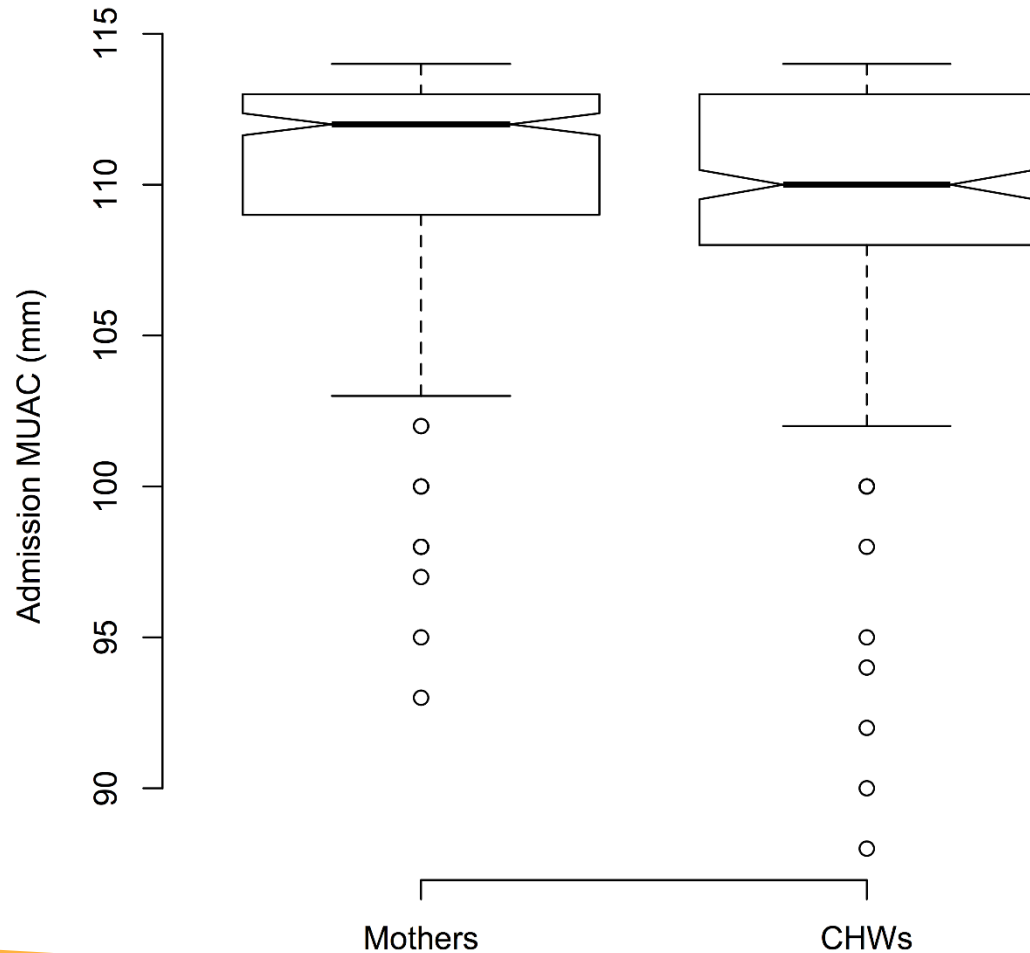
MUAC II: Large-scale trial

May 2013 – April 2014



[Arch Public Health](#). 2016 September (74:38). doi: 10.1186/s13690-016-0149-5. **Mothers screening for malnutrition by mid-upper arm circumference is non-inferior to community health workers: results from a large-scale pragmatic trial in rural Niger.** Alé F, Phelan KP, Issa H, Defourny I, Le Duc G, Harczi G, Issaley K, Sayadi S, Ousmane N, Yahaya I, Myatt M, Briend A, Allafort-Duverger T, Shepherd S, Blackwell N

MUAC II: Results (Distribution of MUAC at admission)



Median MUAC in Mothers vs. CHWs zone was 1.6 mm greater (95% CI = 0.65; 1.87) ($p = 0.007$) for children admitted by MUAC

Zone

MUAC II: Results (Hospitalization, Agreement, Costs)

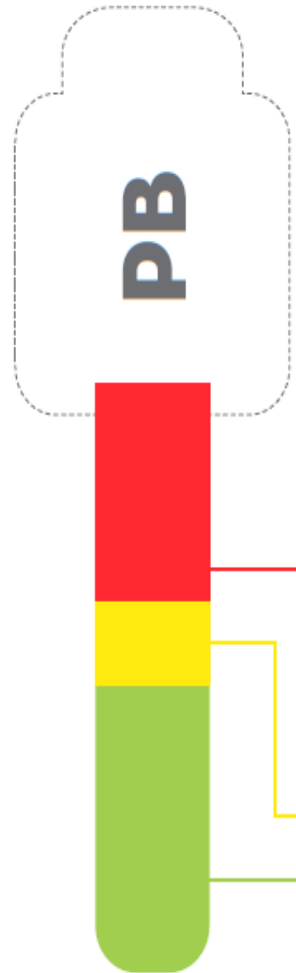
	Mothers Zone	CHWs Zone	Risk Ratio [95%CI]	p-value
Hospitalizations for all admissions:				
At admission	2.33%	9.01%	0.26 [0.17;0.38]	<0.0001
During course of treatment	7.22%	11.84%	0.61[0.47;0.79]	<0.0001
for admissions by MUAC <115 mm:				
At admission	0.70%	7.75%	0.09 [0.03;0.25]	<0.0001
During course of treatment	7.73%	13.32%	0.58 [0.40;0.85]	0.0021
Agreement with MUAC at health center	75.4%	40.1%	1.88 [1.69; 2.10]	<0.0001
Overall costs (in USD)	8 600	21 980	---	---
Cost per child <5 yo	1.04	3.00	---	---

MUAC II: Conclusions



- Making mothers the focal point of MUAC screening strategies is feasible at scale and should be included in regular CMAM programming
- Family MUAC screening strategies will be most efficient in MUAC-based programs integrating SAM/MAM (e.g. better coverage, Maust et al in Sierra Leone)

Integrating SAM/MAM : Key messages



What do we say to mothers when there is no MAM programming?

SEVERE: Go to health center within 2 days

MODERATE: ??????????

NORMAL: Continue to feed your child well

Family MUAC : The Journey to Scale-Up 2015 – today



Family MUAC : Internal changes to policy and practice



- >250,000 mothers trained 2015-2016 (Burkina Faso, Niger, Mali, Chad, etc.);
Part of the « MUAC only » study in Burkina Faso, 1,000 Days in Niger, etc
- Mirriah, Niger since the study:
 - ~170,000 mothers trained with 60.0% coverage
 - 71% of all admissions are referred by mothers
 - **Median MUAC 112.9 mm; Hospitalizations reduced by ~ 35%**

Family MUAC : External advocacy for scaling-up



- Released training guidelines and FAQ to facilitate journey to scale
- Very well received by policymakers, funders and practitioners (e.g. Part of Niger's new protocol)
- Remaining gaps:
 - Emergencies - Availability of MUAC bracelets
 - Edema - Integrating SAM/MAM programming



Thanks for listening!



Special thanks to The Ministry of Public Health in Niger, UNICEF, ECHO, and OFDA, The ALIMA and BEFEN teams, All the mothers and children in Dogo and Takieta

PS: Guidelines available at: <http://alima-ngo.org/empowering-mothers-prevent-malnutrition/>